

# Osino Namibia Minerals Exploration (Pty) Ltd

MEFT ECC APPLICATION REFERENCE No.: **APP-002339**

Final April 2018 – Feb 2021 Environmental Compliance Monitoring  
Report for Ongoing Exploration / Prospecting Activities in the  
Exclusive Prospecting License (EPL) No. 5678,  
**OMARURU DISTRICT, ERONGO REGION**

February 2021

13 Feld STREET, P. O. BOX 3489  
WINDHOEK, NAMIBIA

# PROPONENT, LISTED ACTIVITIES AND RELATED INFORMATION SUMMARY

## TYPE OF AUTHORISATIONS REQUIRING ECC

Exclusive Prospecting License (EPL) No. 5678  
MEFT ECC APPLICATION REFERENCE No: **APP-002339**

## NAME OF THE PROPONENT

Osino Namibia Minerals Exploration (Pty) Ltd

## COMPETENT AUTHORITY

Ministry of Mines and Energy (MME)

## ADDRESS OF THE PROPONENT AND CONTACT PERSON

13 Feld Street, P. O. Box 3489  
**WINDHOEK, NAMIBIA**

## CONTACT PERSON:

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## PROPOSED PROJECT

Proposed Minerals Exploration / Prospecting in the Exclusive  
Prospecting License (EPL) No. 5678

## PROJECT LOCATION

Omaruru District Erongo Region  
(Latitude: -21.235462, Longitude: 15.964463)

## ENVIRONMENTAL CONSULTANTS



*Risk-Based Solutions (RBS) CC*

(Consulting Arm of Foresight Group Namibia (FGN) (Pty) Ltd)  
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## ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Dr. Sindila Mwiya  
*PhD, PG Cert, MPhil, BEng (Hons), Pr Eng*

## **Summary Profile and Qualifications of the Environmental Assessment Practitioner (EAP) / International Resources Consultant – Dr Sindila Mwiya**

Dr Sindila Mwiya has more than eighteen (18) years of practical field-based technical industry experience in Environmental Assessment (SEA, EIA, EMP, EMS), Energy (Renewable and Non-renewable energy sources), onshore and offshore resources (minerals, oil, gas and water) exploration / prospecting, operation and utilisation, covering general and specialist technical exploration and recovery support, Health, Safety and Environment (HSE) permitting for Geophysical Surveys such as 2D, 3D and 4D Seismic, Gravity and Electromagnetic Surveys for mining, energy and petroleum (oil and gas) operations support, through to engineering planning, layout, designing, logistical support, recovery, production / operations, compliance monitoring, rehabilitation, closure and aftercare projects lifecycles. He continues to work internationally in the resources (mining and petroleum) and energy sectors, from permitting through to exploration and production. From the frontier regions (high risk hydrocarbons exploration zones) of South Africa and Namibia, to the prolific oil and gas fields of the Middle East, Angola and the West African Gulf of Guinea, Dr Mwiya has been directly involved in field-based aerial, ground and marine geophysical (gravity, magnetics and seismic) surveys, been onboard exploration drilling rigs, onboard production platforms, conducted public and stakeholder consultations and engagements, and worked with highly technical and well organised and committed clients and third-party teams from emerging and well established global resources and energy companies from many countries such as the UK, France, USA, Russia, Canada, Croatia, Norway, the Netherlands, Spain, Brazil, China, South Africa, Equatorial Guinea, Angola and Nigeria. He is fully aware of all the competing interests and niche donation-based business environmental advocacy opportunism that exists in the resources sector from the local, regional, and international perspectives.

Through his companies, Risk-Based Solutions (RBS) CC and Foresight Group Namibia (FGN) (Pty) Ltd which he founded, he has undertaken more than 200 projects for Local (Namibia), Continental (Africa) and International (Global) based clients. He has worked and continue to work for Global, Continental and Namibian based reputable resources (petroleum and mining / minerals) and energy companies such as Dundee Precious Metals (Namibia / Canada), Headspring Investment (Namibia/ Russia), Green Energy (Namibia/UK/Russia), EMGS (UK/ Norway), Lepidico (Australia / UK), Best Sheer / Bohale (Namibia / China), CGG Services UK Limited (UK/ France/Namibia), BW Offshore (Norway/Singapore /Namibia), Shell Namibia B. V. Limited (Namibia/ the Netherlands), Tullow Oil (UK/Namibia), Debmarine (DBMN) (Namibia), Reconnaissance Energy Africa Ltd (ReconAfrica) (UK/Canada/Namibia), Osino Resource Corporation (Canada/USA/Namibia), Petrobras Oil and Gas (Brazil) / BP (UK) / Namibia, REPSOL (Spain/ Namibia), ACREP (Namibia/Angola), Preview Energy Resources (UK), HRT Africa (Brazil / USA/ Namibia), Chariot Oil and Gas Exploration (UK/ Namibia), NABIRM (USA/ Namibia), Serica Energy (UK/ Namibia), Eco (Atlantic) Oil and Gas (Canada / USA/ Namibia), ION GeoVentures (USA), PGS UK Exploration (UK), TGS-NOPEC (UK), Maurel & Prom (France/ Namibia), GeoPartners (UK), PetroSA Equatorial Guinea (South Africa / Equatorial Guinea/ Namibia), Preview Energy Resources (Namibia / UK), Sintezneftegaz Namibia Ltd (Russia/ Namibia), INA Namibia (INA INDUSTRIJA NAFTE d.d) (Croatia/ Namibia), Namibia Underwater Technologies (NUTAM) (South Africa/Namibia), InnoSun Holdings (Pty) Ltd and all its subsidiary renewable energy companies and projects in Namibia (Namibia / France), HopSol (Namibia/Switzerland), Momentous Solar One (Pty) Ltd (Namibia / Canada), OLC Northern Sun Energy (Pty) Ltd (Namibia) and more than 100 local companies. Dr Sindila Mwiya is highly qualified with extensive practical field-based experience in petroleum, mining, renewable energy (Solar, Wind, Biomass, Geothermal and Hydropower), Non-Renewable energy (Coal, Petroleum, and Natural Gas), applied environmental assessment, management, and monitoring (Scoping, EIA, EMP, EMP, EMS) and overall industry specific HSE, cleaner production programmes, Geoenvironmental, geological and geotechnical engineering specialist fields.

Dr Sindila Mwiya has undertaken and continue to undertake and manage high value projects on behalf of global and local resources and energy companies. Currently, (2020-2023) Dr Sindila Mwiya is responsible for permitting planning through to operational and completion compliance monitoring, HSE and engineering technical support for multiple major upstream onshore and offshore petroleum, minerals, and mining projects, Solar and Wind Energy Projects, manufacturing and environmentally sustainable, automated / smart and Climate Change resilient homes developments in different parts of the World including Namibia. He continue to worked as an International Resources Consultant, national Environmental Assessment Practitioner (EAP) / Environmentally Sustainable, automated / smart and Climate Change resilient homes developer, Engineering / Technical Consultant (RBS / FGN), Project Manager, Programme Advisor for the Department of Natural and Applied Sciences, Namibia University of Science and Technology (NUST) and has worked as a Lecturer, University of Namibia (UNAM), External Examiner/ Moderator, NUST, National (Namibia) Technical Advisor (Directorate of Environmental Affairs, Ministry of Environment, Forestry and Tourism / DANIDA – Cleaner Production Component) and Chief Geologist for Engineering and Environment Division, Geological Survey of Namibia, Ministry of Mines and Energy and a Field-Based Geotechnician (Specialised in Magnetism, Seismic, Gravity and Electromagnetics Exploration and Survey Methods) under the Federal Institute for Geoscience and Natural Resources (BGR) German Mineral Exploration Promotion Project to Namibia, Geophysics Division, Geological Survey of Namibia, Ministry of Mines and Energy.

He has supervised and continue to support a number of MScs and PhDs research programmes and has been a reviewer on international, national and regional researches, plans, programmes and projects with the objective to ensure substantial local skills development, pivotal to the national socioeconomic development through the promotion of sustainable natural resources coexistence, management, development, recovery, utilisation and for development policies, plans, programmes and projects financed by governments, private investors and Namibian development partners. Since 2006 until 2017, he has provided extensive technical support to the Department of Environmental Affairs (DEA), Ministry of Environment, Forestry and Tourism (MEFT) through GIZ in the preparation and amendments of the Namibian Environmental Management Act, 2007, (Act No. 7 of 2007), Strategic Environmental Assessment (SEA) Regulations, Environmental Impact Assessment (EIA) Regulations (as well as the SEA and EIA Guidelines and Procedures all aimed at promoting effective environmental assessment and management practices in Namibia. Among his academic achievements, Dr Sindila Mwiya is a holder of a PhD within the broader fields of Engineering Geology/Geotechnical / Geoenvironmental / Environmental Engineering and Artificial Intelligence with a research thesis titled Development of a Knowledge-Based System Methodology (KBSM) for the Design of Solid Waste Disposal Sites in Arid and Semiarid Environments, MPhil/PG Cert and BEng (Hons) (Engineering Geology and Geotechnics) qualifications from the University of Portsmouth, School of Earth and Environmental Sciences, United Kingdom. During the 2004 Namibia National Science Awards, organised by the Namibian Ministry of Education, and held in Windhoek, Dr Sindila Mwiya was awarded the Geologist of the Year for 2004, in the professional category. Furthermore, as part of his professional career recognition, Dr Sindila Mwiya is a life member of the Geological Society of Namibia, Consulting member of the Hydrogeological Society of Namibia and a Professional Engineer registered with the Engineering Council of Namibia.

**WINDHOEK FEBRUARY 2021**

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# EXECUTIVE SUMMARY

## 1. Introduction

Toroa Minerals Exploration (Pty) Ltd (the **Proponent**) holds minerals rights under the Exclusive Osino Namibia Minerals Exploration (Pty) Ltd (the Proponent) holds minerals rights under the Exclusive Prospecting License (EPL) No. 5678 situated in Omaruru District, Erongo Region. The EPL No. 5678 was granted on 23/02/2016 and will expire on the 22/02/2021. A renewal application has been submitted and is currently pending with the Competent Authority, the Ministry of Mines and Energy (MME). The Proponent intends to continue with minerals prospecting activities with special focus on base and rare and precious metals. The EPL 5678 with a total area of 16307.8702 Ha, covers portions of Tjirundo 91, Tjirundo South 149, Piechazek 229, Epako 38, Epako South 39, Otjua 37, Roidina 217 and Okarumuti 216 commercial farms.

The proponent is undertaking prospecting using techniques such as mapping, geophysical surveys, sampling and drilling operations, starting with the desktop studies, followed by regional and local detailed field-based activities. Geochemical sampling and geological mapping were among the key field-based activities that have been undertaken for the period review, April 2018-February 2021.

## 2. The Environmental Monitoring Requirements and Reporting

This Environmental Monitoring Report covering the period April 2018-February 2021 has been prepared by Risk-Based Solution (RBS) CC on behalf of Mitten Minerals Exploration (Pty) Ltd (the Proponent) in line with the provisions of the Environmental Management Plan (EMP) and the conditions of the Environmental Clearance Certificate (ECC) issued by the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT) dated 20<sup>th</sup> March 2018. The EMP requirements were implemented by the proponent as well as all the contractors and subcontractors who undertook the various activities associated with the ongoing minerals exploration in the EPL 5678.

## 3. Environmental Monitoring Implementation

The following is the summary of the key mitigation measures as provided in the EMP and implemented by the proponent as applicable:

1. Project planning and implementation.
2. Implementation of the EMP.
3. Public and stakeholders relations.
4. Measures to enhance positive socioeconomic impacts.
5. Environmental awareness briefing and training.
6. Erection of supporting exploration infrastructure.
7. Use of existing access roads, tracks and general vehicle movements.
8. Mitigation measures for preventing flora destruction.
9. Mitigation measures for preventing faunal destruction.
10. Mitigation measures to be implemented with respect to the exploration camps and exploration sites.
11. Mitigation measures for surface and groundwater protection as well as general water usage.

12. Mitigation measures to minimise negative socioeconomic impacts.
13. Mitigation measures to minimise health and safety impacts.
14. Mitigation measures to minimise visual impacts.
15. Mitigation measures to minimise vibration, noise, and air quality.
16. Mitigation measures for waste (solid and liquid) management.
17. Rehabilitation plan, and.
18. Environmental data collection.

Overall, the above mitigation measures have been implemented for the period April 2018-February 2021 under review and no diversion to the above EMPs has been observed.

#### **4. Conclusions**

The environmental monitoring activities undertaken by the Proponent are in accordance with the provisions of the Environmental Clearance Certificate (ECC) that was issued by the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism in line with the Environmental Management Plan (EMP) Report prepared and submitted by the Proponent.

Based on the review of all the information and monitoring data provided by Mitten Minerals Exploration (Pty) Ltd, all the applicable EMPs with respect to the exploration activities undertaken for the period under review were implemented and monitored. Based on the results of the overall environmental performance monitoring undertaken for the period April 2018-February 2021, no diversions from the environmental commitments as outlined in the Environmental Policy of the Proponent (Mitten Minerals Exploration (Pty) Ltd), Environmental Management Plan (EMP) and the Environmental Clearance Certificate (ECC) have been observed or recorded (Annex 1). The ongoing exploration activities are being undertaken with the highest Health, Safety and Environment (HSE) commitments.

# 1. BACKGROUND

## 1.1 Introduction

Osino Namibia Minerals Exploration (Pty) Ltd (the Proponent) holds minerals rights under the Exclusive Prospecting License (EPL) No. 5678. The EPL No. 5678 was granted on the 23/02/2016 and will expire on the 22/02/2021. A renewal application has been submitted and is currently pending with the Competent Authority, the Ministry of Mines and Energy (MME).

## 1.2 Review of the Project Activities

The Proponent intends to continue with minerals prospecting activities with special focus on base and rare, and precious metals. The ongoing exploration programme covers the following activities:

- (i) Initial desktop exploration activities (no field-work undertaken).
- (ii) Regional reconnaissance field-based mapping and sampling activities (Subject to the positive results of (i)).
- (iii) Initial local field-based mapping and sampling activities (Subject to the positive results of (i) and (ii) above).
- (iv) Detailed local field-based activities such as local geological mapping, geochemical mapping, and sampling, trenching, and drilling of closely spaced boreholes and bulk sampling (Subject to the positive results of (i) - (iii) above).
- (v) Prefeasibility and feasibility studies (Subject to the positive results of (i) and (iv) above).

The extent of the field-based support and logistical activities is dependent on the scale of exploration activities being undertaken. The exploration activities have always been supported by existing tracks and campsites / farmstead as well as existing accommodation in the local area as may be applicable. In the absence of existing tracks, the field team did create such new tracks with the permission of the land owner/s and depending on the scale of exploration.

In the absence of existing suitable campsite / farmstead, a temporary camp site was setup at suitable locations in line with the EMP provisions within the EPL area. The size of the exploration camp has always been of a very limited footprint.

## 1.3 Location, Land Use, Supporting Infrastructure and Services

The Exclusive Prospecting License (EPL) No 5678 is located in the Omaruru District, Erongo Region (Figs. 1.1 and 1.2). The license area falls within privately owned commercial farmland and covers the following farms: Tjirundo 91, Tjirundo South 149, Piechazek 229, Epako 38, Epako South 39, Otjua 37, Roidina 217 and Okarumuti 216. (Fig. 1.3).

The general land use of the area is mainly dominated by agriculture (cattle and small stock farming) and privately owned Safari Game Farms / Game Hunting Farms and some farms such as the Epako Farm No. 38 has a top-end lodge facilities and the entire 11000 Ha farm is operated as a private game reserve that support tourism and conservation in the local area and region. Game farms are also important conservation areas for endemic and protected flora and act as sanctuaries for endangered faunal species.

Game farms such as the Epako 38 offers visitors the opportunity to be close to nature with a variety of tailor made tourism products such game viewing, trails and hunting activities. The Epako Private Game Reserve has many mammals species and 170 bird species ([www.epako.com.na/](http://www.epako.com.na/)). The facility offers afternoon safari game drives and/or bush walks. The reserve is home to two of Africa's "Big 5", namely White Rhino and leopard. Other key species of interest include Spotted Hyaena, Cheetah, Damara Dik



Dik, Hartmans Mountain Zebra and Bat Eared Foxes. Offers. The summary of other land uses activities found in the general areas includes: tourism, conservation, prospecting and small-scale mining operations.

The EPL area is accessible through the C33 tarred road linking Omaruru to the small settlement of Kalkfeld (Figs. 1.2 -1.3). Several private farm roads and minor tracks are available within the EPL area for internal access (Fig. 1.4). The nearest major Town is Omaruru situated about 26 km to the south from the centre of the EPL area. The small settlement of Kalkfeld is about 40 km to the north from the centre of the EPL area.

Walvis Bay the main Port is situated about 300 km to the west of the EPL area. Namibia's capital City, Windhoek, is located approximately 335 km southeast of EPL 5678 Area (Fig. 1.1).

The proposed / ongoing exploration programme will not require major water and energy resources. Water requirements for exploration will be provided from the available local water resources supplied by private boreholes and NamWater local / regional water supply schemes. Electricity needs will be supplied by generators and solar installations while diesel and petrol will be the main sources of fuels and readily available in the Town of Omaruru.

In an event of a discovery of economic minerals resources, and the subsequent development of a mining project within the EPL Area, there will be a need to have reliable energy and water supply sources. Sources of the water supply will be provided by NamWater from possible local and regional groundwater resources still to be determined.

Electricity supply will be provided by NamPower from already existing infrastructure in the region also still to be determined. The assessment of the energy and water resources requirements for any possible mining operations will be evaluated in detail in the environmental assessment that will be undertaken as part of the feasibility study if economic resources are discovered within the EPL 5678 Area.

## **1.4 Environmental Regulatory Requirements**

The proposed minerals exploration / prospecting activities in the EPL 5678 falls under the activities that are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and cannot be undertaken without an Environmental Clearance Certificate (ECC). To obtain the ECC for the listed activities, the Proponent was required to have undertaken Environmental Assessment comprising Environmental Scoping and Environmental Management Plan (EMP) for the proposed minerals prospecting programme.

The ECC application together with the supporting Scoping and EMP Report were submitted to the Environmental Commissioner in Ministry of Environment, and Tourism (MET) now the Ministry of Environment, Forestry and Tourism (MEFT) in March 2017.

The ECC which was granted on the 20<sup>th</sup> March 2018 and as shown in Fig. 1.4 will expire in March 2021 and need to be renewed. This updated Scoping and EMP Report has been prepared by Risk-Based Solutions (RBS) CC on behalf of the Proponent to support the application for the renewal and transfer of the ECC as shown in Fig. 1.4.

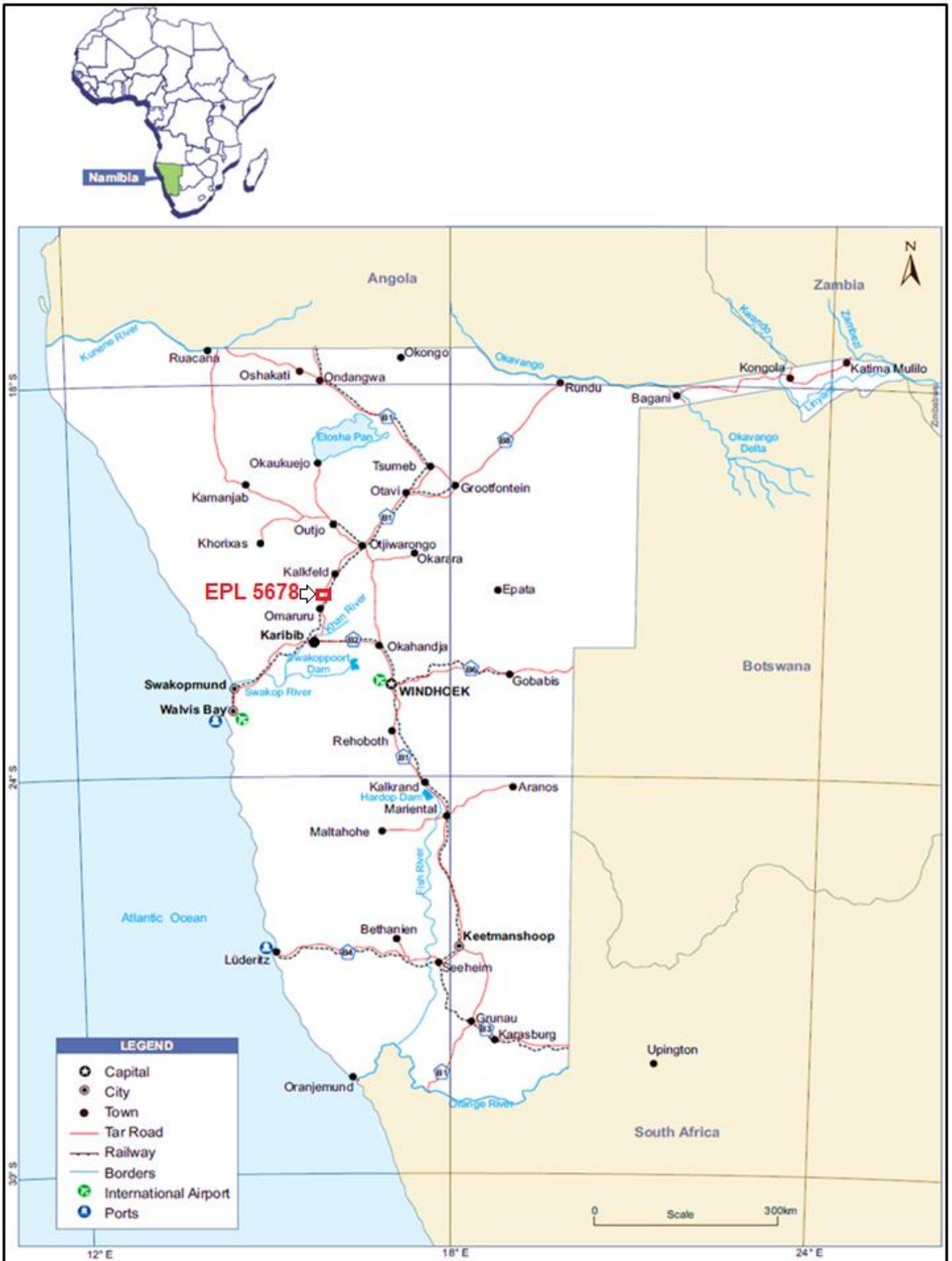


Figure 1.1: Detailed regional location of the EPL 5678.

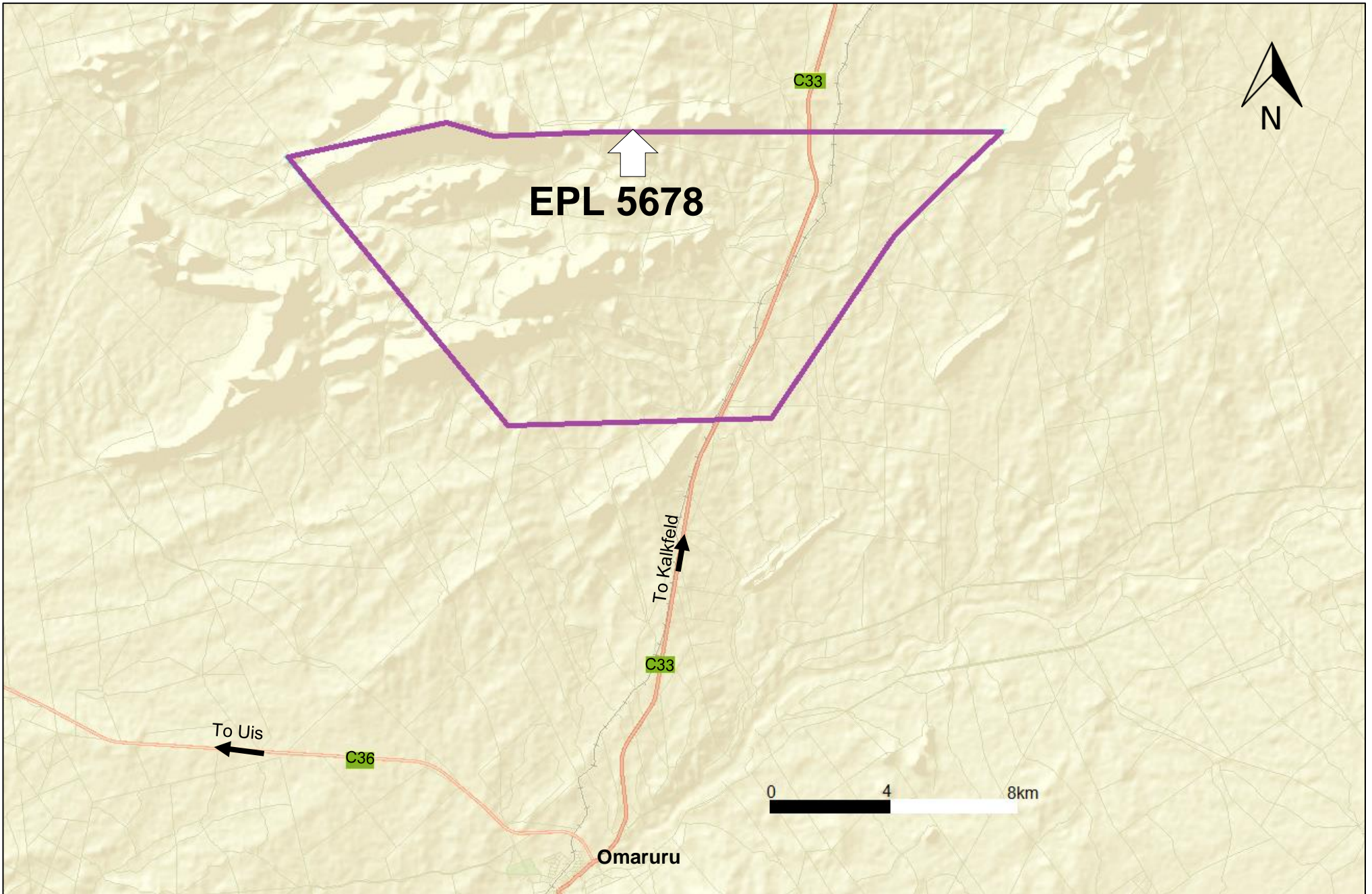


Figure 1.2: Detailed regional location of the EPL 5678 (Data Source: <http://portals.flexicadastre.com/Namibia>).



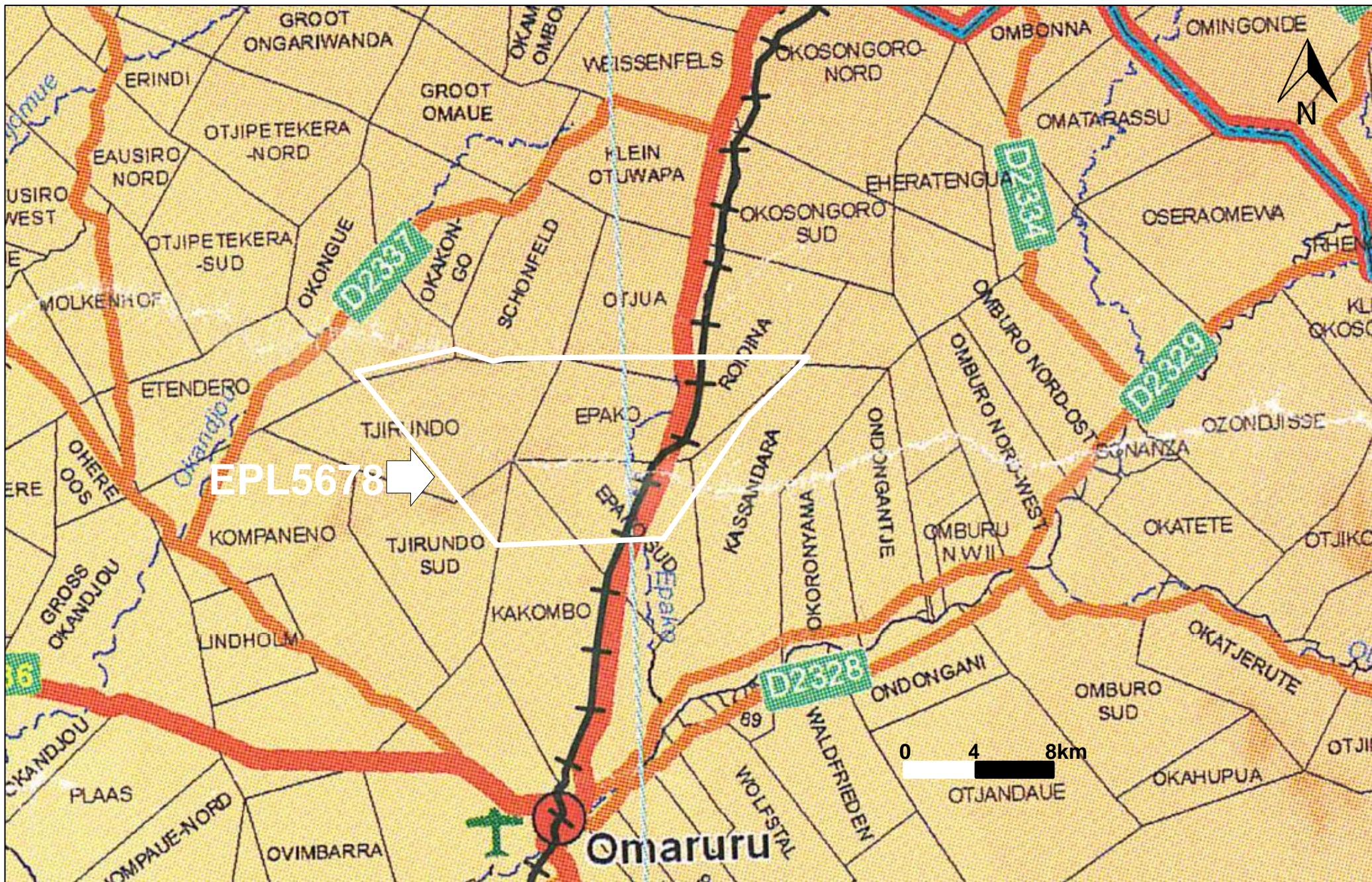


Figure 1.3: Commercial farmland covered by the EPL 5678 and existing access (Source: Namibia 1:1000000 Registration Divisions Extract).





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19 March 2018

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

The Managing Director  
Osino Namibia Minerals Explorations (Pty) Ltd  
P.O. Box 3489  
Windhoek  
Namibia

Dear Sir or Madam,

**SUBJECT: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR THE PROPOSED EXPLORATION /PROSPECTING IN THE EXCLUSIVE PROSPECTING LICENSE (EPL) NO. 5678, OMARURU DISTRICT, ERONGO REGION**

The Environmental Scoping Report and Environmental Management Plan submitted are sufficient as it made provisions of the environmental management concerning the project's activities. From this perspective regular environmental monitoring and evaluations should be conducted. Targets for improvements should be established and monitored from time to time.

This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project. From this perspective, I issue this clearance with the condition that all land owners may be notified at all times on the operations of the project.

On the basis of the above, this letter serves as an Environmental Clearance Certificate for the project to commence. However, this clearance letter does not in any way hold the Ministry of Environment and Tourism accountable for misleading information, nor any adverse effects that may arise from this project activity. Instead, full accountability rests with Osino Namibia Minerals Exploration (Pty) Ltd and their consultants.

This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office.

Yours sincerely,

  
Teofilus Nghitila  
ENVIRONMENTAL COMMISSIONER



**“Stop the poaching of our rhinos”**

*All official correspondence must be addressed to the Permanent Secretary*

Figure 1.4: Copy of the ECC granted on the 20th March 2018 to Osino Namibia Minerals Exploration (Pty) Ltd will expire in March 2021 and need to be renewed.

## 2. ENVIRONMENTAL MONITORING PLAN

### 2.1 Objectives of the Monitoring Plan

The main objectives of the monitoring plan are the following:

- ❖ Verify of the correct application of the monitoring measures as presented in the Environmental Management Plan (EMP).
- ❖ Establish a monitoring program for the most relevant environmental parameters, identifying the monitoring activities and frequencies.
- ❖ Identify the impacts foreseen by the project and any unforeseen deviations, allowing for the implementation of corrective measures as needed.
- ❖ Provide assurance to stakeholders requirements with respect to environmental and social performance.
- ❖ Check the overall effectiveness of the preconstruction, construction and operational procedures in protecting the receiving environment.
- ❖ Comply with regulations, standards and EPL and ECC licence conditions, and.
- ❖ Compare actual impacts with those predicted in the Scoping and EMP Report and thereby aim to improve the assessment and monitoring processes for possible.

**Overall, the above objectives have been achieved for the period April 2018-February 2021 under review.**

### 2.2 Roles and Responsibilities

#### 2.2.1 Implementation of the EMP

Management of the environmental elements that may be affected by the different activities of the proposed / ongoing exploration is an important element of the proposed / ongoing exploration activities. The EMP also identified the activity groups / environmental elements, the aspects / targets, the indicators, the schedule for implementation and who should be responsible for the management to prevent major impacts that the different exploration activities may have on the receiving environment (physical and biological environments).

#### 2.2.2 Proponent's Representative (PR) / Project Manager (PM)

Whenever required and necessary, the proponent appointed a **Proponent's Representative (PR) / Project Manager (PM)** with the following responsibilities with respect to the EMP implementation:

- ❖ Act as the site project manager and implementing agent.
- ❖ Ensure that the proponent's responsibilities are executed in compliance with the relevant legislation.
- ❖ Ensure that all the necessary environmental authorizations and permits have been obtained.
- ❖ Assist the exploration contractor/s in finding environmentally responsible solutions to challenges that may arise.
- ❖ Should the PR be of the opinion that a serious threat to, or impact on the environment may be caused by the exploration activities, he/she may stop work. the proponent must be informed of the reasons for the stoppage as soon as possible.

- ❖ The PR has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP.
- ❖ Should the Contractor or his/her employees fail to show adequate consideration for the environmental aspects related to the EMP, the PR can have person(s) and/or equipment removed from the site or work suspended until the matter is remedied.
- ❖ Maintain open and direct lines of communication between the landowners and proponent, as well as any other identified Interested and Affected Parties (I&APs) with regards to environmental matters, and.
- ❖ Attend regular site meetings and inspections as may be required for the proposed / ongoing exploration programme.

### 2.2.3 Project Health, Safety and Environment (Project HSE)

Whenever required and necessary, the proponent appointed a Project Health, Safety and Environment (Project HSE) with the following responsibilities with respect to the EMP implementation:

- ❖ Assist the PR in ensuring that the necessary environmental authorizations and permits have been obtained.
- ❖ Assist the PR and Contractor in finding environmentally responsible solutions to challenges that may arise.
- ❖ Conduct environmental monitoring as per EMP requirements.
- ❖ Carry out regular site inspections (on average once per week) of all exploration areas with regards to compliance with the EMP. report any non-compliance(s) to the PR as soon as possible.
- ❖ Organize for an independent internal audit on the implementation of and compliance to the EMP to be carried out half way through each field-based exploration activity. audit reports to be submitted to the PR.
- ❖ Continuously review the EMP and recommend additions and/or changes to the EMP document.
- ❖ Monitor the Contractor's environmental awareness training for all new personnel coming onto site.
- ❖ Keep records of all activities related to environmental control and monitoring. the latter to include a photographic record of the exploration activities, rehabilitation process, and a register of all major incidents, and.
- ❖ Attend regular site meetings.

### 2.2.4 Contractors and Subcontractors

The responsibilities of the **Contractors and Subcontractors** appointed by the proponent to undertake certain field-based activities of the proposed / ongoing exploration programme include:

- ❖ Comply with the relevant legislation and the EMP provision.
- ❖ Preparation and submission to the proponent through the Project HSE of the following Management Plans:
  - Environmental Awareness Training and Inductions.

- Emergency Preparedness and Response.
  - Waste Management, and.
  - Health and Safety.
- ❖ Ensure adequate environmental awareness training for senior site personnel.
  - ❖ Environmental awareness presentations (inductions) to be given to all site personnel prior to work commencement. the Project HSE is to provide the course content and the following topics, at least but not limited to, should be covered:
    - The importance of complying with the EMP provisions.
    - Roles and Responsibilities, including emergency preparedness.
    - Basic Rules of Conduct (Do's and Don'ts).
    - EMP: aspects, impacts and mitigation.
    - Fines for Failure to Adhere to the EMP, and.
    - Health and Safety Requirements.
  - ❖ Record keeping of all environmental awareness training and induction presentations, and.
  - ❖ Attend regular site meetings and environmental inspections.

### **2.2.5 Risk-Based Solutions (External)**

The responsibilities of Risk-Based Solutions (RBS) included the following:

- ❖ Provided external independent monitoring / auditing support services.
- ❖ Undertook independent monitoring activities.
- ❖ Provided external HSE compliance monitoring and reporting, and.
- ❖ Prepared this environmental monitoring report.

## **2.3 Reporting Process**

The daily, weekly, monthly, and annual related environmental monitoring activities have all contributed to the preparation of this April 2018-February 2021 annual environmental monitoring report.

## **2.4 Monitoring Strategy**

### **2.4.1 Overview**

The monitoring programme was developed to allow maximum flexibility in both the timing and site conditions to allow adaptation to the conditions encountered and to allow decisions to be made in the field and based on all available data (Annex 1).

### **2.4.2 Monitoring Implementation**

The following is the summary of the monitoring, observations and auditing activities undertaken for the period April 2018-February 2021 under review (Annex 1):



- (i) Monitoring of environmental performance implementation / environmental awareness training.
- (ii) Monitoring of environmental performance for the temporal and permanent structures.
- (iii) Environmental data collection.
- (iv) Health, Safety and Environment (HSE).
- (v) Relations with neighbours, site personnel and general public.
- (vi) Management of the natural habitat and surficial materials management.
- (vii) Tracks and off-road driving.
- (viii) Management of surface and groundwater, and.
- (ix) Public relations.

### **3. RESULTS OF THE ENVIRONMENTAL MONITORING**

#### **3.1 Hierarchy of Mitigation Measures Implementation**

A hierarchy of methods for mitigating significant adverse effects was adopted with respect to the implementation of the EMP for the EPL 5678 was as follows and in order of preference:

- (i) Enhancement, e.g. provision of new habitats.
- (ii) Avoidance, e.g. sensitive design to avoid effects on ecological receptors.
- (iii) Reduction, e.g. limitation of effects on receptors through design changes. and
- (iv) Compensation, e.g. community benefits.

#### **3.2 Mitigation Measures Implementation**

The Environmental Management Plan (EMP) provides a detailed plan of action required in the implementation of the mitigation measures for minimising and maximising the identified negative and positive impacts respectively. The EMP also provides the management actions with roles and responsibilities requirements for implementation of environmental management strategies by the proponent through the Contractors and Subcontractors who will be undertaking the exploration activities. The EMP gives commitments including financial and human resources provisions for effective management of the likely environmental liabilities during and after the implementation of the proposed / ongoing exploration programme.

Detailed specific mitigations measures for implementation by the proponent with respect to the proposed / ongoing exploration programme activities and for the field-based exploration activities were prepared in the Scoping and EMP Report. The following is the summary of the overall key areas of the mitigation measures provided in Tables 3.1- 6.18:

1. Project planning and implementation.
2. Implementation of the EMP.
3. Public and stakeholders relations.
4. Measures to enhance positive socioeconomic impacts.
5. Environmental awareness briefing and training.
6. Erection of supporting exploration infrastructure.
7. Use of existing access roads, tracks and general vehicle movements.
8. Mitigation measures for preventing flora destruction.
9. Mitigation measures for preventing faunal destruction.
10. Mitigation measures to be implemented with respect to the exploration camps and exploration sites.
11. Mitigation measures for surface and groundwater protection as well as general water usage.
12. Mitigation measures to minimise negative socioeconomic impacts.
13. Mitigation measures to minimise health and safety impacts.

14. Mitigation measures to minimise visual impacts.
15. Mitigation measures to minimise vibration, noise and air quality.
16. Mitigation measures for waste (solid and liquid) management.
17. Rehabilitation plan, and.
18. Environmental data collection.

Table 3.1: Project planning and implementation.

OBJECTIVES	INDICATOR	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
Establish a strong environmental awareness protocol from project implementation to final closure in order to ensure the least possible impact to the environment.	<ol style="list-style-type: none"> <li>Resources (Human and Financial) are provided for the Environmental Awareness and Training, Regular Safety, Health and Environment meetings and for internal and external Environmental Monitoring Costs as well as for any rehabilitation costs that may arise.</li> <li>Appointment of a senior and experienced persons as Proponent's Representative (PR), Project Manager (PM) and Project HSE to assume responsibility for environmental issues.</li> <li>All individuals including sub-contractors who work on, or visit, the sites are aware of the contents of the Environmental Policy and the EMP.</li> <li>The EMP and Environmental Policy will be included in Tender Documents.</li> <li>Field visit will take place during which main access tracks will be discussed in cooperation with the land owner/s</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping, and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.2: Implementation of the EMP.

OBJECTIVES	INDICATOR	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<ol style="list-style-type: none"> <li>Define roles and responsibilities in terms of the EMP. To make all personnel, contractors and subcontractors aware of these roles and responsibilities to ensure compliance with the EMP provisions.</li> <li>Implement environmental management that is preventative and proactive.</li> <li>Establish the resources, skills, etc. required for effective environmental management.</li> </ol>	<ol style="list-style-type: none"> <li>Senior staff and senior contractors are aware of, and practice the EMP requirements. These persons shall be expected to know and understand the objectives of the EMP and will, by example, encourage suitable environmentally friendly behaviour to be adopted during the exploration</li> <li>Recognition will be given to appropriate environmentally acceptable behaviour.</li> <li>Inappropriate behaviour will be corrected. An explanation to why the behaviour is unacceptable must be given, and, if necessary, the person will be disciplined. e.g. fees set out for non-compliance</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.3: Public and stakeholders relations.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
Maintain sound relationships with the Other land users/ land owner/s and other stakeholders / public	<ol style="list-style-type: none"> <li>No littering or any other activity prohibited</li> <li>Permission to utilise water as well as all applicable permits are obtained.</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.4: Measures to enhance positive socioeconomic impacts.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Measures to enhance positive socioeconomic impacts in order to:</p> <ol style="list-style-type: none"> <li>Avoid exacerbating the influx of unemployed people to the area.</li> <li>Develop a standardised recruitment method for sub-contractor and field workers.</li> </ol>	<ol style="list-style-type: none"> <li>Stipulate a preference for local contractors in its tender policy. Preference to local contractors should still be based on competitive business principles and salaries and payment to local service providers should still be competitive.</li> <li>Develop a database of local businesses that qualify as potential service providers and invite them to the tender process.</li> <li>Scrutinise tender proposals to ensure that minimum wages were included in the costing.</li> <li>Stipulate that local residents should be employed for temporary unskilled/skilled and where possible in permanent unskilled/skilled positions as they would reinvest in the local economy.</li> <li>Must ensure that potential employees are from the area, they need submit proof of having lived in the area for a minimum of 5 years.</li> <li>Must ensure that contractors adhere to Namibian Affirmative Action, Labour and Social Security, Health and Safety laws. This could be accomplished with a contractual requirement stipulating that monthly proof should be submitted indicating payment of minimum wages to workers, against their ID numbers, payment of social security and submission of affirmative action data.</li> <li>Encouraged to cater for the needs of employees to increase the spending of wages locally.</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.5: Environmental awareness briefing and training.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
Implement environmental awareness briefing / training for individuals who visit, or work, on site.	<ol style="list-style-type: none"> <li>Every senior/supervisory member of the team shall familiarise themselves with the contents of the EMP. They shall understand their roles and responsibilities with regard to personnel and project compliance with the EMP.</li> <li>Subject to agreement of the parties, the Environmental Coordinator will hold an Environmental Awareness Briefing meeting, which shall be attended by all contractors before the start of the mineral exploration activities.</li> <li>Briefings on the EMP and Environmental Policy shall discuss the potential dangers to the environment of the following activities: public relations, littering, off-road driving, waste management, poaching and plant theft etc. The need to preserve soil, conserve water and implement water saving measures shall be presented.</li> <li>Individuals can be questioned on the Environmental Philosophy and EMP and can recall contents.</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.6: Erection of supporting exploration infrastructure.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<ol style="list-style-type: none"> <li>Get Environmental Clearance before implementation</li> <li>Establishment of the supporting exploration infrastructure done on an area with the least disturbance to the environment and within the non-sensitive areas</li> </ol>	<ol style="list-style-type: none"> <li>Documented Environmental Clearance from MET.</li> <li>All on site exploration infrastructure (e.g. water tanks, sewage tanks, waste disposal) are not situated on environmental sensitive area and have disturbed as less as possible.</li> <li>No littering.</li> </ol>	<ol style="list-style-type: none"> <li>Regional reconnaissance field-based mapping and sampling activities.</li> <li>Initial local field-based mapping and sampling activities.</li> <li>Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>Proponent's Representative (PR)</li> <li>Project Manager (PM)</li> <li>Project HSE</li> <li>Contractor</li> <li>Subcontractors</li> </ol>	Proponent met the provisions of the EMP.

Table 3.7: Use of existing access roads, tracks and general vehicle movements.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>1. Plan a road/track network that considers the environmental sensitivity of the area and a long-term tourism potential, and which is constructed in a technically and environmentally sound manner.</p> <p>2. Stick to the recommended track and sensitivity management zones.</p>	<ol style="list-style-type: none"> <li>1. Avoid unnecessary affecting areas viewed as important habitat – i.e. Ephemeral River and its network of tributaries of ephemeral rivers. rocky outcrops. clumps of protected tree species.</li> <li>2. Make use of existing tracks/roads as much as possible throughout the area.</li> <li>3. Do not drive randomly throughout the area (could cause mortalities to vertebrate fauna and unique flora. accidental fires. erosion related problems, etc.).</li> <li>4. Avoid off-road driving at night as this increases mortalities of nocturnal species.</li> <li>5. Implement and maintain off-road track discipline with maximum speed limits (e.g.30km/h) as this would result in fewer faunal mortalities and limit dust pollution.</li> <li>6. Use of "3-point-turns" rather than "U-turns".</li> <li>7. Where tracks have to be made to potential exploration sites off the main routes, the routes should be selected causing minimal damage to the environment – e.g. use the same tracks. cross drainage lines at right angles. avoid placing tracks within drainage lines. avoid collateral damage (i.e. select routes that do not require the unnecessary removal of trees/shrubs, especially protected species).</li> <li>8. Leave vehicles on tracks and walk to point of interest, when possible.</li> <li>9. Rehabilitate all new tracks created.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.8: Mitigation measures for preventing flora and ecosystem destruction and promotion of conservation.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>1. Prevent flora and ecosystem destruction and promote conservation</p>	<ol style="list-style-type: none"> <li>1. Limit the development and avoid rocky outcrops throughout the entire area.</li> <li>2. Avoid development and associated infrastructure in sensitive areas – e.g. Ephemeral River, in/close to drainage lines, cliffs, boulder and rocky outcrops in the area, etc. This would minimise the negative effect on the local environment especially unique features serving as habitat to various species.</li> <li>3. Avoid placing access routes (roads and tracks) through sensitive areas – e.g. over rocky outcrops/ridges and along drainage lines. This would minimise the effect on localised potentially sensitive habitats in the area.</li> <li>4. Avoid driving randomly through the area (i.e. “track discipline”), but rather stick to permanently placed roads/tracks – especially during the detailed field-based exploration phase. This would minimise the effect on localised potentially sensitive habitats in the area.</li> <li>5. Stick to speed limits of maximum 30km/h as this would result in less dust pollution which could affect certain flora – e.g. lichen species. Speed humps could also be used to ensure the speed limit.</li> <li>6. Remove unique and sensitive flora (e.g. all Aloe sp.) before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.</li> <li>7. Prevent and discourage the collecting of firewood as dead wood has an important ecological role – especially during the development phase(s). Such collecting of firewood, especially for economic reasons, often leads to abuses – e.g. chopping down of live and/or protected tree species such as Acacia erioloba which is a good quality wood.</li> <li>8. Attempt to avoid the removal of bigger trees during the development phase(s) – especially with the development of access routes – as these serve as habitat for a myriad of fauna.</li> <li>9. Prevent and discourage fires – especially during the development phase(s) – as this could easily cause runaway veld fires causing problems (e.g. loss of grazing and domestic stock mortalities, etc.) for the neighbouring farmers.</li> <li>10. Rehabilitation of the disturbed areas – i.e. initial development access route “scars” and associated tracks as well as temporary accommodation sites. Preferably workers should be transported in/out to the EPL area on a daily basis to avoid excess damage to the local environment (e.g. fires, wood collection, poaching, etc.). Such rehabilitation would not only confirm the company’s environmental integrity, but also show true local commitment to the environment.</li> <li>11. Implement erosion control. The area(s) towards and adjacent the drainage line(s) are easily eroded and further development may exacerbate this problem. Avoid undertaking any exploration activities including supporting activities such as camping within 20m of the main drainage line(s) to minimise erosion problems as well as preserving the riparian associated fauna.</li> <li>12. Conduct a thorough investigation on the flora associated with the proposed exploration site(s).</li> <li>13. Prevent the introduction of potentially invasive alien plant species (e.g. Tecoma stans, Pennisetum setaceum, etc.) for ornamental purposes as part of the landscaping should mining activities eventually commence. Alien species often “escape” and become invasive causing further ecological damage.</li> <li>14. A thorough investigation of water use and ground water extraction should take place before actual mining activities commence as this would affect the local flora, especially the ephemeral riparian vegetation, not only locally, but downstream as well.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent’s Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>



Table 3.9: Mitigation measures for preventing faunal and ecosystem destruction and promotion of conservation.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Prevent faunal and ecosystem destruction and promote conservation</p>	<ol style="list-style-type: none"> <li>1. Limit the development and avoid rocky outcrops throughout the entire area.</li> <li>2. Avoid development &amp; associated infrastructure in sensitive areas – e.g. in/close to drainage lines, cliffs, boulder and rocky outcrops in the area, etc. This would minimise the negative effect on the local environment especially unique features serving as habitat to various species.</li> <li>3. Avoid placing access routes (roads &amp; tracks) through sensitive areas – e.g. over rocky outcrops/ridges and along drainage lines. This would minimise the effect on localised potentially sensitive habitats in the area.</li> <li>4. Avoid driving randomly through the area (i.e. “track discipline”), but rather stick to permanently placed roads/tracks – especially during the detailed field-based exploration phase. This would minimise the effect on localised potentially sensitive habitats in the area.</li> <li>5. Stick to speed limits of maximum 30km/h as this would result in fewer faunal road mortalities. Speed humps could also be used to ensure the speed limit.</li> <li>6. Remove (e.g. capture) unique fauna and sensitive fauna before commencing with the development activities and relocate to a less sensitive/disturbed site if possible.</li> <li>7. Prevent and discourage the setting of snares (poaching), illegal collecting of veld foods (e.g. tortoises, etc.), indiscriminate killing of perceived dangerous species (e.g. snakes, etc.) and collecting of wood as this would diminish and negatively affect the local fauna – especially during the development phase(s).</li> <li>8. Attempt to avoid the removal of bigger trees during the development phase(s) – especially with the development of access routes – as these serve as habitat for a myriad of fauna.</li> <li>9. Prevent and discourage fires – especially during the development phase(s) – as this could easily cause runaway veld fires affecting the local fauna, but also causing problems (e.g. loss of grazing &amp; domestic stock mortalities, etc.) for the neighbouring farmers.</li> <li>10. Rehabilitation of the disturbed areas – i.e. initial development access route “scars” and associated tracks as well as temporary accommodation sites. Preferably workers should be transported in/out to the EPL area on a daily basis to avoid excess damage to the local environment (e.g. fires, wood collection, poaching, etc.). Such rehabilitation would not only confirm the company’s environmental integrity, but also show true local commitment to the environment.</li> <li>11. Implement erosion control. The area(s) towards &amp; adjacent the drainage line(s) are easily eroded and further development may exacerbate this problem. Avoid undertaking exploration activities including supporting activities such as camping within 20m of the main drainage line(s) to minimise erosion problems as well as preserving the riparian associated fauna.</li> <li>12. Conduct a thorough investigation on the fauna associated with the proposed exploration site(s).</li> <li>13. Prevent the number of domestic pets – e.g. cats &amp; dogs – accompanying the workers during the field-based exploration activities as cats decimate the local fauna and interbreed &amp; transmit diseases to the indigenous African Wildcat found in the area. Dogs often cause problems when bonding on hunting expeditions thus negatively affecting the local fauna. The indiscriminate and wanton killing of the local fauna by such pets should be avoided at all costs.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent’s Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.10: Mitigation measures to be implemented with respect to the exploration camps and exploration sites.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Promotion of conservation through preservation of flora, fauna and ecosystem around the exploration camps and exploration sites</p>	<ol style="list-style-type: none"> <li>1. Select camp sites and other temporary lay over sites with care – i.e. avoid important habitats.</li> <li>2. Use portable toilets to avoid faecal pollution around camp and exploration sites.</li> <li>3. Initiate a suitable and appropriate refuse removal policy as littering could result in certain animals becoming accustomed to humans and associated activity and result in typical problem animal scenarios – e.g. baboon, black-backed jackal, etc..</li> <li>4. Avoid and/or limit the use of lights during nocturnal exploration activities as this could influence and/or affect various nocturnal species – e.g. bats and owls, etc. Use focused lighting for least effect.</li> <li>5. Prevent the killing of species viewed as dangerous – e.g. various snakes – when on site.</li> <li>6. Prevent the setting of snares for ungulates (i.e. poaching) or collection of veld foods (e.g. tortoises) and unique plants (e.g. various Aloe and Lithop) or any form of illegal hunting activities.</li> <li>7. Avoid introducing dogs and cats as pets to camp sites as these can cause significant mortalities to local fauna (cats) and even stock losses (dogs).</li> <li>8. Remove and relocate slow moving vertebrate fauna (e.g. tortoises, chameleon, snakes, etc.) to suitable habitat elsewhere on property.</li> <li>9. Avoid the removal and/or damaging of protected flora potentially occurring in the general area – e.g. various Aloe, Commiphora and Lithop species.</li> <li>10. Avoid introducing ornamental plants, especially potential invasive alien species, as part of the landscaping of the camp site, etc., but rather use localised indigenous species, should landscaping be attempted, which would also require less maintenance (e.g. water).</li> <li>11. Remove all invasive alien species on site, especially Prosopis sp., which is already becoming a major ecological problem along various water courses throughout Central Namibia. This would not only indicate environmental commitment, but actively contribute to a better landscape.</li> <li>12. Inform contractors/workers regarding the above mentioned issues prior to exploration activities and monitor for compliance thereof throughout.</li> <li>13. Rehabilitate all areas disturbed by the exploration activities – i.e. camp sites, exploration sites, etc..</li> <li>14. Implement a policy of replacing 2 tree species (preferably the same species) for every 1 protected tree species having to be removed (if necessary).</li> <li>15. Although fires are not expected to be a major issue in the general area due to the overall lack of grass cover, some years it may be necessary to consider fire prevention. Ensure that adequate firefighting equipment (e.g. fire beaters, extinguishers, etc.) is available at camp sites and clear kitchen areas to avoid accidental fires.</li> <li>16. Employ an independent environmental auditor to ensure compliance, especially of the rehabilitation of all the affected areas.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.11: Mitigation measures for surface and groundwater protection as well as general water usage.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Effective management / protection of surface and groundwater resources and general water resources usage</p>	<ol style="list-style-type: none"> <li>1. Always use as little water as possible. Reduce, reuse and re-cycle water where possible.</li> <li>2. All leaking pipes / taps must be repaired immediately they are noticed.</li> <li>3. Never leave taps running. Close taps after you have finished using them.</li> <li>4. Never allow any hazardous substance to soak into the soil.</li> <li>5. Immediately tell your Contractor or Environmental Control Officer / Site Manager when you spill, or notice any hazardous substance being spilled during the field-based exploration activities or around the camp site.</li> <li>6. Report to your Contractor or Environmental Control Officer / Site Manager when you notice any container, which may hold a hazardous substance, overflow, leak or drip.</li> <li>7. Immediately report to your Contractor or Environmental Control Officer / Site Manager when you notice overflowing problems or unhygienic conditions at the ablution facilities.</li> <li>8. No washing of vehicles, equipment and machinery, containers and other surfaces.</li> <li>9. Limit the operation to a specific site and avoid sensitive areas and in particular the Ephemeral River Channel. This would sacrifice the actual area for other adjacent Ephemeral River areas and thus minimise any likely negative effect on water resources.</li> <li>10. Disposal of wastewater into any public stream is prohibited.</li> <li>11. The Proponent must obtain permission of the land owners before utilising any water resources or any associated infrastructure.</li> <li>12. If there is a need to drilling a water borehole to support the exploration programme the proponent (Proponent) must obtain permission from the land owner and Department of Water Affairs in the Ministry of Agriculture and Forestry. In an event of discovery of economic minerals resources, the sources of water supply for the mining related operations will be supplied by NamWater.</li> <li>13. If there are any further (larger scale) exploration/drilling activities and/or mining activities to follow from the initial planned drill holes, groundwater monitoring must be implemented to include water level monitoring and also water sampling on a bi-annual basis. In order to have greater transparency on the water monitoring activities, the affected landowners / farmers must be given full access to the results of the water monitoring analyses.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.12: Mitigation measures to minimise negative socioeconomic impacts.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Effective management of socioeconomic benefits of the proposed / ongoing project activities</p>	<ol style="list-style-type: none"> <li>1. The employment of local residents and local companies should be a priority. To ensure that potential employees are from the area, they need submit proof of having lived in the area for a minimum of 5 years.</li> <li>2. Providing information such as the number and types of jobs available, availability of accommodation facilities and rental costs and living expenses, could make potential job seekers wary of moving to the area.</li> <li>3. Addressing unrealistic expectations about large numbers of jobs would be created.</li> <li>4. Exploration camp if required should be established in close consultation with the land owners.</li> <li>5. Exploration camp should consider provision of basic services.</li> <li>6. When employees contracts are terminated or not renewed, contractors should transport the employees out of the area to their hometowns within two days of their contracts coming to an end.</li> <li>7. Tender documents could stipulate that contractors have HIV/Aids workplace policies and programmes in place and proof of implementation should be submitted with invoicing.</li> <li>8. Develop strategies in coordination with local health officers and NGO's to protect the local communities, especially young girls.</li> <li>9. Contract companies could submit a code of conduct, stipulating disciplinary actions where employees are guilty of criminal activities in and around the vicinity of the EPL. Disciplinary actions should be in accordance with Namibian legislation.</li> <li>10. Contract companies could implement a no-tolerance policy regarding the use of alcohol and workers should submit to a breathalyser test upon reporting for duty daily.</li> <li>11. Request that the Roads Authority erect warning signs of heavy exploration vehicles on affected public roads.</li> <li>12. Ensure that drivers adhere to speed limits and that speed limits are strictly enforced.</li> <li>13. Ensure that vehicles are road worthy and drivers are qualified.</li> <li>14. Train drivers in potential safety issues.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.13: Mitigation measures to minimise health and safety impacts.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Promotion of health and safe working environment in line with national Labour Laws</p>	<ol style="list-style-type: none"> <li>1. Physical hazards: Follow national and international regulatory and guidelines provisions, use of correct Personal Proactive Clothing at all times, training programme, as well as the implementation of a fall protection program in accordance with the Labour Act.</li> <li>2. Some of the public access management measures that may be considered in an event of vandalism occurring are: <ul style="list-style-type: none"> <li>• All exploration equipment must be in good working condition and services accordingly.</li> <li>• Control access to the exploration site through using gates on the access road(s) if required.</li> <li>• The entire site, must be fenced off. the type of fencing to be used would, however, be dependent on the impact on the visual resources and/or cost. and.</li> <li>• Notice or information boards relating to public safety hazards and emergency contact details to be put up at the gate(s) to the exploration area.</li> </ul> </li> <li>3. There is a comprehensive First Aid Kit on site and that suitable anti-histamine for bee stings / snake bites should be available.</li> <li>4. Rubber gloves are used in case of an accident to reduce the risk of contracting HIV/AIDS.</li> <li>5. All individuals have received instructions concerning the dangers of dehydration or hyperthermia. Encourage all to drink plenty of clean water not directly from the surface water bodies.</li> <li>6. No person under the influence of alcohol or drugs is allowed to work on site.</li> <li>7. The Exploration Manager ensures compliance with the requirements of the relevant Namibian Labour, Mining and Health and Safety Regulations.</li> <li>8. Dangerous or protected / sensitive areas are clearly marked and access to these areas is controlled or restricted.</li> <li>9. Due care must be taken when driving any vehicles on any roads particularly the gravel roads. ALL Drivers must drive with their headlights switched on when travelling on the gravel roads (day and night).</li> <li>10. Persons driving a vehicle must be in possession of a valid driver's license</li> <li>11. Awareness on HIV/AIDS among workers is raised</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.14: Mitigation measures to minimise visual impacts.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Preserve the landscape character in the development of supporting infrastructure and choice of visual screening</p>	<ol style="list-style-type: none"> <li>1. Consider the landscape character and the visual impacts of the exploration area including camp site from all relevant viewing angles, particularly from public roads.</li> <li>2. Use vegetation screening where applicable. Do not cut down vegetation unnecessary around the site and use it for site screening.</li> <li>3. Avoid the use of very high fencing.</li> <li>4. Minimise access roads and no off-road that could result in land scarring is allowed.</li> <li>5. Minimise the presence of secondary structures: remove inoperative support structures.</li> <li>6. Remove all infrastructure and reclaim, or rehabilitate the project site after exploration activities are completed.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>

Table 3.15: Mitigation measures to minimise vibration, noise and air quality.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Promote of effective management of vehicle movement, drilling and blasting operations and use of Personal Protective Equipment (PPE) in mitigating air quality and vibrations impacts in line with national laws</p>	<ol style="list-style-type: none"> <li>1. Limit vehicle movements and adhere to the speed of 60 km/h.</li> <li>2. Vehicles and all equipment must be properly serviced to minimise noise pollution.</li> <li>3. Use of Personal Protective Equipment (PPE) to minimise Occupational Health Safety impacts dues to noise pollution around the site.</li> <li>4. National or international acoustic design standards must be followed.</li> <li>5. Drilling and blasting operations can major sources of vibration, noise and dust and where required the following mitigation measure shall be implemented. <ul style="list-style-type: none"> <li>• Drilling and blasting operations shall only be done by a qualified person who must at all times adhere to the required blasting protocol.</li> <li>• Prior warning shall be given to all persons, neighbor and visitors before the blasting takes place.</li> <li>• Careful planning and timing of the blast program to minimise the size of the charge.</li> <li>• Where practicable, use of explosive products with lower detonation velocities, but noting that this would require more explosives to achieve the same blast result.</li> <li>• Use of detonating caps with built-in time delays, as this effectively reduces each detonation into a series of small explosions.</li> <li>• Use of a procedure ("decking the charge") which subdivides the charge in one blast hole into a series of smaller explosions, with drill patterns restricted to a minimum separation from any other loaded hole.</li> <li>• Over-drilling the holes to ensure fracturing of the rock.</li> <li>• Staggering the detonation for each blast hole in order to spread the explosive's total overpressure over time.</li> <li>• Matching, to the extent possible, the energy needed in the "work effort" of the borehole to the rock mass to minimise excess energy vented into the receiving environment.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>



Table 3.16: Mitigation measures for waste (solid and liquid) management.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Promotion of effective waste (solid and liquid) management through the adoption of sound and hierarchical approach to waste management, which would include waste minimisation, re-use, recovery, recycling, treatment, and proper disposal.</p>	<ol style="list-style-type: none"> <li>1. Burial of waste on anywhere within the EPL area is not allowed and all generated solid waste must be disposed at the at an approved municipal waste disposal site.</li> <li>2. Toilet and ablution facilities must be provided on site and should not be located close to Ephemeral Rivers or visible discontinuities (fractures, joints or faults).</li> <li>3. Provide site information on the difference between the two main types of waste, namely: <ul style="list-style-type: none"> <li>• General Waste. and</li> <li>• Hazardous Waste.</li> </ul> </li> <li>4. Sealed containers, bins, drums or bags for the different types of wastes must be provided. Never dispose of hazardous waste in the bins or skips intended for general waste.</li> <li>5. All solid and liquid wastes generated from the proposed / ongoing project activities shall be reduced, reused, or recycled to the maximum extent practicable.</li> <li>6. Trash may not be burned or buried, except at approved sites under controlled conditions in accordance with the municipal regulations.</li> <li>7. Never overfill any waste container, drum, bin or bag. Inform your Contractor or the Environmental Control Officer / Site Manager if the containers, drums, bins or skips are nearly full.</li> <li>8. Never litter or throwaway any waste on the site, in the field or along any road. No illegal dumping.</li> <li>9. Littering is prohibited.</li> <li>10. Latrines and French drains built &gt;100m from watercourses or pans to avoid pollution of primary and secondary aquifers.</li> <li>11. Chemical toilets or suitable waste water management system shall be provided on site and around the camp as may be required.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Regional reconnaissance field-based mapping and sampling activities.</li> <li>(ii) Initial local field-based mapping and sampling activities.</li> <li>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</li> <li>(iv) Prefeasibility and feasibility studies.</li> </ol>	<ol style="list-style-type: none"> <li>(i) Proponent's Representative (PR)</li> <li>(ii) Project Manager (PM)</li> <li>(iii) Project HSE</li> <li>(iv) Contractor</li> <li>(v) Subcontractors</li> </ol>	<p>Proponent met the provisions of the EMP.</p>



Table 3.17: Rehabilitation plan.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>Contributions toward environmental preservation and sustainability through rehabilitation of disturbed areas such as exploration sites and remove all unwanted part of the fixtures and restore the sites to close an approximation of the pristine state as is technically, financially and reasonably possible.</p>	<p>1. The following rehabilitation actions are practiced:</p> <ul style="list-style-type: none"> <li>• Small samples are preferably removed from site to avoid additional scars in the landscape.</li> <li>• Litter from the site has been taken to the appropriate disposal site.</li> <li>• Debris, scrap metal, etc is removed before moving to a new site or closure of the mine.</li> <li>• Water tanks are dismantled and removed if not need for after use.</li> <li>• Tracks on site and the access road are rehabilitated by smoothing the 'middle mannetjie'(middle ridge between the tracks) and raking the surface.</li> </ul> <p>2. The following should be undertaken at all disturbed areas that require further rehabilitation:</p> <ul style="list-style-type: none"> <li>• if applicable the stockpiled subsoil to be replaced (spread) and/or the site is neatly contoured to establish effective wind supported landscape patterns.</li> <li>• Replace the stored topsoil seed bank layer.</li> <li>• Five (5) years after rehabilitation the sites are not visible from 500 m away.</li> </ul>	<p>(i) Regional reconnaissance field-based mapping and sampling activities.</p> <p>(ii) Initial local field-based mapping and sampling activities.</p> <p>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</p> <p>(iv) Prefeasibility and feasibility studies.</p>	<p>(i) Proponent's Representative (PR)</p> <p>(ii) Project Manager (PM)</p> <p>(iii) Project HSE</p> <p>(iv) Contractor</p> <p>(v) Subcontractors</p>	<p>Proponent met the provisions of the EMP.</p>

Table 3.18: Environmental data collection.

OBJECTIVES	MITIGATION MEASURES	SCHEDULE	RESPONSIBILITY	MONITORING RESULTS
<p>1. Collect data that will add value to environmental monitoring and reporting to the regulators</p> <p>2. Collect data that will add to the general scientific and geographic knowledge of the environment in which the exploration process takes place.</p> <p>3. Acknowledged that the required skills and knowledge to collect all the suggested data may not be available within the mine /exploration team, however, as much data as is practical should be collected.</p>	<p>1. Environmental Monitoring Report Compiled and submitted by the Environmental Coordinator to the regulators</p> <p>2. The following types of information should be gathered:</p> <ul style="list-style-type: none"> <li>• Fauna. What tracks or signs of animal activity have been seen? (photographs and GPS recording) What animals, birds etc were identified? Alternatively provide a description and/ or photo if unidentified.</li> <li>• Unusual weather conditions, e.g. records of the prevailing wind direction and the direction from which storm events come. Was there fog or rain, frost overnight or intense heat? Preferably have a thermometer and rain gauge on site.</li> <li>• Vegetation. Record trees, shrubs, grass, etc. that are found in the vicinity along each of the profiles. Some plants do only occur after rainfall and might not have been seen for decades.</li> <li>• Any archaeological, cultural or historical sites that may be found. GPS coordinates, photograph and plot the position on a 1: 50 000 map.</li> <li>• other including surface water, spring, large scale geological features etc</li> </ul>	<p>(i) Regional reconnaissance field-based mapping and sampling activities.</p> <p>(ii) Initial local field-based mapping and sampling activities.</p> <p>(iii) Detailed local field-based activities such as local geological mapping, geochemical mapping and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.</p> <p>(iv) Prefeasibility and feasibility studies.</p>	<p>(i) Proponent's Representative (PR)</p> <p>(ii) Project Manager (PM)</p> <p>(iii) Project HSE</p> <p>(iv) Contractor</p> <p>(v) Subcontractors</p>	<p>Proponent met the provisions of the EMP.</p>

## 4. CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Conclusions

Mitten Minerals Exploration (Pty) Ltd (**the Proponent**) is current undertaking exploration activities in the Exclusive Prospecting Licence (EPL) No. 5678. As part of the implementation of the EMP, the following key issues were also addressed:

- (i) The proponent negotiated Access Agreements with the land owner/s as required.
- (ii) The Proponent adhered to all the provisions of the EMP and conditions of the Access Agreement entered between the proponent and the land owner/s in line with all applicable national regulations, and.
- (iii) Before entering any private property such as a private farm, the proponent gave advanced notices and always obtained permission from the land owners to access the license area.
- (iv) The proponent always implemented the precautionary measures / approach to environmental management.
- (v) The proponent provided all the necessary support including human and financial resources, for the implementation of the proposed / ongoing mitigations and effective environmental management.
- (vi) Implemented internal and external (contracted Risk-Based Solutions) monitoring of the actions and management strategies developed during the mineral exploration process, and.
- (vii) This final Environmental Monitoring report has been prepared with the support of the external specialist consultants and will be submitted to the regulators as part of the required environmental monitoring process.

Based on the results of the overall environmental performance monitoring undertaken for the period April 2018-February 2021 under review, no diversions from the environmental commitments as outlined in the Environmental Policy of the Proponent (Mitten Minerals Exploration (Pty) Ltd), Environmental Management Plan (EMP) and the Environmental Clearance Certificate (ECC) have been observed or recorded (Annex 1). The ongoing exploration activities are being undertaken with the highest Health, Safety and Environment (HSE) commitments.

# Annex 1

## *Questionnaire Annex to the Environmental Monitoring Report*

# **ENVIRONMENTAL REPORT (ER)**

## **(Prospecting Companies)**

### **INSTRUCTIONS:**

1. An Environmental Report shall be submitted to the Ministry of Environment , Forestry and Tourism (MEFT).

### **Period April 2018-February 2021**

2. This form shall be the minimum reporting format. Prospecting Companies are expected to attach a map of their prospecting area to this report. Prospecting Companies are welcome to attach any other information they like, such as copies of new agreements, letters of explanation, aerial photographs, or anything else of interest.
3. The map shall be used to indicate the following:
  - \* areas where prospecting has taken place,
  - \* roads or tracks made and/or used,
  - \* houses and other infrastructure erected,
  - \* excavations or other scars which have been rehabilitated,
  - \* conflict areas, etc....
4. It is recommended (but not compulsory) that Prospecting Companies attach photographs to their report which visually illustrate the activities described in their report.
5. Failure to submit an Environmental Report shall constitute a breach of the Environmental Contract, which could result in steps taken against the Prospecting Company.
6. All information contained in the Environmental Report shall be treated as confidential.
7. The Prospecting Company shall ensure that all the information recorded in the Environmental Report is, to their best knowledge, accurate and correct.

### **Completed Environmental Reports should be sent to:**

**Environmental Commissioner  
Department of Environmental Affairs (DEA)  
Ministry of Environment and Tourism  
Private Bag 13306  
Windhoek**





**F. INFRASTRUCTURAL DEVELOPMENT**

*Infrastructural Developments means any offices, houses, sheds, cement slabs, or other buildings or foundations for buildings. It also includes storage tanks (for water, fuel, or other substances), temporary housing such as mobile homes & caravans, prefab units and tented camps. Please report on new construction or additions to buildings you reported on, in your previous Environmental Report.*

Was any NEW infrastructure established during this period?      yes  No

If "yes" above, is this infrastructure:      Permanent  Temporary  A combination

Describe infrastructure by ticking boxes:      Offices       Housing       Sheds   
    Prefab structure       Garages       Storage tanks   
    Cement slabs       Foundations       Other

If "other", please specify: .....

**G. BOREHOLES, SAMPLE HOLES OR OTHER DRILLING**

*This category includes holes drilled for water, for taking mineral or other samples, for setting explosives, for testing mineral quality, or any other purpose.*

Were any holes drilled during this period?      yes  no

If "yes", for which purpose were they drilled?      Water  depth  Quantity   
    Sampling  depth  Quantity   
    Explosives  depth  Quantity

Other  (specify) ..... depth  Quantity

**H. WATER**

Your estimated monthly water consumption during this period was: None

Water was obtained from:      River       Borehole       Dam       Water Affairs       Other

Please estimate the percentage of water used for the following activities during this period:

Human consumption	10 %	
Toilets	<input type="checkbox"/> <input type="checkbox"/> %	
Prospecting activities	90 %	
Washing vehicles & equipment	<input type="checkbox"/> <input type="checkbox"/> %	
Dust control	<input type="checkbox"/> <input type="checkbox"/> %	
Building activities	<input type="checkbox"/> <input type="checkbox"/> %	
Gardens	<input type="checkbox"/> <input type="checkbox"/> %	
Recreation	<input type="checkbox"/> <input type="checkbox"/> %	
Other (specify)	<input type="checkbox"/> <input type="checkbox"/> %	

Were there any accidents which caused a loss of water?      **No**

If "yes", please give details  
 .....



**I. PROTECTION OF FAUNA AND FLORA**

Please answer the following questions by ticking the appropriate boxes:

Question:	Yes	No	Unsure
Were any mammals, birds, reptiles or fish killed or wounded (purposefully or accidentally) in the prospecting site or area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Were any plants (excluding grasses) picked, damaged or removed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Was there any wood collecting in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**J. RELATIONS WITH NEIGHBOURS, OFFICIALS AND/OR THE GENERAL PUBLIC**

Were there any conflicts with neighbours, land-owners, Government Officials or the public during this period? Yes  No

If "yes" above, what was the nature of these conflicts? (tick boxes to provide answers)

- People entered the prospecting area without permission or prior arrangement
- Complaints about reduced access to water or other resources
- Complaints about danger posed to livestock or wildlife
- Allegations about stock-theft or poaching
- Complaints about vehicle or equipment movement on access roads / tracks
- Complaints about litter or other types of pollution (eg. Noise, dust, etc.)
- Complaints about the activities / actions of company staff
- Allegations that the Company was not adhering to contracts / agreements
- Allegations that the Company damaged property or installations
- Allegations that gates were left open or unlocked
- Other (specify).....

If conflicts arose, indicate how these were resolved ? (tick boxes)

- Verbal agreement after discussions.....
- Written agreement by special contract.....
- Instructions to company staff to avoid conflicts.....
- Company rectified its mistakes and undertook to avoid future wrong-doing....
- Court action or other third party arbitration.....
- Other (specify) .....
- The conflicts remain unsolved.....

Any other comments or information:

The ongoing exploration activities are being undertaken with the highest Health, Safety and Environment (HSE) commitments

**I declare that the information provided in this Environmental Report is, to the best of my knowledge, accurate and correct.**



**Dr Sindila Mwiya: External Environmental Consultant**