



**EXPLORATION 18 (PTY) LTD**

**ENVIRONMENTAL MANAGEMENT PLAN FOR  
THE PROPOSED EXPLORATION ACTIVITIES  
ON EPL 8237 NEAR KHORIXAS IN THE  
KUNENE REGION**

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## ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 8237 NEAR KHORIXAS IN THE KUNENE REGION

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## ACRONYMS AND ABBREVIATIONS

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

<b>Acronyms / Abbreviations</b>	<b>Definition</b>
DEA	Department of Environmental Affairs
ECC	Environmental Clearance Certificate
EPL	Exclusive Prospecting License
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy

## ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 8237 NEAR KHORIXAS IN THE KUNENE REGION

### 1 INTRODUCTION

#### 1.1 BACKGROUND

Exploration 18 (Pty) Ltd has exclusive agreements with the owner of Exclusive Prospecting Licence (EPL) 8237, Gabriel Nakatati to do exploration within the EPL's boundaries (see Figure 1). EPL 8237 is located west of EPL 6772 and south of EPL 7031, approximately 15 km southwest of Khorixas on both sides of the C35 towards Uis. EPL 8237 covers a total surface area of 19,947.53 ha.

Exploration 18 (Pty) Ltd proposes to undertake exploration activities on EPL 8237 for base and rare metals, industrial minerals and precious metals to confirm the feasibility of the resource. The proposed exploration activities include geological mapping, rock chip and soil sampling within the targeted areas, and drilling (depending on the results of the aforementioned activities).

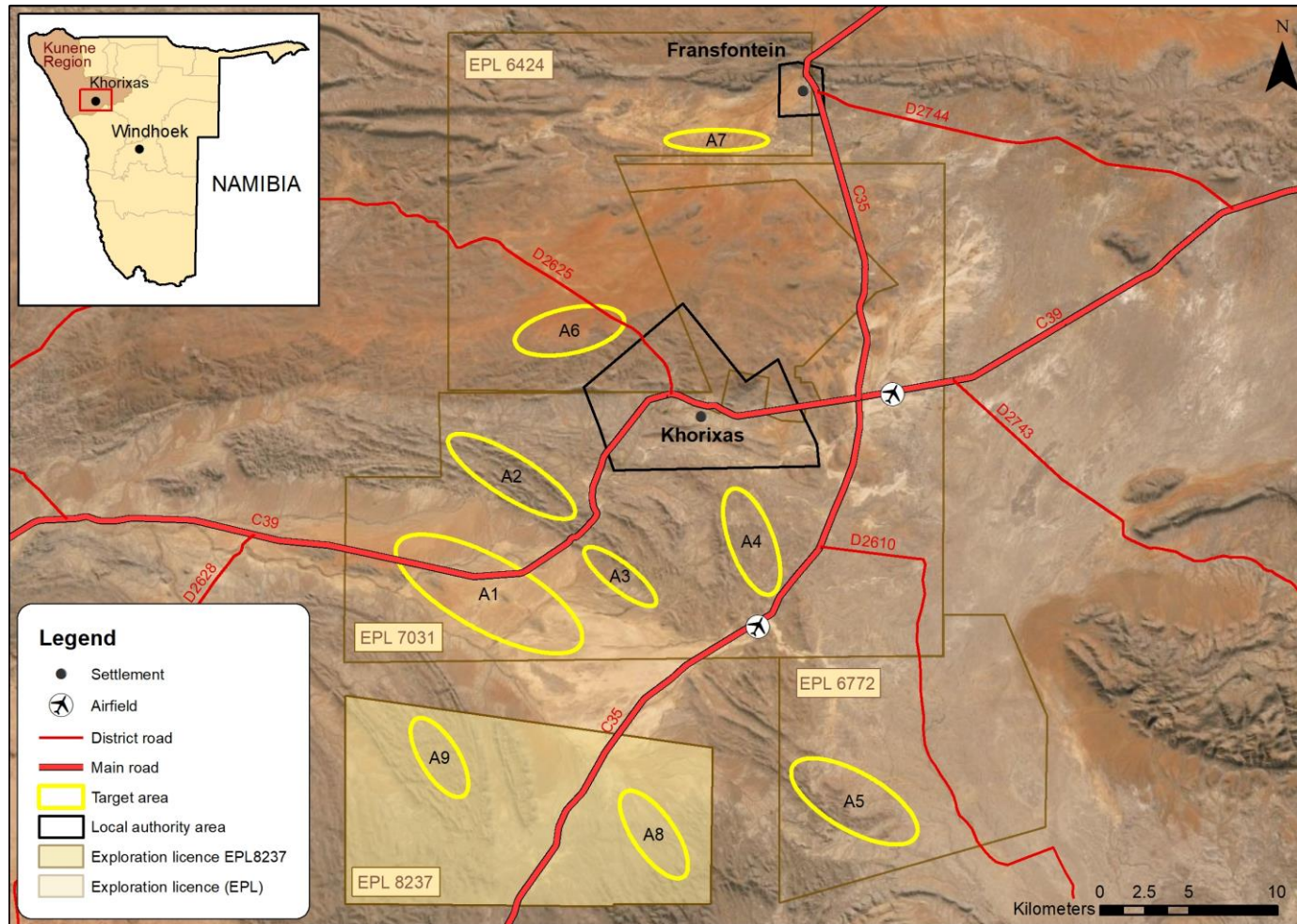
Prior to the commencement of the proposed exploration activities, environmental clearance is required from the Department of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT), on the basis of an approved Environmental Impact Assessment (EIA) process, in terms of the Environmental Management Act, No. 7 of 2007 and its associated regulations of 2012.

An Environmental Scoping Report and Environmental Management Plan (EMP) are required as part of the Environmental Clearance Certificate (ECC) application, as well as to support the decision-making process. This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its associated regulations of 2012.

Namisun as an independent firm of environmental consultants based in Namibia, has been appointed by Exploration 18 (Pty) Ltd to undertake and manage the EIA process.

#### 1.2 MANAGEMENT OF THE ENVIRONMENTAL MANAGEMENT PLAN

If approved, an ECC will be issued for the proposed project. The proponent, Exploration 18 (Pty) Ltd will be held responsible for the implementation and management of this EMP.



**FIGURE 1: LOCALITY MAP OF EPL 8237**

## 2 ENVIRONMENTAL ASPECTS AND IMPACTS

Table 1 provides a summary of the activities associated with the exploration activities, the associated environmental aspects and potential impacts on the environment and also a qualitative assessment of these impacts (before and after mitigation). See also Section 7 of the Scoping Report for details.

**TABLE 1: ENVIRONMENTAL ASPECTS AND POTENTIAL IMPACTS ASSOCIATED WITH THE EXPLORATION ACTIVITIES ON EPL 8237**

Activity	Aspect	Potential Environmental Impact	With and without mitigation	Significance
<b>Geological studies, field mapping, and soil sampling</b>				
Field mapping, ground surveys, and rock and soil sampling	Biodiversity	Potential impact on fauna and flora (General disturbance and clearing of vegetation)	Without	<b>M</b>
			With	<b>L</b>
	Air quality	Increase in dust levels (nuisance and health impacts)	Without	<b>L</b>
			With	<b>L</b>
	Heritage	Activities could result in possible damage to / destruction of heritage resources.	Without	<b>M-H</b>
			With	<b>L</b>
<b>Drilling</b>				
Drill site establishment: <ul style="list-style-type: none"> <li>• Access the drill site (possibly creating a new access track)</li> <li>• Set-up drilling machine with drip trays and groundsheets</li> <li>• Establish temporary safety fencing around the drill site</li> <li>• Set-up of portable toilet and ablution facilities</li> <li>• Set-up fuel and lubricants storage area</li> </ul>	Noise	Noise generated by the establishment of access tracks and drill site.	Without	<b>L</b>
			With	<b>L</b>
	Biodiversity	Potential impact on fauna and flora. (General disturbance and clearing of vegetation)	Without	<b>M</b>
		Unsupervised drilling personnel can impact on the biodiversity through illegal collection of firewood and organisms, poaching, road kills, off-road driving, etc.	With	<b>L</b>
		Potential loss of land available for livestock farming and wildlife.		
		Site clearance may encourage the establishment of invasive plants in the area.	Without	<b>M</b>
			With	<b>L</b>
	Land use	Loss of land capability due site clearance.	Without	<b>M</b>
			With	<b>L</b>
	Heritage		Without	<b>M-H</b>

Activity	Aspect	Potential Environmental Impact	With and without mitigation	Significance
		Exploration activities could result in possible damage to or destruction of heritage resources.	With	L
Drilling	Spillages of hydrocarbons, lubricants, or possible spills from portable toilet and ablution facilities	Soil pollution	Without	L
			With	L
		Surface water contamination	Without	L-M
			With	L
	Groundwater could become polluted due to pollutants entering aquifers via surface water infiltration.	Without	M	
		With	L	
	Dust generation through using access tracks. Air pollution from exhaust fumes. Dust generation through drilling activities	Air quality deterioration. Increase in dust levels (nuisance and health impacts)	Without	L-M
			With	L
	Noise generation	Noise generated by the drill could disturb nearby residences (nuisance).	Without	L-M
			With	L
Land use	Potential loss of land use and capability (very limited area) due to a combination of the above-mentioned impacts. Potential loss of grazing and wildlife.	Without	M	
		With	L	
<b>Relevant to all activities</b>				
All exploration activities	Socio-economic set-up and functioning and community safety	Inconvenience to residents and impacts on way of life	Without	M-H
			With	L
	Waste management	The dumping of general waste could prove hazardous to wildlife and livestock, and can impede agricultural production. Dumping of waste can also lead to general environmental degradation and visual impacts.	Without	M
			With	L
			Without	L-M



Activity	Aspect	Potential Environmental Impact	With and without mitigation	Significance
	Social wellbeing – provision of portable toilet and ablution facilities	Health and safety issues	With	L
<b>Closure and rehabilitation of drill site</b>				
Remove all waste and equipment from site. Rip compacted areas (including access roads and paths).	Biodiversity Visual	Return site to natural state. No overall impacts.	<b>N.A.</b>	

### 3 PERMITS AND AUTHORIZATION REQUIREMENTS

#### 3.1 ENVIRONMENTAL CLEARANCE CERTIFICATE

Environmental clearance is required from the DEA within the MEFT prior to commencement of the proposed exploration activities, on the basis of an approved EIA process, in terms of the Environmental Management Act, No. 7 of 2007 and its associated regulations of 2012. An Environmental Scoping Report and EMP are required as part of the application for clearance, and to support the decision-making process.

If approved, an ECC will be issued for the proposed project and the proponent will be held responsible for the implementation and management of the EMP. An ECC is valid for three years and may be renewed. Application for renewal must be lodged prior to the expiry date of the ECC.

#### 3.2 EXCLUSIVE PROSPECTING LICENCE

Exploration 18 (Pty) Ltd has exclusive agreements with the owner of EPL 8237, Gabriel Nakatati, to do exploration within the EPL's boundaries. The proposed project operates under a licence that permits for the execution of prospecting and exploration activities, which may include the construction of temporal camps, drill sites and access roads. An EPL excludes any mining activities and makes provision strictly relating to exploration work.

An EPL is granted for a period of three years and may be renewed, but only be extended twice for two-year periods if demonstrable progress is evident. Renewals are subject to reduction in the size of the EPL and applications must be lodged prior to the expiry date of the EPL. Amendments and revisions may be required for the EIA and EMP in the case of a renewal.

Notice of the intention to drill needs to be submitted to the Ministry of Mines and Energy (MME), prior to drilling on an EPL.

#### 3.3 WATER

Although the Water Resources Management Act, No. 11 of 2013 is not enforced, it is best practice to adhere to its stipulations while ensuring compliance with the Water Act, No. 54 of 1956.

It is not intended to drill a borehole to obtain groundwater; however, in the case of such an unlikely development, a licence to abstract water is required in terms of the Water Act, No. 54 of 1956 and shall operate in accordance with any conditions of the licence. Abstraction rates need to be measured and reported to the authorities in accordance with the permit. Annual reporting on the environmental impacts of water abstraction is recommendable.

In the case of effluent discharge, the proponent must ensure that all documentation, permits and measures are in place prior to discharge, including effluent discharge permits in terms of the Water Act, No. 54 of 1956. The proponent should provide specification of the treatment system (type of technology); describe the activities resulting in effluent generation; list all possible contaminants (by providing the necessary analysis of effluent samples); provide information about the effluent quality; reference the points of discharge; and report the necessary quantities.

All water-related permits need to be applied for from the Department of Water Affairs within the Ministry of Agriculture, Water and Land Reform (MAWLR).

### 3.4 VEGETATION

It is unlikely that an area greater than 15 ha will be cleared from vegetation as a result of the exploration activities, therefore a permit under the Forest Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005 and its regulations of 2015 is not required.

However, some vegetation will be cleared on the EPL to allow exploration activities to commence. Section 22 of the Act requires a permit for the cutting, destruction or removal of vegetation that are classified under rare and or protected species. The Act also stipulates that trees, shrubs and bushes within 100 m from a watercourse may not be cut, destroyed or removed without a permit. The necessary permit(s) should be obtained from the Directorate of Forestry within the MEFT.

### 3.5 HERITAGE

Section 55 of the National Heritage Act, No. 27 of 2004 compels exploration companies to report any heritage findings to the National Heritage Council after which a heritage permit needs to be issued, and before heritage resources may be relocated. Since there is a potential that heritage objects might be found, the stipulations of the Act have to be taken into account, in addition to a Chance Finds Procedure which is provided for in this EMP.

## 4 AIM OF THE EMP

The aim of the EMP is to detail the actions required to effectively implement mitigation and management measures. These actions are required to minimise negative impacts and enhance positive impacts associated with the operations (see Table 1).

The EMP gives the commitments, which form the environmental contract between Exploration 18 (Pty) Ltd and the Government of the Republic of Namibia; represented by the MEFT.

It is important to note that an EMP is a living document in that it will be updated and amended (where relevant) as new information (e.g., environmental data), policies, authority guidelines, technologies and proposed activities develop. The management measures proposed to mitigate the potential impacts are detailed in the action plans in Section 10.

## 5 OVERALL ENVIRONMENTAL OBJECTIVES

The following overall environmental objectives have been set for the proposed exploration activities on EPL 8237, to be implemented by Exploration 18 (Pty) Ltd:

- To comply with national legislation and standards for the protection of the environment;
- To limit potential impacts on biodiversity through the minimisation of the footprint and the conservation of residual habitat as far as possible;
- To investigate and exploit measures to minimize impact to water resources;
- To keep landowners and neighbours informed about exploration activities;
- To limit contaminated effluent discharge into the environment through the containment, recycling or removal of contaminated water;
- To protect soils and groundwater resources through the implementation of measures for spill prevention and clean-up;
- To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimisation, recycling (where possible), management, temporary storage and removal of waste;
- To minimise the potential for dust emissions and impacts to 3<sup>rd</sup> parties;
- To minimise the potential for noise disturbance in surrounding areas and possible sensitive receptors;
- To undertake rehabilitation after the completion of the various exploration activities;
- To avoid potential impacts on the safety of landowners and neighbours;
- To support and encourage environmental awareness (and where relevant training) and responsibility amongst all employees and service providers;
- To prevent pollution and clean up if incidents occur;
- To incorporate the relevant requirements stipulated in this EMP into the exploration programme, design and contracts;
- To ensure that all the employees and contractors adhere to the relevant management commitments; and
- Ensure compliance to the EMP and other relevant conditions or approvals (ECC and other permits).

## 6 PARTIES RESPONSIBLE FOR THE IMPLEMENTATION OF THE EMP

This section describes the roles and responsibilities for implementing the various management plans.

### 6.1 OPERATIONS MANAGER

The Exploration 18 (Pty) Ltd Operations Manager shall ensure compliance to this EMP. The EMP will be part of the contract with all contractors working on the project.

### 6.2 EXPLORATION MANAGER

The Exploration 18 (Pty) Ltd Exploration Manager has overall responsibility for environmental management at all the exploration sites and for ensuring this EMP is implemented. The Exploration Manager must ensure the EMP is included in all contracts and ensure that contractors adhere to the conditions of the EMP.

Contract documents should consider the inclusion of penalties for non-conformance to the EMP, or to link the sign-off of the contract to a retainer clause. The client retains part of the contract fees until the Exploration Manager has signed off the clearance certificate, indicating satisfaction with the rehabilitation of the contractor's work and exploration activities (where relevant).

In addition to the above, the Exploration Manager is responsible for ensuring that all persons involved with the project comply with this EMP.

The Exploration Manager will be responsible for the following aspects related to compliance of this EMP:

- Regular inspections and auditing compliance to this EMP and any other relevant legal requirements e.g., permits and authorisations.
- Conduct environmental awareness training during induction training and on an ad hoc basis thereafter.
- Ensure compliance to this EMP and permits and authorisations issued to Exploration 18 (Pty) Ltd by relevant authorities.
- Submit required information to relevant authorities such as reporting on compliance with the EMP, permit and relevant authorisations.
- Liaise with the Operations Manager on environmental management (where required).

### 6.3 CONTRACTORS AND EXPLORATION TEAM

All contractors and their sub-contractors, and employees of Exploration 18 (Pty) Ltd will be contractually required to comply with the relevant commitments in this EMP.

#### 6.4 EXTERNAL SPECIALISTS

Exploration 18 (Pty) Ltd may appoint an external environmental specialist, as and when required, to assist with the implementation of certain commitments made in the various management plans.

An external environmental specialist will also assess compliance against the EMP on an annual basis.

### 7 DEALING WITH ENVIRONMENTAL EMERGENCIES AND INCIDENTS

Potential environmental emergencies are identified by the Exploration Manager based on legal and other requirements, aspects identified and risk rating and knowledge of the EPL and associated activities.

Should an environmental emergency occur, the following procedure will be followed: -

- The Operations Manager must immediately be notified of the incident;
- Steps must immediately be taken to minimize the spread of pollution or other risks;
- The Operations Manager must report the incident to the following state departments (depending the nature of the incident):
  - Department of Water Affairs within the MAWLR;
  - The Namibian Police Services or relevant Fire Department;
  - The relevant landowner(s); and
  - Any other state departments that must be notified in response to specific legal or policy requirements.
- Clean-up and remedial actions must be taken. These may be directed by the Department of Water Affairs, or developed in consultation with water specialist; and
- Informing the Department of Water Affairs when the incident has been fully remediated.

### 8 AUDITING / MONITORING COMPLIANCE OF THE EMP

The commitments contained in this EMP will, once environmental clearance has been obtained, be the contractual agreement between Exploration 18 (Pty) Ltd and the Namibian authorities for sound environmental management. All employees, contractors and sub-contractors will be expected to comply with the commitments contained herein.

The EMP is a legally binding document and non-compliance with it shall result in disciplinary action, such as fines and penalties; legal action; monetary penalties; withdrawal of licences and permits; and the suspension of work.

### 8.1 INTERNAL AUDITS AND INSPECTIONS

A copy of the EMP shall be available onsite and upon request, throughout the duration of the project.

The Exploration Manager shall be responsible for monitoring and enforcement of the EMP on a day-to-day basis and conduct regular internal inspections against the commitments in the EMP.

Daily, weekly and monthly inspections will be undertaken. Inspection findings will be documented for both record keeping purposes and for informing continual improvement.

Any violation of the EMP shall be recorded and the agreed-on measurements are taken, e.g., penalties. Violations are reported to the Operations Manager.

### 8.2 EXTERNAL ENVIRONMENTAL PERFORMANCE ASSESSMENT

Conduct bi-annual audits and compile bi-annual environmental reports, which need to be submitted to MME, MAWLR and MEFT.

### 8.3 MONITORING

An inspection program shall be established to check that standards and procedures as described in the EMP are implemented and complied with. A reporting system shall be maintained to ensure that all applicable statutory requirements are met.

Incidents and non-conformances shall be recorded and addressed with appropriate corrective action.

Reporting of incidents and non-conformances shall include details such as the reason for incidents and non-conformance, responsible persons, consequences, the corrective action taken and the necessary follow-up activities. Incidents and non-conformances shall be reported to the Exploration Manager. The cause of incidents and non-conformances shall be investigated and recommendations formulated to prevent recurrence.

Monitoring requirements include, but are not limited to:

General monitoring:

- Conduct audits and inspections as per Section 8.1. All non-compliances should be recorded and discussed at weekly site meetings and timeous remedial actions taken.
- Check for non-compliances (off-road driving, signs of illegal fires, traps and weapons, lack of good housekeeping, spills and leaks, incorrect storage of substances, etc.) during a general drive-through weekly.

- Monitor drill areas and all access tracks and roads frequently. Record all negligent plant destruction sightings, and apply the penalty system to all guilty parties.
- Constant monitoring and record keeping of rehabilitation progress until it is completed, approved and signed off by the Exploration Manager.
- Daily monitoring of fences and gates which have been entered through to ensure no unplanned movement of livestock or animals occur.

#### Waste Management:

- Monitor whether the provisions set out in this EMP concerning waste management is being applied as per instructions.
- Keep safe disposal certificates.

#### Dust and noise:

- When complaints are received from affected communities regarding noise and dust nuisance, abatement in the form of water spraying and restricted work hours should be implemented. Communication with those that complained should be continued to determine whether the problem has been resolved.

#### Training and awareness

- Exploration Manager to request attendance registers be completed by all personnel attending induction training sessions.

## 9 REPORTING / SUBMISSION OF INFORMATION

As a minimum, the following documents will be submitted to the relevant authorities on an ongoing basis:

- The bi-annual report required by the MEFT will be submitted every six months.

## 10 ACTION PLANS TO ACHIEVE OBJECTIVES

Action plans to avoid / minimise / mitigate potential environmental impacts (as defined in the Scoping report and Table 1) are listed in Table 2, separated by activities. The action plans also include the frequency for implementing the mitigation measures as well as identifying the responsible party.



**TABLE 2: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – FIELD MAPPING, ROCK AND SOIL SAMPLING**

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
Field mapping, rock and soil sampling	Socio-economic and land use	<ul style="list-style-type: none"> <li>- Honour agreements set out in the site-access contracts</li> <li>- Consult and provide feedback regarding activities on the individual properties</li> <li>- Provide contact details to a designated staff member of Exploration 18 (Pty) Ltd, who will serve as liaison between landowners and the exploration teams</li> <li>- Landowners to be provided with a list of all people working onsite</li> <li>- All staff operating onsite will be provided with identification and proof that they are working for the applicant</li> <li>- Ensure gates are closed after entry and exit.</li> <li>- Poaching and plant theft will not be tolerated and staff found in possession will be prosecuted.</li> <li>- Schedule exploration activities in such a way that disturbances to local people are minimised.</li> <li>- No new access tracks are created during mapping and soil sampling if not otherwise agreed with the landowners during the land access agreement.</li> <li>- No firearms are allowed</li> <li>- Consult and provide feedback regarding activities</li> </ul>	Duration of mapping and sampling	Exploration Manager Contractors Employees
	Biodiversity	<ul style="list-style-type: none"> <li>- The footprint of the area to be disturbed for surveying or mapping and for providing access to survey sites will be minimised as far as is practically possible.</li> <li>- Exploration 18 (Pty) Ltd will implement a zero-tolerance policy with regards to the killing or collecting of any biodiversity. This applies to people directly employed as well as any contractors working on their behalf.</li> <li>- Employees and contractors will be shown the value of biodiversity and the need to conserve the species and systems that occur within the project area.</li> <li>- No open fires will be permitted onsite.</li> <li>- Speed limits will be enforced so as to prevent road kills.</li> <li>- Protected species will be identified and marked to be left intact.</li> </ul>	Duration of mapping and sampling	Exploration Manager Contractors Employees

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		<ul style="list-style-type: none"> <li>- No protected species will be harmed, removed or killed.</li> <li>- If removal or cutting of protected plant species is unavoidable, tree removal permits will be obtained for the removal of all protected tree species (as is required by the Forestry Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005).</li> <li>- In case unknown species are discovered, a biodiversity specialist will be contacted and informed about the location of the species.</li> </ul>		
	Air quality	<ul style="list-style-type: none"> <li>- Vehicle speeds will be limited to 40km/h on access routes to limit dust.</li> <li>- National Road Safety Regulations that apply to usage of seatbelts and adhering to speed limits within gravel road tarred roads must be followed.</li> </ul>	Duration of mapping and sampling	Exploration Manager Contractors Employees
	Heritage	<ul style="list-style-type: none"> <li>- Prior to the commencement of exploration activities in a specific area, liaise with the landowner (or occupant in the case of State land) to obtain any further information regarding likely heritage sites within the target exploration areas.</li> <li>- Prior to the commencement of exploration activities in the EPL, the location of the recorded heritage site should be determined. The specific site should be classified as a no-go terrain and a No-go Procedure be put in place.</li> <li>- The precautionary principle must be applied throughout – team members should be given training to know what heritage resources they may encounter and what to do in case a discovery is made.</li> <li>- A limited number of vehicles and people will be used for the activities so that proper supervision can be ensured and potential damage be avoided.</li> <li>- In the event that heritage resources are discovered, a Chance Finds Procedure will be implemented which includes the following:                             <ul style="list-style-type: none"> <li>o All work at the find will be stopped to prevent damage;</li> <li>o Identify the site with flag tape</li> <li>o Determine the georeferenced point</li> </ul> </li> </ul>	Prior to commencement of activities  Duration of mapping and sampling	Exploration Manager Contractors Employees

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		<ul style="list-style-type: none"> <li>○ Report the finding to the Explorations Manager and the National Heritage Council</li> <li>○ An appropriate heritage specialist will be appointed to assess the find and related impacts;</li> <li>○ The heritage specialist will inspect the site, advise the National Heritage Council and request a permit to remove the findings from the work area, if required; and</li> <li>○ Recover, package and label the findings for transfer to the National Museum</li> </ul> <p>- In the event that any structures or cairns or graves are discovered during the exploration activities, these will be avoided and preserved as a first priority. In the event of discovering human remains, the actions will be as outlined above, including:</p> <ul style="list-style-type: none"> <li>○ Field inspection by a heritage specialist to confirm that the remains are human;</li> <li>○ Advise and liaise with the National Heritage Council and Police; and</li> <li>○ Recover the remains and remove it to the National Museum or National Forensic Laboratory as directed.</li> </ul> <p>- If damage is unavoidable, prior to damaging or destroying any identified graves, permission for the exhumation and relocation of graves must be obtained from the relevant descendants (if known) and the relevant authorities.</p>		

**TABLE 3: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – DRILL SITE ESTABLISHMENT**

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- Access the drill site using a new access track where necessary	Air quality – dust and gaseous emissions	- The movement of drilling equipment and support vehicles on unpaved access tracks will be on a small scale	Ongoing	Exploration Manager Contractors

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
<ul style="list-style-type: none"> <li>- Set-up drilling machine with drip trays and groundsheets</li> <li>- Strip vegetation and topsoil (up to 300 mm where available)</li> <li>- Temporarily store topsoil adjacent to drill site</li> <li>- Set-up portable toilet and ablution facilities</li> <li>- Set-up fuel and lubricants storage area</li> </ul>		<ul style="list-style-type: none"> <li>- Vehicle speeds will be limited to 30km/h onsite</li> <li>- Vehicles and the drilling rig will be maintained in good working order</li> <li>- Minimise new access route development (routes to be approved by landowners prior to development)</li> </ul>		Employees
	Noise	<ul style="list-style-type: none"> <li>- Vehicles will travel maximum 30 km/hour near homesteads or settlements</li> </ul>	Ongoing	Exploration Manager Contractors Employees
	Biodiversity	<ul style="list-style-type: none"> <li>- Refer to biodiversity management measures relating to mapping and sampling (Table 2).</li> <li>- Honour agreements set out in the site-access contracts, specifically relating to the areas utilised for farming.</li> <li>- Provide appropriate toilet and ablution facilities for the exploration workers on the site (where required).</li> </ul>	Ongoing	Exploration Manager Contractors Employees
	Land use	<ul style="list-style-type: none"> <li>- Access agreements to be prepared and approved prior to drill site establishment.</li> <li>- The footprint of the area to be disturbed will be minimised as far as is practically possible.</li> <li>- Areas used as laydown areas are to be ripped or scarified to encourage re-vegetation</li> <li>- Agree on relevant compensation with landowners where land uses are impacted</li> </ul>	Ongoing	Exploration Manager
	Heritage	<ul style="list-style-type: none"> <li>- Refer to heritage management measures relating to mapping and sampling (Table 2)</li> </ul>	Ongoing	Exploration Manager
	Socio-economic	<ul style="list-style-type: none"> <li>- Refer to socio-economic management measures relating to mapping and sampling (Table 2)</li> </ul>	Ongoing	Exploration Manager

**TABLE 4: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – DRILLING**

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
<ul style="list-style-type: none"> <li>- Drill borehole</li> <li>- Contain all drilling water in the sump and allow to settle</li> <li>- Log the drill core and place on core trays</li> </ul>	Contamination of soil and hydrocarbon spillages	<ul style="list-style-type: none"> <li>- In all areas where there is storage of hazardous substances (i.e., hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances.</li> <li>- All refuelling and any maintenance of vehicles will take place on impermeable surfaces.</li> </ul>	Ongoing for all drilling activities	Exploration Manager Contractors Employees

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- Maintain toilet and ablution facilities		<ul style="list-style-type: none"> <li>- Pollution will be prevented through basic infrastructure design and through maintenance of equipment.</li> <li>- Spill kits will be readily available onsite. Employees and or contractors will be shown to use the spill kits to enable containment and remediation of pollution incidents.</li> <li>- Environmental awareness training of contractor</li> <li>- Exploration 18 (Pty) Ltd will establish environmental awareness among employees and contractors</li> <li>- An impermeable lined sump will be used for collection of oils and silt contained in the drilling water</li> <li>- Any spills will be contained and cleaned up immediately</li> <li>- Non-toxic and biodegradable drilling lubricants will be used</li> </ul>		
	Groundwater contamination	<ul style="list-style-type: none"> <li>- Refer to management measures relating to contamination of soils.</li> <li>- Licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained for all drilled holes (not just boreholes).</li> <li>- Provide appropriate toilet and ablution facilities for the exploration workers on the site.</li> </ul>	Ongoing for all drilling activities	Exploration Manager
	Air quality deterioration	<ul style="list-style-type: none"> <li>- Vehicle speeds will be limited to 40km/h on access routes to limit dust.</li> <li>- The movement of drilling related vehicles on unpaved access track will be on a small scale.</li> <li>- Water sprays can be used around the lay-down area when a drill site is located near houses or a settlement.</li> </ul>	Ongoing for all drilling activities	Exploration Manager Contractors Employees
	Noise generation	<ul style="list-style-type: none"> <li>- Drilling will only be conducted during the day in the case of drill sites near homesteads or settlements.</li> <li>- Drilling plans and schedules will be discussed and agreed upon with landowners prior to initiation.</li> <li>- Use well-maintained drilling equipment.</li> <li>- Vehicles will travel maximum 30 km/hour near houses or settlements.</li> </ul>	Ongoing for all drilling activities	Exploration Manager Contractors Employees
	Land use	<ul style="list-style-type: none"> <li>- Refer to land use management measures relating to drill site establishment (Table 2)</li> </ul>	Ongoing for all drilling activities	Exploration Manager
	Third party safety	<ul style="list-style-type: none"> <li>- The working area of the drill site will only be accessed by Exploration 18 (Pty) Ltd and their contractors / workers.</li> </ul>	Ongoing for all drilling activities	Exploration Manager

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		<ul style="list-style-type: none"> <li>- Warning signs will be erected and maintained at the strategic location to warn third parties of dangers associated with the drilling activities.</li> <li>- Put 'no entry' signs at tracks turning off the official tourist routes.</li> <li>- Any person entering the drill sites will only be allowed after formal induction.</li> </ul>		

**TABLE 5: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – RELEVANT TO ALL EXPLORATION ACTIVITIES**

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- All exploration activities	Social – provision of toilet and ablution facilities	<ul style="list-style-type: none"> <li>- Provide appropriate toilet and ablution facilities for the exploration workers on the site.</li> </ul>	Ongoing for all exploration activities	Exploration Manager Contractors Employees
	Waste Management	<ul style="list-style-type: none"> <li>- Suitable receptacles for waste disposal will be provided at appropriate locations onsite. These receptacles will be clearly marked for different waste types.</li> <li>- Employees and contractors will be shown the importance of correct waste disposal as well as waste minimisation and recycling (where possible).</li> <li>- Waste will be removed from site and disposed of at a suitable waste disposal facility.</li> <li>- Hazardous waste (including hydrocarbon contaminated material or soil) will be disposed of at a licenced hazardous waste disposal facility.</li> </ul>		
	General behaviour of exploration team in the EPL area.	<ul style="list-style-type: none"> <li>- Provision in the budget is made for environmental awareness and training and for internal and external environmental monitoring and auditing costs as well as for rehabilitation costs.</li> <li>- Responsibilities as set out in Section 6 are explained and adhered to.</li> <li>- The EMP should be included in all tender documents.</li> </ul>		
		<ul style="list-style-type: none"> <li>- Senior exploration staff and all senior contractors are aware of, and implementing, the EMP requirements. All persons shall be expected to know and understand the objectives of the EMP and will, by example, encourage suitable environmentally aware behaviour to be adopted on all sites.</li> <li>- Immediate recognition should be given to appropriate environmentally</li> </ul>		Exploration Manager

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		acceptable behaviour. Any inappropriate behaviour should be immediately corrected. An explanation as to why the behaviour is unacceptable must be given, and, if necessary, the person could be disciplined, e.g., fees set out, for different non-environmental compliance or not allowed to work on the project anymore.		

**TABLE 6: ENVIRONMENTAL MITIGATION MEASURES AND COMMITMENTS – CLOSURE AND REHABILITATION**

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
General closure activities: - Close drill holes (unless otherwise agreed with landowners) - Remove water from the sump and drip trays - Remove oils and silt from drip trays and store until disposal to permitted hazardous landfill site - Backfill the sump once it has dried out (dome to allow for subsidence) and plug borehole (unless an agreement is in place with landowner for alternative uses) - Move drill core trays, toilet and ablution facilities, support equipment and vehicles from the site - Dispose of any general waste to	Groundwater and surface water contamination	<ul style="list-style-type: none"> <li>- In all areas where there is storage of hazardous substances (i.e., hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances.</li> <li>- All refuelling and any maintenance of vehicles will take place on impermeable surfaces.</li> <li>- Pollution will be prevented through basic infrastructure design and through maintenance of equipment.</li> <li>- Spill kits will be readily available onsite. Employees and or contractors will be shown how to use the spill kits to enable containment and remediation of pollution incidents.</li> <li>- Any spills will be contained and cleaned up immediately.</li> </ul>	Once - closure of drill site	Exploration Manager
	Soil erosion	<ul style="list-style-type: none"> <li>- Impacted footprints are to ripped or scarified to encourage re-vegetation</li> <li>- Access routes will be ripped unless the landowners request otherwise</li> <li>- A monitoring program will be implemented to establish re-vegetation progress</li> <li>- Agree on relevant compensation with landowners where land used is impacted</li> </ul>	Starts at closure, continues for a pre-determined time (as stated in agreements)	Operations Manager Exploration Manager
	Waste management	<ul style="list-style-type: none"> <li>- Decommission toilet and ablution facilities</li> <li>- Ensure that all waste generated during activities is removed from the site and disposed of appropriately</li> </ul>	Once-off	Exploration Manager
	Land use	<ul style="list-style-type: none"> <li>- Landowners will be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably.</li> </ul>	Post-closure	Exploration Manager

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
<p>a permitted landfill site</p> <ul style="list-style-type: none"> <li>- Remove temporary fencing</li> <li>- Rip and scarify compacted areas</li> <li>- Rake and sweep new tracks</li> <li>- Replace topsoil over disturbed area</li> <li>- Rehabilitate access track by ripping</li> </ul>	General	<ul style="list-style-type: none"> <li>- All litter from the site i.e., bottles, tins, piping, etc. are contained and taken to an appropriate disposal site.</li> <li>- All debris, scrap metal, etc., is removed before moving to a new drill site.</li> <li>- All sumps have been dried and filled in, if not portable water reservoirs are used.</li> <li>- New tracks must be restored by fine raking and sweeping when exploration activities are complete. It is important that each tyre track be individually swept. If the entire area over the double track is swept it increases the area of impact.</li> <li>- Ensure that no heaps of soil, rocks and material remain – sweep and rake manually before moving to the next drill pad so that the site looks as close to ‘pre-operation ‘as possible.</li> <li>- Re-cover levelled land with the soil that has been removed.</li> </ul>	Before moving to a next drill site	Exploration Manager