

# DRAFT ENVIRONMENTAL MANAGEMENT PLAN

For the proposed minerals exploration for Base and rare metals, industrial minerals, nuclear fuel minerals, and precious metals within EPL 9056

**|| Karas Region**

**Date:** February 2024

**Proponent:** KoBold Metals Namibia (Pty) Ltd

**APP: 002666**



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**DOCUMENT APPROVAL**

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# 1. INTRODUCTION

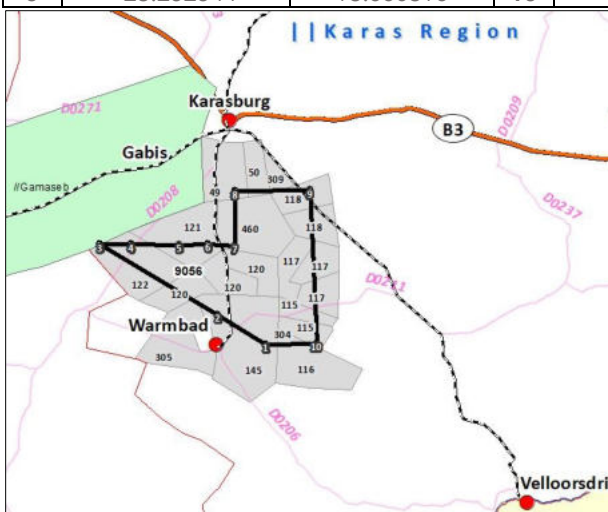
Alliance Environmental Consultancy CC (AEC) (herein referred to as the consultant) has been appointed by KoBold Metals Namibia (Pty) Ltd (herein referred to as the proponent) to act on their behalf in applying for an Environmental Clearance Certificate (ECC) for the proposed minerals exploration for base and rare metals, industrial minerals, nuclear fuel minerals, and precious metals within EPL9056. The project area is located within the Karasburg East constituency covering a total area of approximately 67192.5827 Hectares, North of the Warmbad settlement, | | Karas Region. The EPL is accessible via several tracks that branch through the EPL from the B1 and B3 national highways, the C10 trunk road, and the D208, D210, and D211 district roads from Karasburg, Warmbad and Velloorsdrift. The major towns/settlements in and around the project area include Karasburg, Warmbad, Ariamsvlei and Velloorsdrift. **FIGURE 1 & FIGURE 2** provides a detailed overview layout of the project area in the | | Karas Region and as represented on the Ministry of Mines and Energy (MME) licences Cadastre <https://maps.landfolio.com/Namibia/>.

The proponent applied for the EPL area through the MME on 12<sup>th</sup> of October 2022. The proponent was granted a notice of preparedness to grant the EPL on the 09<sup>th</sup> of October 2023. The physical EPL is pending approval as it is subject to an ECC by MEFT which is the reason for conducting this environmental impact assessment and other conditions to be met by the proponent.

The corner coordinates of the EPL are provided in the table below.

TABLE 1 - CORNER COORDINATES FOR THE EPL 9056

	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE
1	-28.4421	18.825334	6	-28.252248	18.715607
2	-28.385167	18.733408	7	-28.254619	18.767508
3	-28.252414	18.511192	8	-28.151606	18.766281
4	-28.252418	18.570393	9	-28.1499	18.909594
5	-28.252544	18.660816	10	-28.439672	18.922443



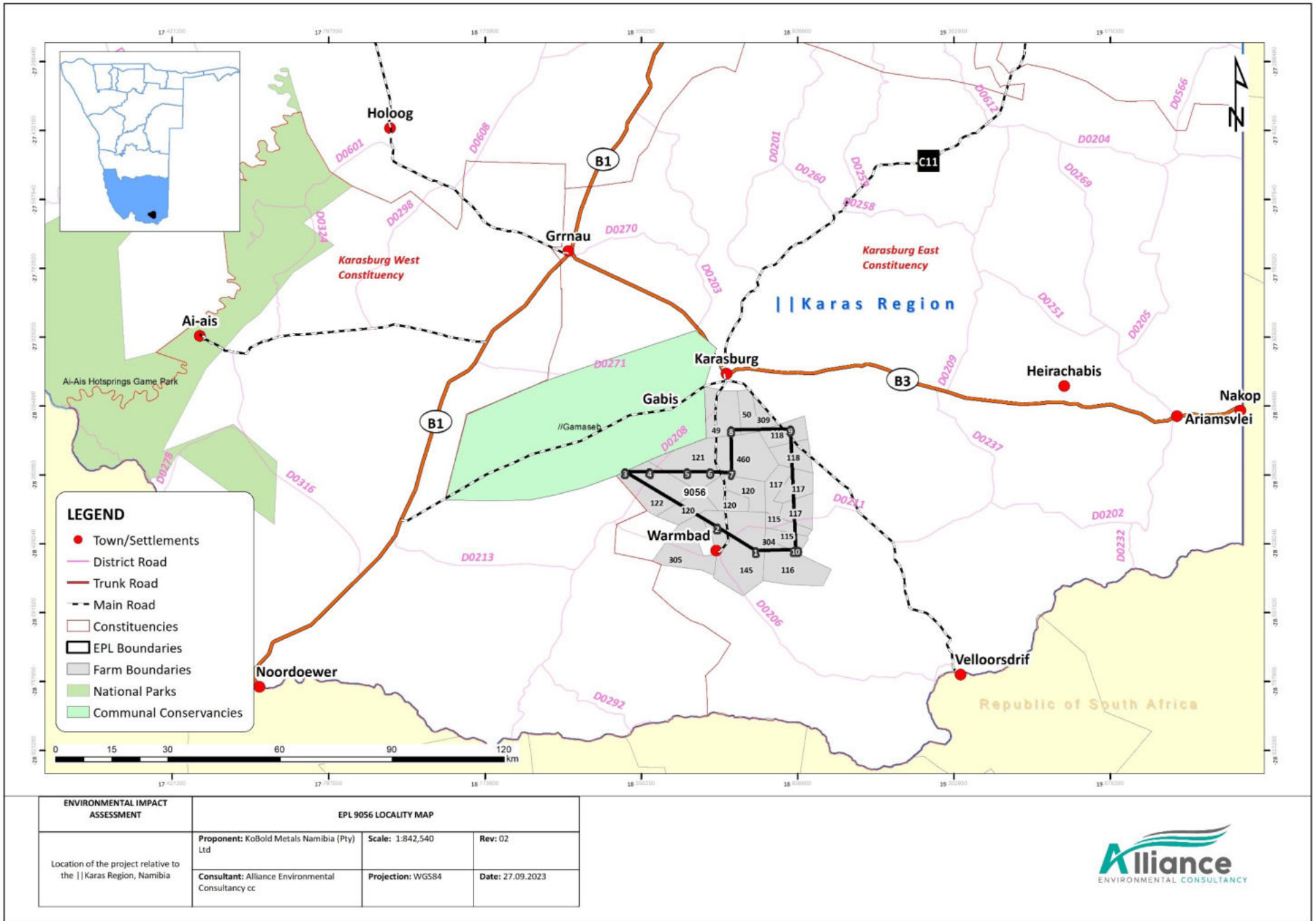


FIGURE 1 – REGIONAL LOCATION OF THE EPL AND SURROUNDING INFRASTRUCTURE.

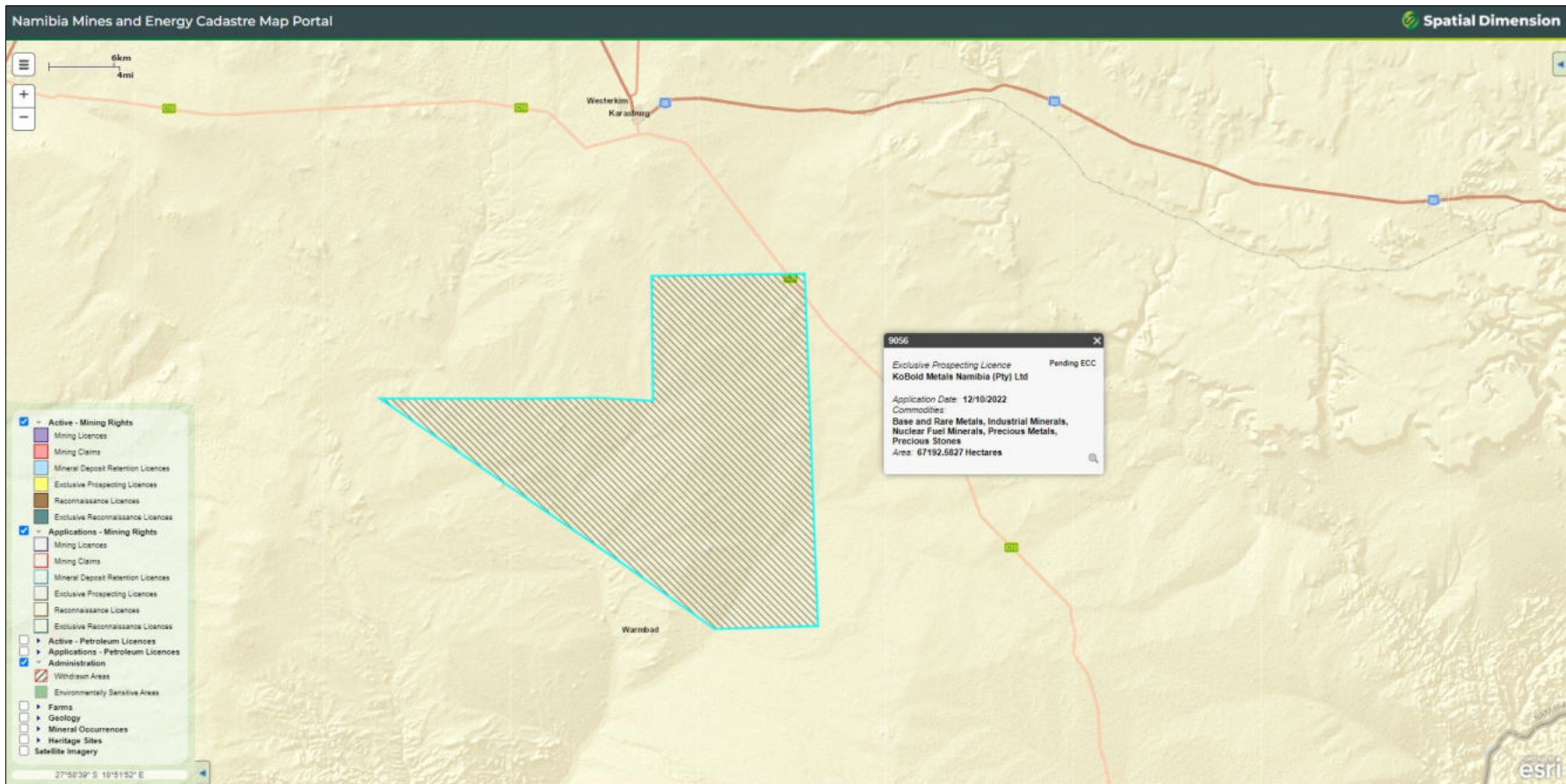


FIGURE 2 - LOCALITY DISPLAY ON THE MINING CADASTRE PORTAL (MME,2023) [HTTPS://PORTALS.LANDFOLIO.COM/NAMIBIA](https://portals.landfolio.com/namibia)

## **1.1. PURPOSE OF THE DOCUMENT**

Alliance Environmental Consultancy CC (AEC) has prepared this document as part of the Environmental Scoping Assessment for the proposed prospecting activities. The assessment was conducted in terms of the Environmental Management Act, 2007 (Act No 7 of 2007). This Environmental Management Plan is a live document that has been prepared based on the environmental impacts identified in the Environmental Scoping Assessment (ESA) and should be read in conjunction with the ESA Report.

The aim of this document is to provide management measures to address the environmental impacts that have been identified and to give possible mitigation measures/recommendations. It is essential for personnel involved to fully be aware of the possible environmental issues and the means to avoid or minimize the potential impacts of activities on site.

The proponent fully understands the legal and policy requirements as a holder of the EPL. Impacts identified in the EIA form the basis of a set of environmental specifications that will be implemented on-site. These environmental specifications act as an agreement between the proponent and the Ministry of Environment, Forestry, and Tourism (MEFT).

## **1.2. LIMITATIONS OF THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

AEC assumes that all information and technical data for the Project relevant to the scope of the environmental scoping procedure provided by the Proponent, specialists, and collected during the public participation process and through visual observation are true and correct, and that all necessary information has been disclosed.

This report is compiled as a part of the scoping assessment, and in addition specialist studies were done as part of this assessment i.e., Heritage/Archeological specialist study and a biodiversity specialist study. This is because the consultants believed that the magnitude of the proposed activities and the existence of similar projects in the vicinity can be used to sufficiently address these potential impacts from the proposed project under the impact assessment section of the ESA and mitigation measures provided accordingly. Reviewed literature, and professional experience from similar studies in the Region and elsewhere were also considered when addressing these effects/impacts.

The project specific information used in this document is as provided by the Proponent, specialists, consultants experience, and relevant literature reviewed/research. This report has been compiled on assumption that there will be no substantial changes to the proposed project activities or to the affected biophysical and social environment between the time of compiling this document and execution of the project, that could potentially influence the findings of this document. Where project



activities alter, or new impacts are identified this EMP should be updated to cater for the new impacts and mitigation measures should be provided herein.

### **1.3. PROJECT ACTIVITIES**

The proponent wishes to conduct an exploration program on EPL 9056 for base & rare metals, industrial minerals, nuclear fuel minerals, and precious metals. Once granted by MME, the licence will be valid for three years with possible renewal after this period. The commencement of the project is planned as soon as the environmental clearance certificate and physical EPL licence has been issued. The exploration program will be carried out as outlined in more detail below:

#### **PLANNING PHASE ACTIVITIES**

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

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

- Ministry of Mines and Energy (MME)
- Ministry of Environment Forestry & Tourism (MEFT, this application)
- | | Karas Regional Council
- Ministry of Agriculture, Water & Land Reform (MAWLR)
- Affected Traditional Authorities
- National Heritage Council of Namibia (NHCN)
- Landowners/ Land custodians

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

##### *I. Accommodation*

Personnel accommodation is planned at an established campsite, or field camp, or farmhouse, with basic infrastructure as required for operations to provide accommodation for approximately 5 to 10 (depending on the labour needs). Alternatively, the workers can commute from the nearby towns/settlements or any accommodation places that may be deemed sufficient by the proponent. Any infrastructure will be erected with the permission of the land custodians in the area. The accommodation area will be demarcated to limit the movement of equipment and personnel beyond the footprint of the camp area, and also to limit the movement of animals onto the site from the surrounding area.

##### *II. Access*

Existing access roads will be predominantly utilized, and where necessary new access roads will be constructed in consultation with the landowners/custodians. Existing tracks may be upgraded to

accommodate heavy motor vehicles and operational machines at a later stage in the exploration. The selective clearing of vegetation in areas designated for prospecting will be minimal. Usually, land is cleared at areas where drilling operations will be conducted or where the camping area will be erected. When lateral expansion is required the removal of vegetation will be done in association with the Directorate of Forestry that issues the relevant permits before any trees could be fallen.

### *III. Waste management*

Solid waste will be removed off site and taken to the nearest registered dumpsite. Portable toilets may be used at work sites with prolonged activities, with a possibility of long drop toilets in some locations. Alternatively, toilets may be established when the staff resides at the working area, with septic tanks to be emptied regularly using a tanker truck which removes the sewerage and takes it to the municipal sewerage works. For a longer-term field camp arrangement, a French drain system could be devised and constructed. Noting that there is a camp site/lodge within the EPL area, should existing toilets be available and operational, these could be another option to be utilized.

## **OPERATIONAL SUPPORT SERVICES**

### *I. Water supply*

Water supply sources being considered are either.

- Ground water abstraction; and
- NamWater

The volume of water will depend on the exploration program and phase of exploration. Water needs in the initial phases of mineral exploration will be minimal for drinking and ablution facilities. If diamond drilling is required to test a target then larger volumes will be required. The proponent does not expect to use much water in the initial phase, and the needs will mostly be for camp use (drinking, cooking, ablution) and only much later in the programs for drilling. Water needs can be sourced from the nearest NamWater supply scheme or from one of the surrounding neighbors or community boreholes and trucked/piped to the exploration sites and/or accommodation.

If more water is required then -abstraction of ground water will be considered, a borehole can be sunk to augment supply volumes or an existing borehole can be utilized with the owner's permission. For this option groundwater exploration would be undertaken followed by the required permit application process with the Directorate of Water Affairs (DWA).

### *II. Power supply*

The proponent will evaluate what electrical supplies are readily available to the project. Generators may be used in remote locations for short-term work, and a small field of photovoltaic panels is also envisaged for power generation in the medium term in semi-permanent camps and during long-term work. No infrastructure development to get electricity from the national grid has been planned. All mobile equipment is diesel driven and self-propelled. Static equipment will use electricity generated by diesel generators.

### *III. Onsite fuel storage*

Fuel (diesel/petrol) storage at site will be temporary for ease of exploration activities. Approximately 200 litres of diesel will be stored in a bunded fuel tank system, conveniently placed and accessible for deliveries. This facility will be of modern construction, either double-skinned or 110% bunded to ensure spills are prevented.

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

Although unlikely, should the company need to store more than 600 litres of fuel at its exploration sites in the rural areas, storage permission will be sought from the MME.

## **PROSPECTING/OPERATIONAL PHASE ACTIVITIES**

The Primary exploration target is for nickel-copper-platinum group elements (Ni-Cu-PGEs). The mineralization model is that of disseminated to massive sulphide deposits associated with mafic to ultramafic magmatic rocks. The secondary exploration target is that of lithium bearing pegmatites. Besides quartz, feldspar and mica, lithium bearing pegmatites may also carry other valuable minerals that contain rare elements such as tantalum, niobium, tin, tungsten, cesium, rubidium, boron, fluorine, and other minerals.

The exploration team is envisioned to consist of up to fifteen (15) skilled and non-skilled workers. Initially the company may start with 2-3 exploration geologists and 2-3 field technicians. Additional support like logistics, labourers, cooks etc., will likely be needed. Employment will ramp up as needed in each phase of exploration. Laborers will be sourced from the communities nearest to the projects. Field operations may operate 10 hours a day (7am to 5pm) for up to seven days per week, or as needed. The personnel will be transported to and from the operational site by company transport.

*I. Vehicle, machinery and associated equipment*

At the initial stages of mineral exploration, the company will use 4x4 vehicles. Heavy machinery will be used from drilling stages. The number of vehicles will depend on the work program. Main equipment types to be used will include 4X4 bakkies, drill rigs (Reverse Circulation (RC) or Diamond Drill Hole (DDH)), excavators and front-end loaders, water tankers for the camp site and to support drilling operations, portable geophysical equipment, sampling equipment (bags, sieves, spades etc.). The equipment will be stored in designated areas at the exploration camp/accommodation.

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

*II. Desktop studies including geological mapping.*

High resolution data are purchased from the MME to assist in a desktop review. The data available is used to understand the geology, historical activities that were undertaken to assist and guide the planned activities. One of the initial stages in mineral exploration on the EPL would be to ground truth known mineral occurrences and targets generated from the desktop studies. Existing maps and data will be updated where relevant information has been obtained. This stage is non-invasive.

To map the sub-surface, the company may consider trenching mineralized areas. Trenches may be dug / excavated to a depth of about 5m. The material from the trenches is put on the sides of the trenches for backfilling of the trenches, once the trenches are no longer needed. If the trenches are needed for a longer period they may be fenced off, and rehabilitated once no longer in use.

*III. Geophysical survey*

The geophysical surveys include the collection of information of the substrata. Data is collected, by ground and airborne techniques, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the area. Ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by hand. Aerial geophysical surveys would be carried out using sensors mounted on low flying aircraft or unmanned drones. The airborne geophysical technique tries to measure electrical conductivity and magnetic variations of the ground using measuring instruments suspended underneath a helicopter, drone, or aircraft. During the survey, the magnetometer continuously records the total magnetic field intensity immediately beneath the magnetometer. Where necessary, permits will be obtained from Namibia Civil Aviation Authority (NCAA) to support the airborne geophysical surveys. Generally, these techniques are not intrusive in terms of impacts towards the environment.

Prior communication should be done with the relevant landowners before surveys are conducted.

#### IV. *Geochemical sampling*

This stage incorporates geochemical analyses of rocks, drill core or drill chips, and geochemical soil sampling programs. Rock grab samples are collected during ground-truthing/reconnaissance and geological mapping activities.

Soil samples are collected at depths of at least 20 - 30cm, by firstly removing the upper surface of the soil that will be filled back once a sample is collected. The samples are collected into bags of approximately 500grams to 1kg. Sampling might be carried out in up to 8 teams, each consisting of a field technician or geologist and local field assistants.

The samples collected during field campaigns are sent to an analytical laboratory (as preferred by the proponent) for geochemical trace element and whole rock analysis, mineralogy, or for heavy mineral separates, to determine if the desired mineralization is present, and in which quantities. Mineralogical studies on samples collected will run consecutively to geochemical sampling to determine host mineralogy and any complications that may arise later in the geo-metallurgy process.

#### V. *Exploration Drilling*

Exploration drilling is the process of sampling rock below surface, where it is suspected that there may be mineralization. The most commonly used drilling techniques are Reverse Circulation Drilling (RC) and Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve. The proponent will store the drill products (rock chips and/or drill core) near the exploration site, or the exploration camp, or may choose to erect a storage warehouse in proximity to the project or may rent a warehouse near the project area. Further work such as XRF analysis, core cutting and sampling, will be conducted on the drill products at the storage facility.

Drill targets are generated from the analysis of results from the combination of desktop, geological mapping, geophysical, and geochemical studies. It may be necessary to clear tracks and drill platforms/pads in preparation for drilling activities. Efforts will be made to limit or minimize the amount of clearing of trees and shrubs for drilling purposes. Should sensitive/protected species be present in the target area a trees removal and clearing permit is applied for through the Department of Forestry (DoF).

During Diamond drilling a solid core representing the lithology/rocks below ground, is extracted from depth, for examination at surface. The key technology of the diamond drill is the actual diamond bit itself. It is composed of industrial diamonds set into a soft metallic matrix. The drill produces a "core" which is logged, photographed and which can be split longitudinally for sampling purposes. Half of the split core is assayed while the other half is permanently stored for future use and reference.

RC Drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which is comprised of rock chips. RC is relatively

quick and cheap compared to Diamond Drilling. In mineral exploration RC drilling is commonly used in uncomplicated geology, or for infill drilling, at a much higher density or narrower spacing to allow extrapolations of the rock units. Usually, the drill platform/pad is approximately 15 m x 15 m, and for safety reasons during the drill process is off-limits to those not part of the exploration team.

Once the samples submitted to the laboratories are analysed and the results are received, the results are evaluated, and a decision will be taken whether to continue to the next phase of mineral exploration on the EPL. If exploration drilling results are positive the information will be used to determine follow-up drilling phases which may lead to resource drilling and modelling.

Initially, drilling would be localized on discrete targets identified through the different stages of mineral exploration, and if the results are positive then more drilling would be planned.

#### VI. *Advanced prospecting/exploration*

In the advanced stages of exploration, if an economic mineral deposit is found on the EPL, larger amounts of rock sample material may be required for performing processing trials and for metallurgical testing programs. Ground conditions and geotechnical parameters also need to be established for planning and costing purposes.

Bulk sampling for metallurgical tests and processing trials will be done to complement the material obtained during drilling. A bulk sample can be collected via trenching if weathering of the rocks is not too deep, or from drilling with larger bit sizes, or from localized blasting for bulk sampling/trial mining. The size of the sample required depends on the nature of the mineralization as observed from drilling and sampling.

#### VII. *Pre-feasibility and feasibility studies*

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

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

#### VIII. *Mining Licence Application or End of exploration Program*

If an economic mineral resource is discovered within the EPL area, the proponent will compile an application for a mining licence, and a separate and detailed environmental impact assessment study will be undertaken. The EIA will comprise of detailed site-specific specialists' studies which may include

the following impact assessments; socio-economic, hydrology and geohydrology, archaeology, air quality, traffic, biodiversity (fauna & flora), visual and soil etc.

Should there be no discovery of any economic mineralization on the EPL during the various stages of prospecting activities, the proponent can decide at any point to discontinue the activities planned on the EPL, rehabilitate the areas disturbed during their exploration, and relinquish the EPL back to the MME.

### **DECOMMISSIONING AND FINAL REHABILITATION**

The proponent should have funds available and allocated for rehabilitation. This fund should continually be available during the period of the active operation and be sufficient to cover all decommissioning activities when required. Decommissioning activities will include the removal of any temporary infrastructure, rehabilitation of roads and other linear infrastructure, drill sites and bulk sampling pits, as necessary. This is done to reduce the effects of soil erosion and to re-establish normal ecosystem functionality so as to rehabilitate the environment. Functional water boreholes (if any were drilled by the proponent) and solar panels could be donated to the local communities. Rehabilitation efforts can be expected to be low if economic mineralization is not found on the EPL, because the mineral exploration activities will have minimal impact on the environment or may be limited to non-invasive activities, if there is no justification to trench or drill test any of the targets.

## 1.4. SUMMARY OF THE RECEIVING ENVIRONMENT

The part of the | | Karas Region in which the EPL lies receives an average precipitation of 18.49mm per year. The climate is classified as subtropical desert climate, which is very hot and dry in the summer, and a cooler dry winter. The hot season lasts the longest, from September to March, with an average annual high temperature above 32°C. The study area lies within the Nama Karoo vegetation biome. The vegetation within the study site was found to be dominated by the *Commiphora* sp. (kanniedood). The vegetation in the surrounding consists of trees, shrubs, grass cover and sparse woodland occurring along riverbeds. The terrain and water availability may contribute to local vegetation distribution.

A biodiversity and heritage specialist study/site survey of the physical, chemical, and biological characteristics of the actual site and surroundings was conducted. Additionally, a number of similar EIA and biodiversity studies have previously been completed for other projects in the vicinity of the project area and will be a reference to this report. This EIA and scoping report represents a reference point for the project and for comparison of the current/known data, and any data collected in future.

According to the Atlas of Namibia, the area is regarded as a relative medium to high mammal, reptile, and intermediate amphibian diversity. The soils in this area are broadly categorized as the group of leptosols and defined by a eutric leptosols domination soil and lies in the Orange Groundwater basin. Limited volumes of ground water are present in the basement rocks of the southern | | Karas Region, since there are no productive aquifers.

High grade metamorphic rocks belonging to the Namaqua Metamorphic Complex (NMC) underlie most of the area. Parts of the NMC basement rocks are overlain by the Karoo aged flat lying sedimentary rocks of the ECCA group and the post Karoo intrusive dolerites. Some portions are overlain by the Neogene Quaternary sediments.

**FIGURE 3 & FIGURE 6** provide some baseline maps of the project area.



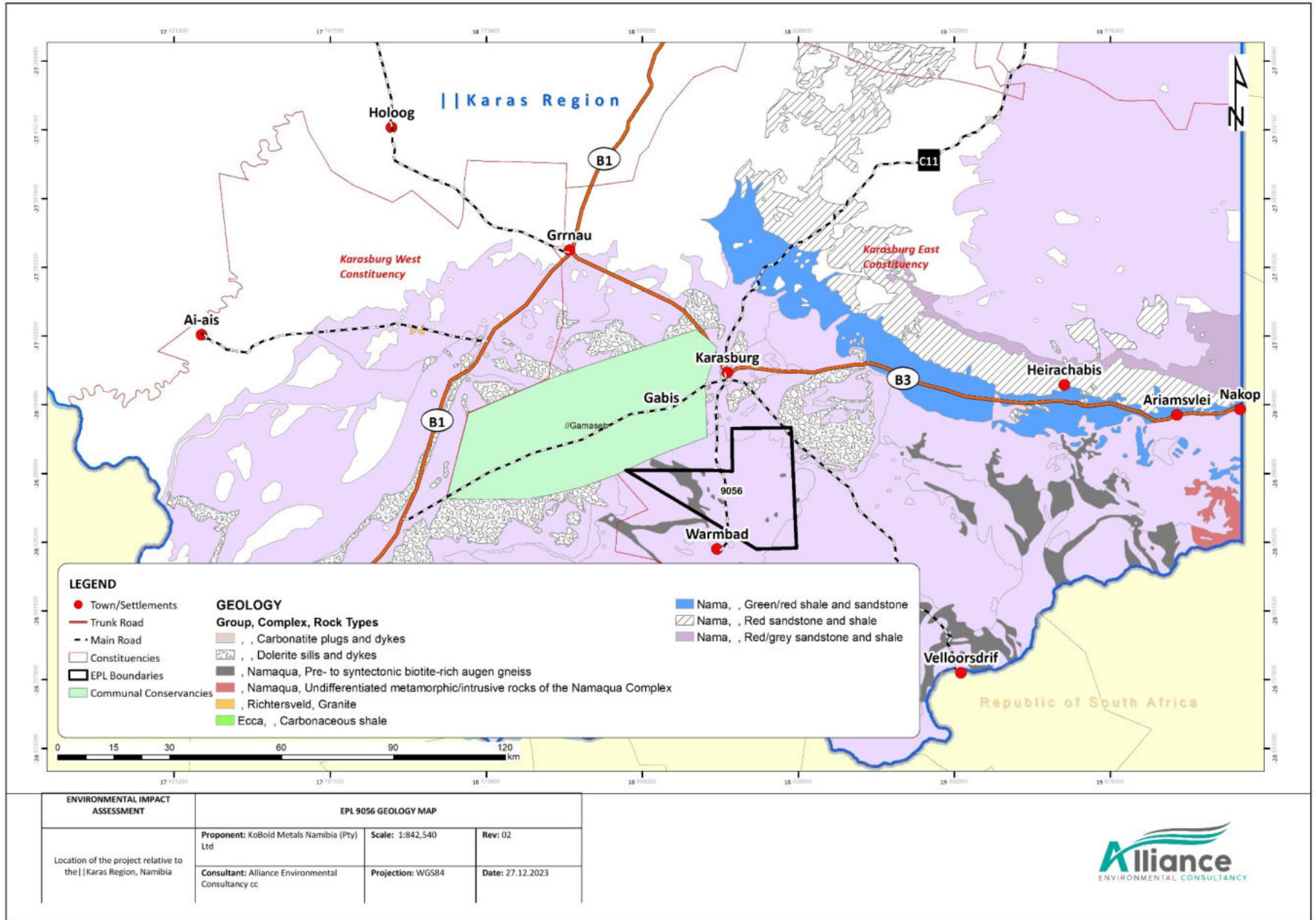


FIGURE 3 - GEOLOGY OF THE PROPOSED PROJECT AREA

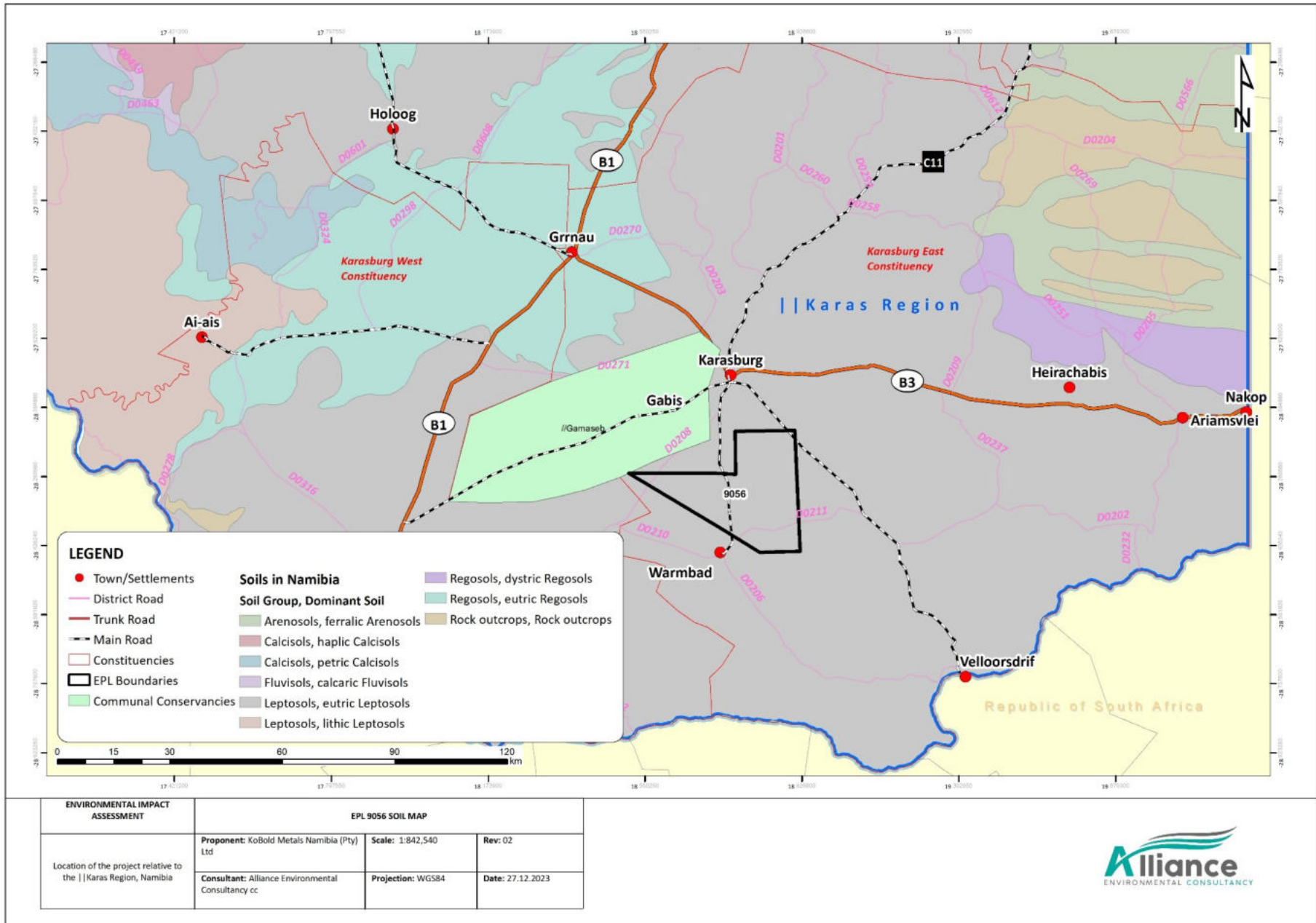


FIGURE 4 - DOMINANT SOIL TYPE SURROUNDING THE PROJECT AREA

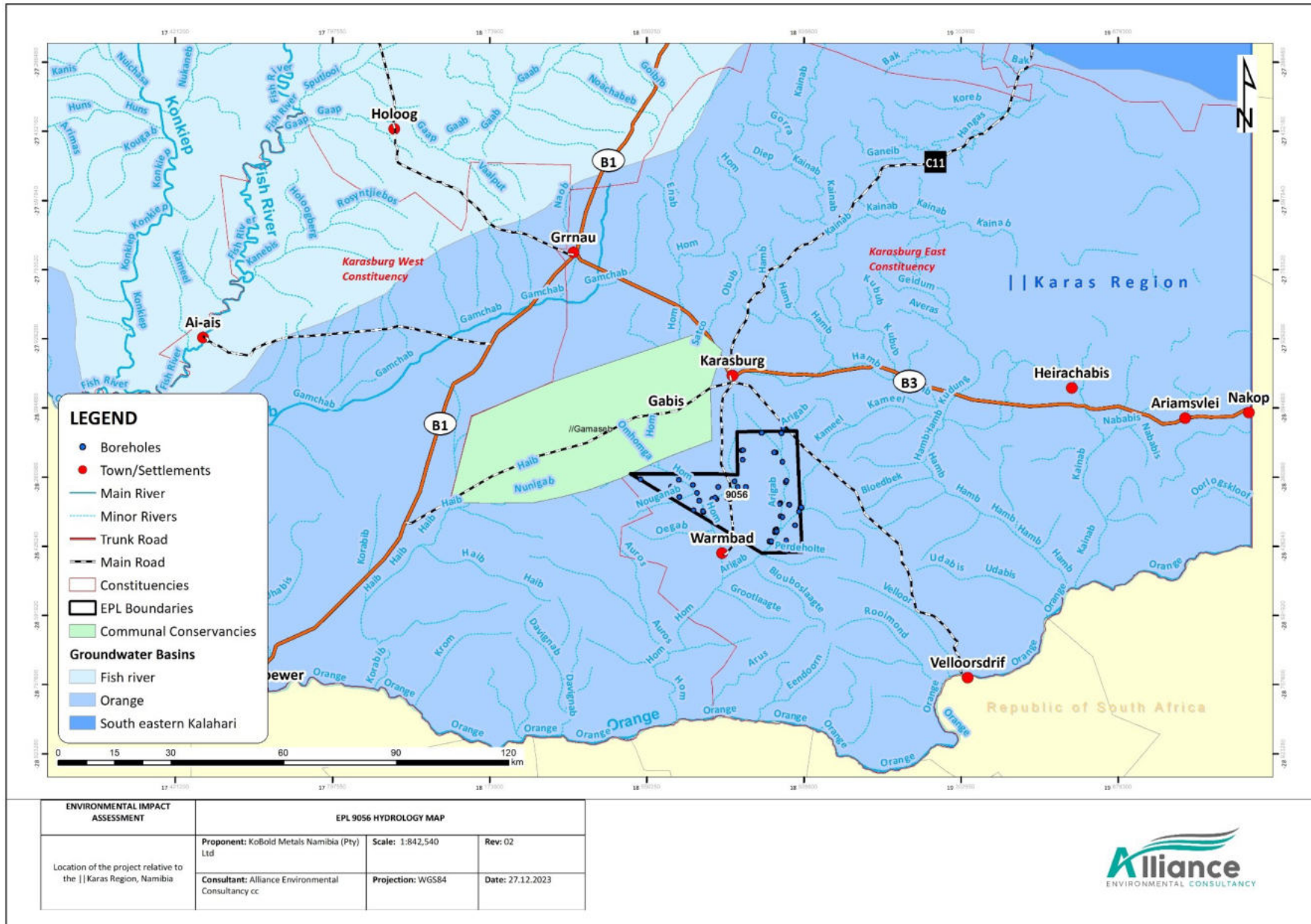


FIGURE 5 - GROUNDWATER BASINS AND HYDROLOGY OF THE PROJECT SITE

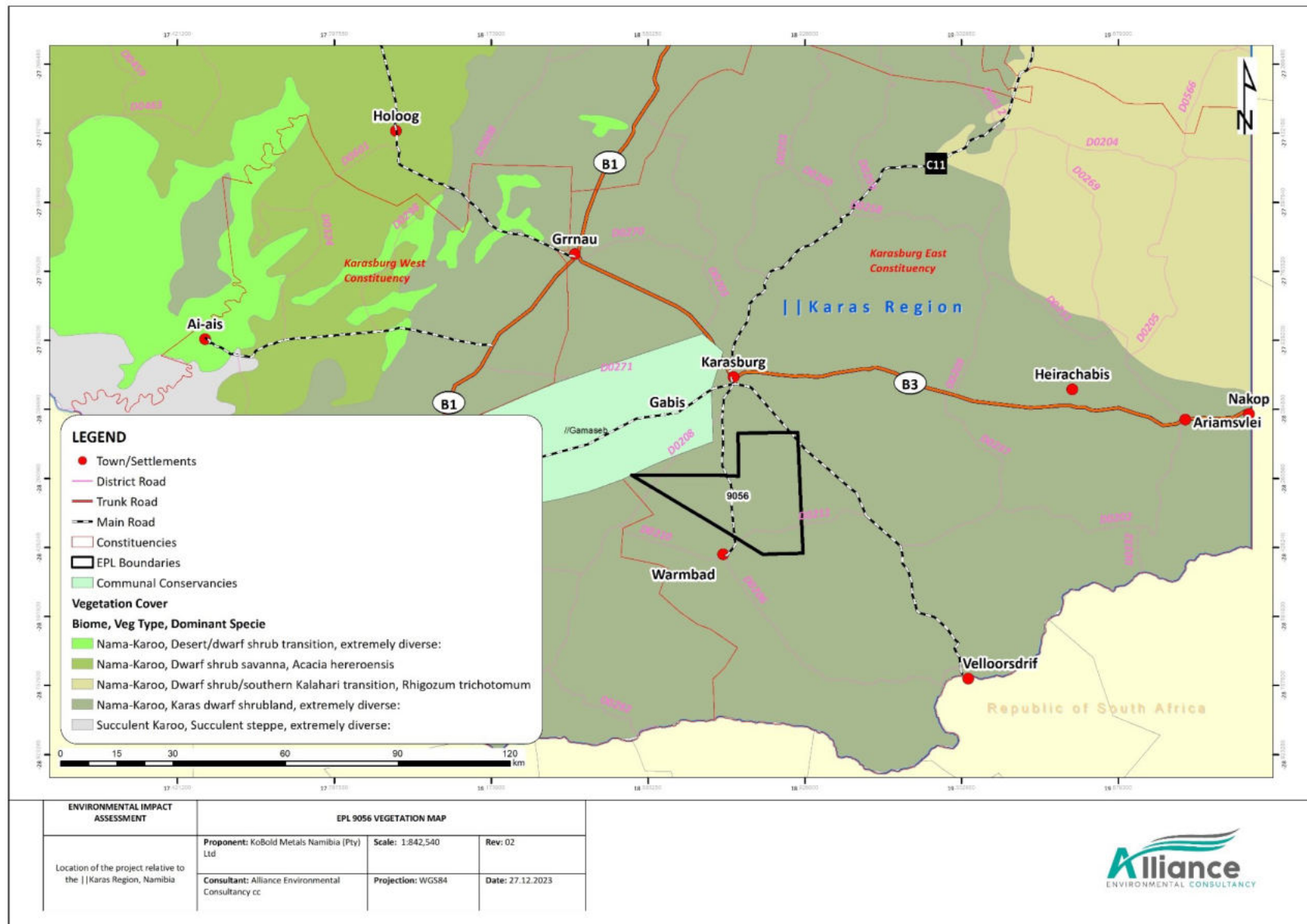


FIGURE 6 - VEGETATION OF THE PROJECT SITE

## 2. ENVIRONMENTAL MANAGEMENT PRINCIPLES

KoBold Metals will ensure that all project participants adhere to the following company goals:

- i. All employees will be obliged to undertake activities in an ecologically and socially responsible way. This applies to all consultants, workers, contractors, and subcontractors, as well as transporters, and visitors who are directly or indirectly requested by the Proponent to attend the work area as part of normal operations.
- ii. Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against dangers on site, potential hazards; and,
- iii. Promote good relationships with the surrounding communities and other stakeholders.
- iv. Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
  - a. Prevent or minimize environmental impacts;
  - b. Minimize air, water, and soil pollution; and
  - c. Conserve Biodiversity.

In order to achieve the project's goal, the following principles must be followed:

TABLE 2 - EMP PRINCIPLES

TERM	DESCRIPTION
Accountability and Commitment	The Company Senior Executives and Line managers will be held responsible and accountable for: <ol style="list-style-type: none"> <li>a. Health and safety of site personnel while on duty,</li> <li>b. Environmental impacts caused by exploration activities or by personnel engaged in the daily operations at the site.</li> </ol>
Competence	The company will ensure a competent workforce through appropriate selection, training, and awareness of all safety, health, and environmental matters.
Risk Assessment, Prevention, and Control	Identify, assess, and prioritize potential environmental risks. Prevent or minimize risks through careful planning and design, allocation of financial resources, management, and workplace procedures. Intervene promptly in the event of adverse impacts arising.

TERM	DESCRIPTION
Performance and Evaluation	Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies, and environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.
Stakeholder Consultation	Create and maintain opportunities for constructive consultations with employees, authorities, and other interested or affected parties. Seek to achieve an open exchange of information and mutual understanding in matters of common concern.
Continual Improvement	Through continual evaluation, reports, and innovation, seek to improve performance regarding social health and well-being as well as environmental management throughout the lifespan of the project.
Financial Provisions for project activities	In line with the internationally recognised "polluter pays principle" the company will make the necessary financial provision for compliance with the EMP.

### **3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT**

#### **3.1. COMMUNICATION BETWEEN PARTIES**

Emphasis will be put towards open communication between all parties involved in the project and those potentially affected by the project, in order to reach a proactive approach towards the management of potential environmental issues deriving from the project. This approach should guarantee that environmental impacts are anticipated and prevented, or minimized, rather than acting on the issues after negative impacts have already occurred.

The importance of a proactive approach cannot be over-emphasized, particularly in relation to preventing unnecessary tracks, and damage to vegetation (i.e., protected and endemic species) as these impacts cannot easily be remedied..

#### **3.2. THE EXPLORATION COMPANY**

KoBold Metals Namibia is responsible for all stages of the project and the impacts resulting from those activities. The responsible persons will be the company's appointed Environmental Control Officer (ECO), Project Manager (PM) and Managing Director (MD) to ensure that:

- The EMP and its environmental specifications are included in contractual documents, and it is required that contractors, and subcontractors, consultants etc. meet the EMP requirements;
- The company and all its subcontractors, consultants etc. comply with all Namibian legislation and policies and any relevant International Conventions;
- Compliance with the environmental specifications is enforced on a day-to-day basis;
- Environmental audits are conducted periodically by a suitably qualified Environmental Control Officer ECO to confirm that the environmental requirements are properly understood and effectively implemented;
- Sufficient budget is provided to implement those measures that have cost implications;
- The PM must commission tree surveys well in advance of planned track creations so that the necessary site visits by forestry personnel and forestry permits are acquired; and
- Open and effective communication is maintained between all parties concerning environmental management on the project.

### **3.3. SITE/PROJECT MANAGERS**

Day-to-day responsibility for environmental management will be assigned to the Site/Project Manager as well as the Environmental Control Officer (ECO) for the duration of the project to:

- Be familiar with the contents of the EMP and applicable sections of the EIA and the measures recommended therein.
- Monitor compliance with the environmental specifications daily and enforce the environmental compliance on-site by communicating the ECO's directions to all personnel involved; In the event of any infringements leading to environmental damage, personnel need to consult with the ECO and seek advice on any remedial measures to limit or rectify the damage.
- Maintain a record (photographic and written) of "before-and-after" conditions on site.
- Facilitate communication between all role players in the interests of effective environmental management.

### **3.4. ENVIRONMENTAL CONTROL OFFICER (ECO)**

The proponent must appoint a suitably qualified ECO who is responsible to:

- Undertake environmental audits of overall compliance with the environmental specifications. This should be done at least bi-annually for the project area.
- Submit a site inspection report to the Managing Director.
- Advise the company on interpretation and implementation of the environmental specifications as required; and,
- Make recommendations for remedial action in cases of non-compliance with the environmental specifications.
- The report should be submitted to the MEFT periodically at the time interval stipulated by law and as per the conditions of the Environmental Clearance Certificate.

### **3.5. CONTRACTORS AND SUB-CONTRACTORS**

The sub/contractors will have the responsibility to:

- Familiarize themselves with the requirements of the EMP and comply with the environmental specifications within.
- Timeously, notify the ECO of any actions that might have significant negative impacts. Mitigatory measures should be discussed before negative impacts arise and implemented if the impact occurs. Conduct or arrange for environmental training for employees and subcontractors.
- Undertake rehabilitation measures where required. Rehabilitation measures should be carried out progressively and not left till the end of the project.



## 4. ENVIRONMENTAL SPECIFICATIONS

All activities will be conducted in an environmentally and socially responsible manner. The proponent, contractors, and all personnel on-site will comply with the environmental specifications contained in this section.

### 4.1. TRAINING AND AWARENESS

All site personnel and site contractors will receive training to equip them with the necessary knowledge to comply with the environmental specifications. The proponent will ensure that appropriate training is provided to all site personnel.

### 4.2. STAKEHOLDER RELATIONS

All site personnel will endeavor to maintain good relations with the landowners and members of the public. Any complaints received by the PM/ECO should be recorded and will be addressed.

### 4.3. PERMITS

All relevant permits shall be obtained from relevant authorities.

Any removal or relocation of rare and endangered plants will be for conservation, and removal or relocation shall be done by a specialist and with the required permits from the Directorate of Forestry. Further on the possible permits required is presented in (TABLE 3).

TABLE 3 - APPLICABLE PERMITS TO THE PROPOSED PROJECT

PERMITS/CERTIFICATES	ACTIVITY	VALIDITY
Exclusive Prospecting Licence - MME	Issued once the mining commissioner is satisfied if all requirements outlined in the preparedness to grant are met.	3- Years
Environmental Clearance Certificate - MEFT	Issued once the environmental commissioner is satisfied with the EMP submitted in support of the project. The EMP will be the legally binding document between the MEFT and the proponent.	3-Years
Fuel Consumer Installation Certificate - (MME)	Regulates the amount of fuel product in possession	Temporary/ permanent
Notice of intention to drill – (MME)	This is submitted to the mining commissioner prior to drilling operation	Valid for the drilling period in notice
Water abstraction permit – (DWA)	This is applied for at the Directorate of Water Affairs to outline the borehole locations and the quantities of water you intend to abstract and for what sort of activities	Permit dependent
Forestry Permits – (DOF)	Regulates the forest species to be cleared.	Temporary.

#### 4.4. ROAD SAFETY

The access roads can be dangerous at times due to dust from passing vehicles, poor camber, patches of loose sand, careless drivers, animals and other external factors. All drivers must be aware of these hazards and take precautions to avoid them. Such precautions will include, but not be limited to:

- Complying with speed limits.
- Reducing speed considerably when visibility is poor.
- Being wary of other vehicles.
- Traveling with lights on even in daylight.
- Slowing down for animals and birds on the road; and,
- Being cautious of other road users– taking into account reduced visibility due to dust.

#### 4.5. ACCESS TRACKS

- The proponent will predominantly use existing tracks, and any new tracks or extensions should be established with the permission of the landowners and the Department of Forestry DoF when necessary (if larger areas require clearing).
- The selected access and site roads will be clearly marked. Turning points for vehicles will also be pre-selected and marked.
- Particular care will be taken to avoid damage to plants.
- Any elevated sites, or sites away from existing tracks, will be accessed on foot rather than by a vehicle.

#### 4.6. CONSERVATION OF BIODIVERSITY

- The proponent will endeavor to preserve or conserve all fauna and flora. Damage to protected species will be avoided at all costs.

#### 4.7. WILDLIFE POACHING

**NB: It is an offence to poach wildlife.**

No animal or bird is to be captured, killed or harmed in any way. Anyone caught violating this law will face suspension from the project and could be liable for prosecution. Likewise, domestic livestock on farms may not be harmed.

## 4.8. SOIL MANAGEMENT AND EROSION CONTROL

- During any excavating and clearing there must be care in the removal of topsoil. All soil within 100mm of the cleared surface level shall be regarded as topsoil.
- Remove and separately stockpile any subsoil material that can be used for site backfilling.
- Avoid handling soil when wet as this may result in the loss of soil structure and compaction.
- Soils should not be handled during windy conditions, which may lead to the loss of soil through wind erosion.
- Soil erosion must be prevented at all times. Where evidence of soil erosion can and/or is taking place, this should be reported to the Project Manager (PM) or ECO.
- Unnecessary compaction of construction areas must be prevented, to reduce runoff velocity.

## 4.9. POLLUTION CONTROL

### 4.9.1. Spillage Incidents

- Should any spillage incident occur, they should be reported immediately to the PM/ECO and shall be contained and cleaned up. All to ensure that correct mitigation of the pollution is undertaken.

### 4.9.2. Air pollution / Dust emission

- Soil and sand stockpiles shall be located in sheltered areas not exposed to the wind.
- Retention of vegetation where possible will reduce dust travel.
- Exposed surfaces must be re-vegetated as soon as possible.
- The movement of vehicles and other vehicles should be strictly controlled in order to reduce the impact of increased air pollution.
- Adherence to speed limits shall be enforced.
- Ensure sensible and responsible use of equipment which generates dust.
- Limit operations during dusty working weather conditions.
- Vehicles and operating equipment must be regularly serviced.

### 4.9.3. Noise pollution

- Noise levels shall be kept within acceptable limits. All noise and sounds generated shall adhere to SABS 0103 specifications for maximum allowable noise levels for residential/communal areas.
- Noisy activities must be limited to daytime to avoid disturbance towards adjacent/nearby landowners and other receptors.
- Pre-arrangements must be made for noisy activities that will take place over weekends and public holidays, or during night hours.

- Vehicles and operating equipment must be regularly serviced.

#### **4.10. WASTE MANAGEMENT**

- The area needs to be kept clean, neat, and tidy to the satisfaction of the proponent and ECO. The proponent will provide bins at the worksites and will be responsible for the collection and containment of daily refuse and waste generated by staff. Bins will be secured in such a way that wind cannot remove papers and plastics. Bins will also be secured against animals around the vicinity.
- No waste will be buried/burnt on site. All waste will regularly be removed to an approved waste disposal facility (nearest one in Khorixas).

#### **4.11. HAZARDOUS SUBSTANCES**

- All containers of fuel, oil, and any other hazardous substances will be kept sealed, and clearly labeled for identification.
- Tanks for fuels, oils, and any other hazardous substances need to be banded to hold 110% of the capacity of the tank to contain any possible spills.
- If any spills occur, clean-up shall occur immediately and disposed of appropriately.

#### **4.12. FIRE PREVENTION**

- Ensure an Emergency Response Plan.
- No fires are to be left unattended.
- Charcoal sourced from the surrounding should be 100% cured to avoid combustion.

#### **4.13. ARCHAEOLOGICAL SITES**

- All archaeological remains are protected under the National Heritage Act (2004) and are not to be destroyed, disturbed, or removed. The Act also requires that any archaeological finds be reported to the Heritage Council Windhoek (**Tel. 061-244375**). The same applies to rock art sites.
- Contractors working on the site should be made aware that under the National Heritage Act, 2004 (Act No. 27 of 2004) any items protected under the definition of heritage found in the course of development should be reported to the National Heritage Council.
- The chance finds procedure as outlined in the HIA must be implemented at all times. Reference should be made to the Heritage Impact assessment **Appendix E** of the scoping report.

- The ECO will be notified without delay of any archaeological finds.

#### 4.14. HEALTH AND SAFETY

All company personnel will receive a detailed induction upon joining the project. The PM and/or ECO will ensure regular safety 'tool box' meetings are carried out at the site in order to maintain safety awareness and to inform staff of any changes or developments pertaining to safe operations since the last induction/meeting. These meetings and inductions will be recorded and will include all names of staff present and any follow-up or action required from the meeting.

- **Dust:** All staff will receive dust masks and proper PPE to prevent inhalation of potential dust while carrying out any dust-producing activities associated with the project
- Eating, drinking, and **smoking** while working with any materials that may contain radioactive or hazardous substances is forbidden. Good personal hygiene is encouraged (e.g., washing hands before eating) to prevent ingestion of potentially hazardous or radioactive materials.
- **Bees:** Bee stings are potentially dangerous to persons who are allergic to them. Bees are attracted to water, so water / liquid should not be left standing. Antihistamine tablets should be available for the first aid treatment of allergic reactions to bee stings.
- **Snakes & Scorpions:** A number of poisonous snake and scorpion species may occur in the area. Therefore, precautions are required which include: -
  - Exercising caution when picking up rocks or equipment from the ground.
  - Looking at the ground when walking; and,
  - Wearing closed shoes and not walking barefoot.

In case of emergency, ensure that Aspivenin (suction syringe) is permanently available at all workstations for the first aid treatment of snake bites, scorpion stings and bee stings.

TABLE 4 - EMERGENCY CONTACT NUMBERS IN WARMBAD/KARASBURG

Ambulance	+264 63 270167
Fire Brigade	+264 63 270031
Electricity	+264 63 270032
Hospital / Clinic	+264 63 270167
Police	+264 63 270077
Water / Sewage	+264 63 270032

#### **4.15. WORK STOPPAGE**

The PM will have the right to order work to stop in the event of environmental specification infringements that could result in environmental damage to plants, wildlife, water & personnel. Work will continue once the situation is rectified and brought to a state of compliance.

#### **4.16. COMPLIANCE MONITORING**

Where necessary during exploration activities, the company ECO will conduct regular site compliance inspections. After each inspection the ECO will compile an EMP compliance report for submission to the PM and biannually to the MEFT or as required. Environmental monitoring programme is part of the EMP performances assessments and will need to be compiled and submitted as determined by the Environmental Commissioner. The process of undertaking appropriate monitoring as per specific topic (such as fauna and flora) and tracking performances against the objectives and documenting all environmental activities is part of internal and external auditing.

The monitoring of the EMP performance will require a report outlining all the activities related to effectiveness of the EMP at the end of the planned mineral exploration to be undertaken by the Project ECO with the support of the external specialist consultants as maybe required. The objective will be to ensure that corrective actions are reviewed, and steps are taken to ensure compliance for future EIA and EMP implementation.

The report shall outline the status of the environment and any likely environmental liability after the completion of the proposed / ongoing project activities. The report shall be submitted to the Environmental Commissioner in the Ministry of Environment Forestry and Tourism and will represent the final closure and fulfilment of the conditions of the ECC issued by the Environmental Commissioner and the conditions of the Pro-Forma Environmental Contract signed by the Proponent, Environmental Commissioner and the Mining Commissioner.

## 5. MITIGATION MEASURES

The purpose of the Environmental Management Plan is to provide a detailed plan to mitigate the negative and maximize the positive impacts identified in the environmental scoping and assessment report. Furthermore, it aims to provide actions with roles and responsibilities to implement the environmental specifications provided for to the proponent, contractors, subcontractors who will undertake exploration activities.

The following table provides a large-scale summary overview of all the major environmental management aspects. The scoping study submitted with this EMP also provides mitigation measures for impacts identified therein under **Chapter 9**.

TABLE 5 – EMP MITIGATION MEASURES

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
<b>Access Control</b>	<ul style="list-style-type: none"> <li>• Use existing roads and tracks as far as practically possible. Any new tracks required for exploration should be constructed in consultation with the landowners/custodians.</li> <li>• Driving only permitted on available roads and tracks (old and new tracks) and no offroad-track drives around the areas, as it may harm vertebrate fauna and unique flora, and may also cause erosion related problems.</li> <li>• Avoid off-road driving at night as this increases mortality of nocturnal species.</li> <li>• Implement and maintain off-road track discipline with maximum speed limits (60-100km/h, or as otherwise specified by the PM, or as per access agreements.)</li> <li>• Where tracks must be made to potential exploration sites off the main routes, the routes should be selected along already disturbed areas or where there is minimal biodiversity.</li> <li>• 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>• Rehabilitate all new tracks created if they will no longer be in use.</li> </ul>	Contractor, Project Manager/Site Manager	On-going
<b>Establishing Camping and storage Areas</b>	<ul style="list-style-type: none"> <li>• Establishment of the supporting project infrastructure should be done on an area with the least disturbance to the environment and within designated non-sensitive areas.</li> <li>• Any site establishment should be done in consultation with the landowners.</li> <li>• Choice of location for storage areas must take into consideration prevailing winds, distance to water bodies and general on-site topography.</li> <li>• Storage areas must be designated, demarcated, and fenced if necessary.</li> <li>• Storage areas should be secure to minimize the risk of crime.</li> <li>• They should be safe from access by children and animals etc.</li> <li>• Fire prevention/fighting tools must be present at all storage facilities.</li> </ul>	Contractor, Project Manager/Site Manager	On-going



Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	<ul style="list-style-type: none"> <li>• 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 the least effect.</li> <li>• 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>• Rehabilitate all areas disturbed by the exploration activities such as the camp sites, exploration sites including all excavated areas.</li> </ul>		
<p><b>Establishing Storage Areas</b></p>	<p><b><u>Hazardous Material Storage</u></b></p> <ul style="list-style-type: none"> <li>• Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are diesel, petroleum, oil, bitumen, cement, solvent-based paints, lubricants, explosives, drilling fluids.</li> <li>• Material safety Data Sheets (MSDSs) shall be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.</li> <li>• Hazardous storage areas must be 110% bunded with an impermeable liner to protect groundwater and soil from contamination. The Contractor shall submit a method statement to the Project Manager for approval.</li> <li>• Storage areas containing hazardous substance materials must be clearly sign posted.</li> </ul>	<p>Environmental Control Officer(ECO), Proponent</p>	
<p><b>Education Of Site Staff</b></p>	<p><b><u>Environmental Education and Awareness</u></b></p> <ul style="list-style-type: none"> <li>• Ensure that all site personnel have a basic level of environmental awareness</li> </ul>	<p>Project Manager/Site</p>	<p>During staff</p>

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
<p><b>on General Environmental Conduct</b></p>	<p>training. Topics to be covered may include but not limited to:</p> <ul style="list-style-type: none"> <li>○ What is meant by “environment”.</li> <li>○ Why the environment needs to be protected and conserved.</li> <li>○ How exploration activities can impact on the environment.</li> <li>○ What can be done to mitigate against such impacts.</li> <li>○ Awareness of emergency and spills response provisions.</li> <li>○ Social responsibility during operations, e.g., being considerate to local residents.</li> </ul> <ul style="list-style-type: none"> <li>● It is the proponent's responsibility to provide the site with the appropriate level of environmental training and to ensure that there is sufficient understanding to pass this information onto anyone operating at the site.</li> <li>● The need for a ‘clean site’ policy also needs to be explained to all workers.</li> </ul>	<p>Manager Environmental Control Officer(ECO), Proponent</p>	<p>induction and ongoing</p>
<p><b>Education Of Site Staff on General Environmental Conduct</b></p>	<p><u><b>Workers Conduct on site.</b></u></p> <ul style="list-style-type: none"> <li>● A general regard for the social and ecological wellbeing of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules:</li> <li>● No alcohol / drugs to be present on site.</li> <li>● No firearms allowed on site or in vehicles transporting staff to / from site(unless used by security personnel).</li> <li>● Prevent excessive noise.</li> <li>● Bringing pets onto the site is forbidden.</li> <li>● No harvesting of firewood from the site or from the adjacent areas.</li> <li>● Staff are to make use of the facilities provided for them, as opposed to ad-hoc alternatives, (e.g., fires for cooking, the use of surrounding areas / bush as a toilet is forbidden).</li> </ul>	<p>Proponent, Employees, Environmental Control Officer(ECO)</p>	<p>During staff induction and ongoing</p>

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	<ul style="list-style-type: none"> <li>• Trespassing on private / commercial properties adjoining the site is forbidden.</li> <li>• Driving under the influence of alcohol is prohibited.</li> </ul>		
<b>Social Impacts</b>	<ul style="list-style-type: none"> <li>• Implement measures to reduce project-related influx.</li> <li>• Manage unrealistic expectations with the appropriate messaging.</li> <li>• Develop a standardized recruitment method for the hiring of sub-contractor and field workers.</li> <li>• Prioritize the employment of local residents and the contracting of local companies.</li> <li>• If required, the establishment of a camp should be conducted with the prior approval of the landowner.</li> <li>• Accommodation camp should consider provision of basic services.</li> <li>• The proponent shall develop a worker code of conduct.</li> <li>• Any criminal activity will be reported to the authorities.</li> <li>• Proponent to implement a no-tolerance policy regarding the use of alcohol and workers should submit to a breathalyzer test upon request when reporting for duty daily.</li> <li>• Request that the Roads Authority/proponent erect warning signs of heavy operation vehicles on affected public roads.</li> <li>• Ensure that drivers adhere to speed limits and that speed limits are strictly enforced.</li> <li>• Ensure that vehicles are in good condition and road worthy, and drivers are licensed.</li> <li>• Train drivers in potential safety issues.</li> <li>• A feedback mechanism will be implemented to address complaints and grievances in a timely and culturally appropriate manner.</li> </ul>	Contractor, Project Manager/Site Manager	During staff induction and ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
Biodiversity	<p><b><u>Fauna and Flora</u></b></p> <ul style="list-style-type: none"> <li>• The area is known for dwarf succulents and pachycauls species. A biodiversity baseline specialist study was conducted for the project, therefore this EMP should be read in conjunction with the findings of the specialist report.</li> <li>• In the event where exploration intensifies, a site-specific vegetation survey should be conducted over the areas of interest.</li> <li>• No protected vegetation may be cleared without prior permission from the forestry department.</li> <li>• Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas.</li> <li>• Disturbance to birds, animals and reptiles and their habitats should be minimized wherever possible.</li> <li>• Avoid unnecessarily affecting areas viewed as important habitat.</li> <li>• Avoid off-road driving at night as this increases mortality of nocturnal species.</li> <li>• Implement and maintain off-road track discipline with maximum speed limits (e.g.,60km/h).</li> <li>• Remove and relocate slow moving vertebrate fauna (e.g. tortoises, chameleon, snakes, etc.) to suitable habitat elsewhere on property.</li> <li>• Avoid rocky outcrops throughout the entire EPL area.</li> <li>• Prevent and discourage the collection of firewood as dead wood has an important ecological role – especially during the development phase(s).</li> <li>• Avoid and discourage open area fires as this could easily cause runaway veld fires causing problems that could result in major loss of grazing, domestic and wildlife mortalities.</li> <li>• Rehabilitate to an agreed upon use with stakeholders.</li> <li>• Implement erosion control. The area(s) towards and adjacent the drainage line(s)</li> </ul>	Employees, ECO, Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	<p>are easily eroded, and further development may exacerbate this problem. Avoid construction within 20m of the main drainage line(s) to minimise erosion problems as well as preserving the riparian associated fauna.</p> <ul style="list-style-type: none"> <li>• In an event of a discovery of economic minerals resources, 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> <li>• No domestic pets such as cats and dogs are allowed to accompany workers during the field-based exploration stage as cats decimate the local fauna and interbreed and transmit diseases to the indigenous African Wildcat that may be found in the local area.</li> <li>• KoBold metals should engage and enter into agreements with individual farmers including those that are registered with the Department of Veterinary Services to export meat to the EU and other national and international markets.</li> <li>• The proponent should familiarize themselves with the EU farming practice and veterinary regulations and laws where necessary should be taken into consideration during the planned exploration activities.</li> </ul>		
<b>Visual</b>	<ul style="list-style-type: none"> <li>• Consider the landscape character and the visual impacts of the area (including camp site) from all relevant viewing angles, particularly from public roads.</li> <li>• Use vegetation screening where applicable. Do not cut down vegetation unnecessarily around the site and use it for site screening.</li> <li>• Avoid the use of very high fencing.</li> <li>• Minimise access roads or going off-road where it could result in land scarring.</li> <li>• Minimise the presence of secondary structures: remove inoperative support structures.</li> <li>• Remove all infrastructure and reclaim or rehabilitate the project site after project</li> </ul>	Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	activities are completed.		
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Dust suppression techniques should be employed, where possible, if the specific operation activity is likely to create dusty atmospheric conditions in excess of the periodic extremes.</li> <li>• Avoid activities that create excessive dust on extremely windy days.</li> <li>• Personnel are required to wear personal protection equipment if excessive dust is created for prolonged working periods.</li> <li>• When necessary and if the generation of dust is ongoing for a period of over 2 years continuously, establish a monthly dust monitoring exercise to collect the baseline dust conditions in the area before excessive activities such as trial mining commences.</li> </ul>	Contractor, Project Manager/Site Manager, ECO	Ongoing
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Machineries and vehicles (moving and stationed) should be serviced regularly.</li> <li>• A noise management standard operating procedure (SOP) for the activities happening on-site should be developed.</li> <li>• Avoid creating unnecessary noise by making sure that equipment not in use are always turned off and by avoiding operations during odd hours.</li> <li>• Fit sound mufflers on all machinery where applicable.</li> <li>• Equip employees with appropriate PPE (noise reduction earplugs/earmuffs)</li> <li>• Employees should work in shifts to avoid prolonged working hours and consequently prolonged exposure to noise.</li> </ul>	Contractor, Project Manager/Site Manager	Ongoing
<b>Health and safety</b>	<ul style="list-style-type: none"> <li>• 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>• Some of the public access management measures that may be considered in an event of vandalism occurring are:</li> </ul>	Contractor, Project Manager/Site Manager	Ongoing

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	<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 camp site through using gates on the access road(s) if required.</li> <li>- Should trial mining occur the entire trial pit site must be fenced off appropriately.</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> <li>• Access to operations area should be limited to authorized personnel only. Prior arrangement should be done for non-authorized individuals.</li> </ul>		
<p><b>Protection of Soil and Ground/surface water as well as general water usage</b></p>	<ul style="list-style-type: none"> <li>• Always use as little water as possible. Reduce, reuse and re-cycle water where possible.</li> <li>• All leaking pipes / taps must be repaired immediately as they are noticed.</li> <li>• Never leave taps running. Close taps after you have finished using them.</li> <li>• The Proponent must obtain permission of the landowners before utilizing any water resources or any associated infrastructure.</li> <li>• Accidental spills that occur outside of the bund area must be contained and prevented from entering the stormwater system.</li> <li>• All spills must be reported to the project manager on site and treated with the appropriate spill absorbent.</li> <li>• Any significant spills or leak incidents must be reported in terms of the National Environmental Management Act and the Water Act.</li> <li>• If there is a need to drill a water borehole to support the proposed exploration programme the Proponent (Proponent) must obtain permission from the landowner and Department of Water Affairs in the Ministry of Agriculture and Forestry.</li> <li>• In an event of discovery of economic minerals resources, the sources of water</li> </ul>	<p>Contractor, Project Manager/Site Manager</p>	<p>Ongoing</p>

Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
	<p>supply for the mining related operations will be supplied by NamWater and the Proponent is advised to contact NamWater at the earliest stages of the development of any possible mining project, and.</p> <ul style="list-style-type: none"> <li>• 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> </ul>		
<b>Waste</b>	<ul style="list-style-type: none"> <li>• The domestic waste, which is separated from all paper and organic materials, is taken to the nearest official dumpsite.</li> <li>• Oil from the servicing of the vehicles and machines is collected in drums and is taken together with all other industrial waste that is generated on site to the nearest hazardous waste site.</li> <li>• Storage areas that contain hazardous substances must be bunded with an approved impermeable liner.</li> <li>• Bins and / or skips shall be provided at convenient intervals for disposal of waste within the project site.</li> <li>• Bins should have liner bags for efficient control and safe disposal of waste.</li> <li>• Recycling and the provision of separate waste receptacles for different types of waste should be encouraged.</li> <li>• Ensure good housekeeping.</li> </ul> <p><b><u>Ablutions</u></b></p> <ul style="list-style-type: none"> <li>• Waterless toilets are to be maintained in a clean state and should be moved to ensure that they adequately service the work areas.</li> <li>• The Contractor is to ensure that open areas or the surrounding bush are not being used as a toilet facility.</li> </ul>	All personnel	Ongoing



Aspect	MANAGEMENT DETAILS	RESPONSIBLE PERSONS	FREQUENCY
<b>Heritage sites destruction during exploration activities</b>	<ul style="list-style-type: none"> <li>In addition, where possible, activities are to be aligned along previously disturbed areas. Habitats surrounding the washes (rivers) may host sensitive plant species which require permits for removal to avoid destruction. No wandering around the site, collecting of plant species or hunting should be allowed.</li> <li>A 'chance find' is contained in the heritage specialist report conducted for the project. Any potential heritage site should be communicated to the police and the National Heritage Council of Namibia.</li> <li>If activities occur at the location where a 'chance find' has been made, then the activities should cease until the necessary authorities have visited the site and provided the go ahead to proceed with activities.</li> </ul>	Contractor, Project Manager/Site Manager	Ongoing
<b>Rehabilitation</b>	<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 on completion of the project work.</li> <li>Water / Fuel tanks are dismantled and removed if not needed for further use.</li> <li>Tracks on site and the access road are rehabilitated by smoothing the middle ridge between the tracks and raking the surface unless the owner/farmer has provided the proponent a request in writing to retain the track(s)</li> <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> </ul>	Contractor, Project Manager/Site Manager	Progressively and prior ceasing project activities

## 6. DECOMMISSIONING AND REHABILITATION

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

The objectives of the closure and decommissioning are to:

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

### 6.1. SITE REHABILITATION

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

### 6.2. PLANNING FOR REHABILITATION

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

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

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

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

It is anticipated that rehabilitation works will be marginal as most of the techniques to be employed in this exploration are minimally to non-invasive.

## 7. MONITORING PLAN

The project monitoring is conducted under the EMP includes:

- (i) **EMP compliance monitoring** - To be conducted by the ECO to verify EMP compliance during project implementation especially if the program continues for over a period required for monitoring by MEFT.
- (ii) The second part of the monitoring of the EMP performance will require a report outlining all the activities related to effectiveness of the EMP at the end of the planned mineral exploration to be undertaken by the Project ECO with the support of the external specialist consultants as maybe required. The objective will be to ensure that corrective actions are reviewed, and steps are taken to ensure compliance for future EIA and EMP implementation.
- (iii) The report shall outline the status of the environment and any likely environmental liability after the completion of the proposed / ongoing project activities. The report shall be submitted to the Environmental Commissioner in the MEFT and will represent the final closure and fulfilment of the conditions of the ECC issued by the Environmental Commissioner and the conditions of the Pro-Forma Environmental Contract signed by the Proponent, Environmental Commissioner and the Mining Commissioner

## 8. CONCLUSION

This Environmental Management Plan highlights the management measures that will be implemented to mitigate the environmental impacts of the proposed activities. Additionally, it highlights the need / requirements for the Environmental Emergency Preparedness and Response procedure. The EMP is a legal document, which commits the applicant to comply with all management measures, monitoring programmes and other plans as presented herein. As part of the EMP, monitoring programmes have been provided to manage and control critical components of the environment. This is a live document which may be amended if project activities alter.

It is advised that the Environmental Management Plan should be implemented from the beginning of each exploration phase and exploration program and generally on an ongoing basis; that environmental performance is regularly monitored (so that the lessons learnt during the exploration phase can be incorporated into the improvement of the Environmental Management Plan over time); and that corrective measures are taken as or when required.

In the event that economic minerals resources are discovered within the EPL 9056 area and could lead to the development of mining project, a new Environmental Clearance Certificate (ECC) for mining will be required. The ECC being supported by this Report only covers the exploration phase. A separate field-based and site-specific Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports supported by specialist studies as maybe applicable must be prepared in order to support the application for the new ECC for mining operations. The EIA and EMP studies shall form part of the prefeasibility and feasibility study with respect to the test mining or possible mining operations.