ENVIRONMENTAL MANAGEMENT PROGRAMME FOR EXPLORATION WELL DRILLING

Various farms in the Free State Province

Prepared for: Rhino Oil and Gas Exploration South Africa (Pty) Ltd

Authority References:

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REPORT SIGN OFF AND APPROVALS

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ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
CBA	Critical Biodiversity Area
DMRE	Department of Mineral Resources and Energy
E&S	Environmental and Social
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ER	Exploration Right
ESA	Environmental Site Assessment
EWP	Exploration Work Programme
FEPA	Freshwater Ecosystem Priority Areas
MS	Method Statement
MPRDA	Minerals and Petroleum Resource Development Act, 28 (No. 28 of 2002)
MSDS	Materials Safety Data Sheet
NEMA	National Environmental Management Act, 1998 (No. 107 of 1998)
NWA	National Water Act, 1998 (No. 36 of 1998)
PASA	Petroleum Agency South Africa
Rhino	Rhino Oil and Gas Exploration South Africa (Pty) Limited

Environmental Management Programme for Exploration Well Drilling

1. INTRODUCTION

The following chapter provides a brief overview to the Environmental Management Programme (EMPr), and the EMPrs administrative context.

1.1 BACKGROUND

This EMPr has been prepared for Rhino Oil and Gas Exploration South Africa (Pty) Limited's (Rhino) exploration well drilling to be undertaken within their Exploration Right (ER) 294 in the Free State Province of South Africa.

The EMPr has been compiled as part of the Environmental Authorisation (EA) application process and in compliance with Appendix 4 of the Environmental Impact Assessment Regulations (EIA) 2014. The purpose of this EMPr is to ensure that impacts associated with the project are avoided and, where they cannot be avoided, are kept to a minimum and that environmental damages are rehabilitated. The EMPr, which has as its basis the technical design controls and mitigation measures listed in the well drilling project's Environmental Impact Assessment Report (SLR, April 2023), sets environmental objectives and actions against which the project's environmental performance would be measured.

For each of the planning and design, exploration and decommissioning phases of the proposed exploration well drilling Project, the EMPr presents the related environmental management outcomes and actions, the roles and responsibilities and monitoring requirements.

On an ongoing basis, new actions to manage environmental risks may be identified and addressed, and obsolete ones removed, particularly when new or changed methods and/or equipment are used for well drilling or testing. If necessary, the EMPr will be amended to reflect the revised actions and submitted to Department of Mineral Resources and Energy (DMRE) for approval, when required.

1.2 ENVIRONMENTAL ASSESSMENT PRACTITIONER

SLR Consulting (South Africa) (Pty) Ltd was appointed as the independent Environmental Assessment Practitioner (EAP) responsible for undertaking a Scoping and Environmental Impact Assessment (S&EIA) process to inform the EA application and preparing the EMPr for the proposed well drilling in ER 294. The details of the EAP project team that prepared the EMPr are provided in Table 1-1.

Table 1-1: DETAILS OF THE S&EIA PROJECT TEAM

Details of the S&EIA Project Team	
General	
Organisation	SLR Consulting (South Africa) (Pty) Ltd
Postal address	PO Box 1596, Cramerview, 2060
Tel No.	(011) 467 0945
Email	mhemming@slrconsulting.com/twicks@slrconsulting.com

Details of the S&EIA Project Team			
Name	**Qualifications and Registrations**	**Years of Experience**	**Email**
Matthew Hemming	M.Sc. (Conservation Biology) University of Cape Town SACNASP – (Professional Natural Scientist) EAPASA (1107), IWMSA, Member IAIAsa	17	**Principal Environmental Consultant** Management of the S&EIA process, including public consultation, process review, specialist study review and report compilation.
Theo Wicks	M. Phil. (Environmental Management). University of Stellenbosch Member IAIAsa	14	**Associate Environmental Consultant** Management of the S&EIA process, including public consultation, process review, specialist study review and report compilation.

Relevant CV's are included in Appendix A.

1.3 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

This EMPr provides for the management of all aspects associated with Rhino's exploration well drilling and testing in designated Target Areas as outlined in their amended Exploration Work Programme (EWP). A detailed description of the Project activities is outlined in Section 5 of the EIA Report prepared for the well drilling in ER 294 (SLR, 2023).

In summary, the EWP proposes the drilling of up to 40 exploration wells within two (2) Target Areas in the ER. Project activities associated with drilling include the following phases:

- Mobilisation of the truck mounted rig and supply trucks from drilling contractor base located near Pretoria to the Rhino Target Area in the Free State Province;
- Well drilling;
- Well execution (logging, completion) options;
- Well testing for successful well options;
- Well abandonment for unsuccessful well (Plug and Abandonment "decommissioning");
- Demobilisation of the drill rig, supply truck and local logistics base; and
- Closure and rehabilitation.

A typical drill site schematic is provided in Appendix B: .

The location of each well drilling site was subject to a process of geological review, landowner consent and environmental and social risk screening. Through this process Rhino was able to locate five (5) 'identified' exploration well sites (See Appendix B:). The balance of the proposed 40 wells included in the EWP (35 wells in total) remain unseen and are designed for use if Rhino confirms a resource when drilling the five (5) 'identified wells'. Deploying any of the 35 'unseen wells' provides flexibility and efficiency to the EWP. If, through the course of drilling the five (5) 'identified wells', Rhino is able to confirm a gas resource, they would be able to explore in the vicinity of the resource using one (or several) of the

remaining 'unseen wells'. Deployment of any of the 'unseen wells' would be subject to compliance with the EMPr which includes, amongst other, adhering to the environmental constraints used to identify the initial five (5) 'identified well' sites (Refer to Section 2.1 for further details).

1.4 EXPLORATION DOCUMENTATION

The scope of this EMPr is designed to accommodate adaptability in the EWP, while providing for the necessary environmental protections. As explained in Section 1.3 above, not all well sites have been identified. As a result, the landowner agreements and environmental screening results for 'unseen wells' are not currently in place. To ensure that these aspects are addressed at the time, the following documentation is to be appended to the EMPr as and when future 'unseen well' sites are identified:

- Environmental Site Assessment (ESA) of each currently "unseen" well site;
- Landowner Use Agreements with each landowner; and
- Petroleum Agency South Africa (PASA) approvals of the ESA Reports.

1.5 RESPONSIBLE PERSONS

The implementation of this EMPr requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during the Project phases. The organisational structure during the Project is presented in Figure 1-1.

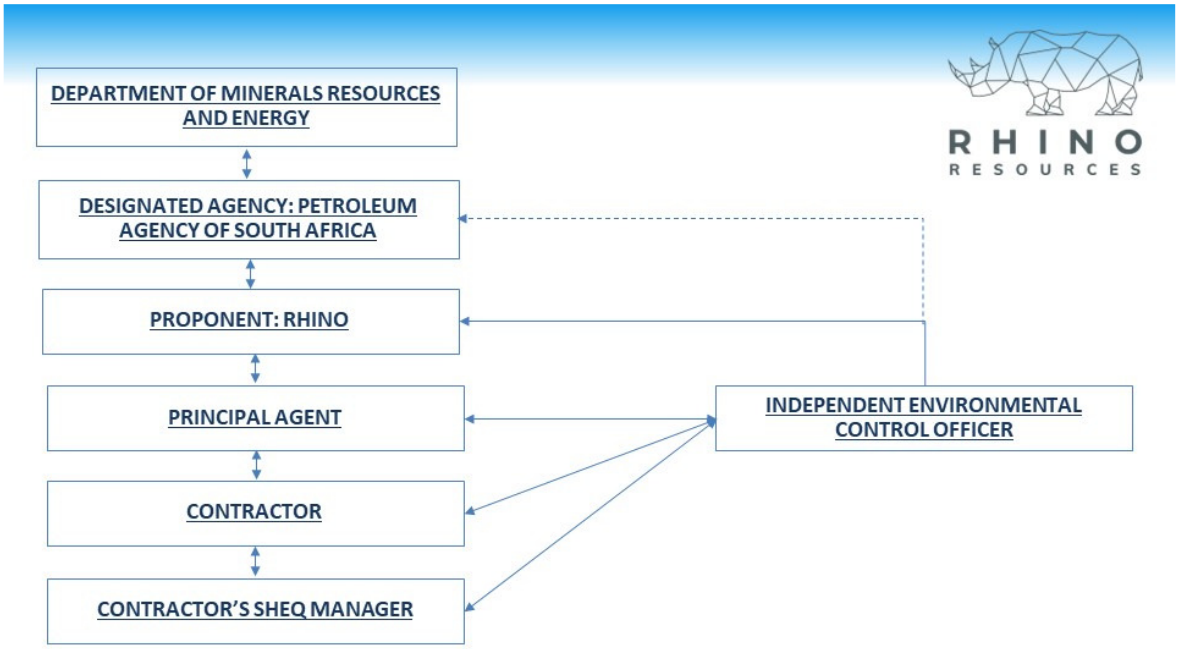


Figure 1-1: Organisational structure during the Project phases.

1.5.1 Designated Agency: Petroleum Agency of South Africa

In terms of Section 70 of the MPRDA, the Minister of Mineral Resources and Energy in June 2004, designated various duties pertaining to petroleum exploration and production to PASA. Section 71 of MPRDA deals with the functions of the designated agency. Functions include the receipt of applications

for different types of permits and rights (Section 71i), some of which require Environmental Authorisations. Section 71(i) provides that the designated agency must review and make recommendations to the Minister with regards to the acceptance of environmental reports and the conditions of Environmental Authorisations and amendments thereto.

PASA is responsible for promoting the exploration of oil and gas resources (Section 71a) and the optimal development thereof on behalf of the South African government. As such, PASA deals with the regulation and monitoring of exploration and production activities and endeavours to make sure that all such activities have long-term economic benefit for South Africa. In addition, PASA is the custodian of the national exploration and production database for petroleum. PASA would be responsible for review and approval of ESA reports for future 'unseen well' sites and for the regulation of environmental performance during well drilling.

1.5.2 Proponent: Rhino Oil and Gas, Exploration South Africa (Pty) Ltd

Rhino, as the holder of the ER 294 and EA, is ultimately responsible for the implementation of the conditions of the EA, the actions in the EMPr and all measures required to ensure that the operations are undertaken in terms of the obligations set by the regulatory framework. Rhino will be responsible for the financial cost of all environmental control measures and monitoring requirements arising from the project. Rhino must ensure the provision of resources for adequate facilities, equipment and suitably trained employees for implementation of the EMPr. Rhino shall also ensure that any other authorisations and permits, where required, have been obtained from the authorities.

Rhino may appoint appropriately qualified staff, consultants and contractors as 'responsible persons' to carry out the obligations set by the regulatory framework and the EMPr. Rhino must ensure that any person acting on its behalf complies with the conditions/specifications contained in this EMPr. Rhino is also responsible for the appointment of a Principal Agent, Contractor and Independent Environmental Scientist/Consultant. Rhino shall address any site problems pertaining to the environment at the request of the DMRE/PASA, the SHEQ Manager and Independent Environmental Scientist/Consultant.

1.5.3 Principal Agent

For the purposes of this document the "Principal Agent" refers to any person (such as the geologist or project manager) authorised by Rhino to oversee the phases of the project. Any on-site decisions regarding environmental management are ultimately the responsibility of the Principal Agent.
The responsibilities of the Principal Agent are to:

- Ensure that the requirements as set out in this EMPr, in land owner agreements, and by the relevant Authorities, are adhered to and implemented.
- Assist the SHEQ Manager in ensuring that the conditions of the EMPr are being adhered to and promptly issuing instructions requested by the SHEQ Manager or Independent Environmental Scientist to the Contractor. All site instructions pertaining to environmental matters issued by the Principal Agent are to be copied to the SHEQ Manager.
- Ordering the removal of person(s) and/or equipment not complying with the specifications or issuing a stop works order (as required by the SHEQ Manager or otherwise).

- Issuing of penalties for transgressions of environmental site specifications.
- Providing input into the SHEQ Manager's ongoing internal review of the EMPr compliance.
- Maintain relationships with landowners and manage external stakeholder consultation, where required.

1.5.4 Contractor

The Contractor shall have the following responsibilities:

- To provide appropriate skills and resources in order to implement all provisions of the EMPr during the various phases. If the Contractor encounters difficulties with specifications, they must discuss alternative approaches with the Principal Agent and/or the SHEQ Manager prior to proceeding.
- To appoint a SHEQ Manager (See Section 1.5.5).
- To ensure that all staff are familiar with the EMPr.
- To make personnel aware of environmental issues and to ensure that they show adequate consideration of the environmental aspects of the project.
- To prepare the required Method Statements (MS).
- To report any incidents of non-compliance with the EMPr to the Principal Agent.
- To rehabilitate any sensitive environments damaged due to the Contractor's negligence. This shall be done in accordance with Rhino's and SHEQ Manager's specifications.
- Monitoring and verifying that the environmental impacts are kept to a minimum.

Failure to comply with the EMPr may result in fines and reported non-compliance may result in the suspension of work or termination of the contract by the Principal Agent.

1.5.5 Contractor SHEQ Manager

The Contractor's appointed SHEQ Manager shall ensure that its responsibilities are executed in compliance with the EMPr. Any on-site decision regarding environmental management is ultimately the responsibility of the SHEQ Manager.

Additionally, the SHEQ Manager shall have the following responsibilities:

- To implement all provisions of the EMPr during the well drilling and decommissioning and rehabilitation phases (Refer to Sections 2.2 and 2.3). If the SHEQ Manager encounters difficulties with specifications, he/she must discuss alternative approaches with the relevant personnel prior to proceeding.
- Undertake awareness training of Contractor personnel.
- Undertake internal monitoring in terms of the EMPr.
- Maintaining a photographic record of progress on site from an environmental perspective (including pre-drilling and post decommissioning).
- Undertake inspections and audits of the site operation's compliance with the EMPr (See Section 0).
- Keeping a register of complaints on site and recording community comments and issues and the actions taken in response to these complaints.

- Reporting any incidents of non-compliance with the EMPr to the Principal Agent and/or PASA.
- To address any issues at the request of PASA and/or the public.

1.5.6 Independent Environmental Scientist/Consultant

Rhino shall appoint an independent Environmental Scientist/Consultant who shall be responsible to:

- Undertake Environmental Site Assessments of 'unseen wells' as part of the exploration well planning and design;
- Undertake external monitoring and auditing of the project implementation in terms of the EA and EMPr; and
- Provide environmental support and oversight to Rhino, as required.

1.6 EMPR AVAILABILITY

Copies of this EMPr shall be kept at the site office(s) for the duration of activities at each exploration well drilling site and shall be made available to the "responsible persons" who shall familiarise themselves with the contents of this document.

2. ENVIRONMENTAL SPECIFICATIONS

The various actions that need to be implemented, to ensure that the environmental objectives and outcomes are met, are detailed in Action Plans for each Project phase. The actions are aimed at mitigating environmental impacts and implementing rehabilitation. The management actions are stated in a manner that ensures that they can be audited during the performance assessment programme. The Action Plans include the timeframes for implementing the actions together with the assignment of responsibility for implementation. The successful implementation and commencement within the timeframes are to be monitored as part of the performance assessment programme.

For purposes of this EMPr the various project phases have been grouped as per Table 2-1 below

Table 2-1: Project and EMPr Phases

Project Phase	EMPr Phase
Drill site identification	Planning and Design
Mobilisation	
Well drilling	Undertaking of Exploration
Well execution (logging, completion, testing) options	
Well abandonment for unsuccessful well (Plug and Abandonment "decommissioning")	Decommissioning and Rehabilitation
Demobilisation of the drill rig, supply truck and local logistics base.	

2.1 PLANNING AND DESIGN

2.1.1 The Planning and Design phase for the exploration activities requires the sequential implementation of several actions in order to inform the determination of drill site locations, well design and drilling methods. Each of the actions are described below and detailed in Actions

Management actions required during the Planning and Design phase are described in Table 2-2.
Table 2-2.

2.1.2 Environmental objectives

The environmental management outcomes outlined for the future phases of the proposed project (see Section 2.2 for 'Undertaking of Exploration' and Section 2.3 for 'Decommissioning and Rehabilitation') will be taken into account during the Planning and Design phase. Specific impact management objectives for the Planning and Design phase are to:

- Locate wells on properties where the owner consents to access and on sites in areas of demonstrated low environmental and social sensitivity, preferentially with existing access and
- Well planning and design to be by a qualified specialist in terms of applicable industry standards and regulation, with cognisance of the local context; and

- Consult with PASA and landowners.

2.1.3 Actions

Management actions required during the Planning and Design phase are described in Table 2-2.

Table 2-2: Environmental Actions during Planning and Design

No	Objectives	Action Plan	Schedule	Responsibility	Requirements for Implementation
1	Locating Drill Sites				
1.1.	To identify and avoid environmental and social sensitivities when siting target drill sites.	• All target drill sites and access routes to be assessed on GIS database to avoid known environmental sensitivities. • Target drill sites may not be placed in areas mapped as: ○ Protected areas under National Environmental Management Protected Areas Act, 2003 (No. 57 of 2003) (NEMPAA); ○ Within the 1:100 year flood line or within 200 m from a watercourse or wetland; • In the following areas, target drill sites should preferably be avoided, but if essential may not be placed in areas of indigenous vegetation: ○ Critically endangered or endangered ecosystems; ○ Critical Biodiversity ('irreplaceable') or Ecological support ('high significance') areas in biodiversity conservation plans; ○ Focus areas for protected area expansion strategy;	• After target sites are identified and permission obtained from landowner. • At least one month prior to mobilisation/ site establishment.	• Rhino	• GIS assessment of environmental sensitivities at target site. ○ utilise most up to date GIS data that is available, ○ results to be reviewed by independent Environmental Scientist. • Adjustment of site location and access route.

		○ Highest biodiversity risk from Mining and Biodiversity Guideline (including wetland and river Freshwater Ecosystem Priority Areas (FEPAs); ○ Core areas of biosphere reserves			
1.2.	To prevent drilling or move target drill sites from areas, habitats and features of high sensitivity.	• Suitably qualified, independent Environmental Scientist to conduct an Environmental Site Assessment of proposed target drilling site, access roads and camp sites. • Environmental Scientist to ground truth result of GIS assessment and confirm presence/status of biodiversity features at, and within 100 m of, the target drill site. • Environmental Scientist is to identify environmental sensitivities including species or habitats of conservation importance, graves/cemeteries or cultural sites, steep slopes, and potentially sensitive receptors. Also to identify drainage lines, watercourses, wetlands and water bodies. • All drill sites are to be preferentially located on previously disturbed ground at a site that poses a low risk to sensitive environmental or heritage features and which will cause minimal influence or disturbance to nearby receptors. • A drilling site/access routes is to be relocated to a less sensitive location if the Environmental Scientist identifies red	• At least one month prior to mobilisation/ site establishment	• Rhino	• Environmental Site Assessment by independent Environmental Scientist. • Relocate target drill site/ access route to more appropriate location. • Submit to PASA for acceptance.

		data/protected species or sensitive habitats/ features.			
1.3.	To identify and protect sensitive sites.	• Sensitive sites to be identified during Environmental Assessment and in consultation with land and rights owners. • If significant features are identified or there is any uncertainty from the Environmental Scientist, then further specialist work on specific sensitivities of the site may be required. • Any specialist work must be undertaken by a specialist registered with South African Council for Natural Scientific Professions within the field for which they render service.	• Prior to site establishment.	• Rhino	• Environmental Site Assessment and possible Specialist investigation(s). • Relocate target drill site/ access route to more appropriate location OR • Apply for required authorisations/licences and • Define site specific mitigation measures.
1.4.	To ensure compliance with environmental authorisation requirements under NEMA and NWA	• If the proposed drill site location triggers any authorisation requirements in terms of the NEMA, NWA or other legislation, apply for and obtain authorisation from competent authority before undertaking any triggered activity.	• Prior to commencing activity.	• Rhino	• Apply for required authorisations/licences and • Define site specific mitigation measures.
1.5.	To minimise disturbances to existing infrastructure and receptors	• Landowner agreement to access to the sites must be obtained prior to commencement of any activities. • Drill sites may not be placed within: ○ Protected areas under NEM:PAA ○ All areas within the 1:100-year flood line or 100 m from a wetland ○ All areas identified as “irreplaceable” (CBAs) or “highly significant” (Ecological Support Areas) in the provincial biodiversity conservation plan.	• Prior to commencing activity.	• Rhino	• Ground truth the site before establishment. • Signing of Land Use Agreement by the landowner.

		○ All areas identified as "critically endangered" or "endangered" ecosystems. ○ Biodiversity importance from the Mining and Biodiversity Guideline (which incorporates river and wetland FEPAs) ○ All Focus areas for protected area expansion strategy ○ All areas of biosphere reserves ○ All areas within 500 m of a borehole ○ Areas and sites of cultural heritage or archaeological/Paleontological significance (including a 100 m buffer). ○ Areas within 200 m from residences. ○ Areas within 500 m from urban areas. ○ Areas withing 50 m of linear infrastructure.			
2	Drill Site Access				
2.1	To avoid conflicts with landowner or lawful occupiers.	• Utilise existing farm roads for access where possible. • The owners of land or occupiers at target exploration sites are to be consulted and agreement obtained to access and establish drilling and associated infrastructure on site. • Agreement is to be sought from owners of land, on the location and extent of drilling site, the use of roads & water and the establishment of camps. • Alternative sites or measures to minimise conflicts are to be considered.	• At least one month before mobilisation/ site establishment.	• Rhino	• Negotiation and signing of Land Use Agreement by the landowner. • Submit proof of positive Land Use agreement to PASA.

		• PASA to be informed of consultation for each drilling site.			
3	Well design				
3.1	To ensure well design and development method limits risk to groundwater resources.	• The design of each well is to take cognisance of local geology. • The well design is to provide for the sequential installation of casing and grouting to appropriates depths to isolate near-surface aquifers from target geology. • The well design is to provide for use of a locally appropriate drilling method. • The drilling method is to provide for the minimal use of the lowest hazard drilling fluids. • The drilling method is to provide for the containment of all mineral residues and drill cuttings/fluids.	• At least one month before site establishment.	• Rhino	• Application of industry standards and applicable best practice to well design. • Well Design Report submitted to PASA.

2.2 UNDERTAKING OF EXPLORATION

The Exploration phase requires the appropriate implementation of several actions in order to manage drilling and well testing in a manner that would achieve the objectives and result in the least risk.

2.2.1 Environmental objectives

The impact management objectives during the Exploration phase are to:

- Minimise disturbance to the ecological environment;
- minimise disturbance on the biophysical environment including the protection of soils, surface water and groundwater during exploration operations;
- Minimise disturbances to cultural and heritage sites;
- Minimise disturbance to current land uses, landowners and neighbouring activities; and
- Prevent the release of any natural gas;
- Drilling activities are to remain consistent with landowner agreements;
- Successful wells will be capped and the site reduced to manage the well head valve, the balance of the area will be reinstated and rehabilitated to a state equivalent to pre-disturbance levels and agreeable to the land owner.
- Unsuccessful wells will be plugged and the site and surrounds reinstated and rehabilitated to a state equivalent to pre-disturbance levels and agreeable to the land owner.
- Engage regularly with stakeholders to ensure transparent communication of relevant information and receipt of grievances
- Gather environmental information relevant to monitor potential impacts and inform assessment and management of future activities.

2.2.2 Actions

Management actions required during the undertaking of exploration are described in Table 2-3.

Table 2-3: Environmental Actions during Exploration

No	Objectives	Action Plan	Schedule	Responsibility	Requirements for Implementation
1.	Roles and Responsibilities				
1.1.	To assign roles and responsibilities for the implementation of the EMPR requirements.	• Rhino is ultimately responsible for implementation of and compliance with the EMPr by the entire workforce.	• Immediate, upon approval of the EMPr by PASA.	• Rhino	-
1.1.		• Rhino may delegate responsibility for implementation of and compliance with the EMPr to specific personnel.	• Immediate, upon appointment of Operator.	• Rhino	• Personnel appointments to include assignment of responsibility and liability for compliance with EMPr.
1.2.		• Rhino may assign responsibility for the implementation of the EMPr to the contracted drilling company. • Tender documents must include the EMPr and a requirement to provide for its implementation • All contractors are to be provided with a copy of the EMPr and sign their agreement of its conditions.	• Immediate, upon appointment of contractor.	• Rhino	• EMPr included with tender documents. • Contract to include assignment of responsibility and liability for compliance with EMPr. • Contractor to sign acknowledgement of EMPr commitments
1.3.		• Rhino is to nominate or appoint an independent Environmental Scientist responsible to undertake Environmental Site Assessments of 'unseen wells', perform monitoring and undertake audits.	• Immediate, upon approval of the EMPr by PASA.	• Rhino	• Appointment of independent Environmental Scientist/ Consultant

1.4.		• Rhino is responsible and liable for rehabilitation of all sites affected by exploration activities.	• Immediate, upon approval of the EMPr by PASA.	• Rhino	• Financial provision for rehabilitation made prior to receipt of EA. • Annual assessment of financial provision.
2.	Environmental Awareness				
2.1.	To ensure that all members of the exploration workforce are aware of their responsibilities towards environmental protection and the EMPr requirements.	• All personnel involved in the exploration project are to undergo environmental induction and awareness training. • All personnel are to sign a register acknowledging that have understood and will adhere to the Code of Conduct.	• Prior to commencement of work at a site. • On appointment of new personnel. • Repeat annually.	• Contractor SHEQ Manager	• Environmental Induction Programme including: ○ Environmental Awareness; ○ EMPr training; ○ Job specific E&S risk training. ○ E&S training records/registers • Register of signed Code of Conduct
2.2.	To ensure that all members of the workforce are aware of the environmental risks and consequences of their actions.	• Identification of environmental risks of jobs is to be included in the job-specific training.	• Prior to commencement of work at a site. • Repeat annually.	• Contractor SHEQ Manager	
2.3.	To ensure on-going environmental awareness by all members of the workforce.	• EMPr is to be available on site. • Code of Conduct is to be displayed on site. • Emergency Procedures are to be displayed on site.	• On-going during operations. • Repeat annually.	• Contractor SHEQ Manager	• EMPr document on site • Code of Conduct displayed • Emergency procedures displayed

3.	Occupational Health and Safety				
3.1.	To ensure the safety of workers involved in exploration.	• All activities are to be managed in compliance with the requirements of the Mine Health and Safety Act and Regulations thereto, as well as other legislation relevant to the activity.	• During Exploration.	• Contractor SHEQ Manager	• Health and Safety Plan
4.	Public Relations				
4.1.	To keep affected parties informed of developments.	• Feedback is to be given to landowners/registered I&APs of findings of each Phase of exploration.	• On completion of each Phase.	• Rhino and Principal Agent	• Feedback notices to all I&APS at relevant stages. • OR possible feedback meetings.
	To ensure adequate consultation with landowners/rights holders prior to exploration	• Undertake direct consultation with the owner/lawful occupier/ of land and rights holders where access is required for exploration. • Provide details of all planned operations, access requirements and project schedule.	• At least one month before site establishment.	• Rhino and Principal Agent	• Negotiations with landowner/lawful occupier and rights holder, concluding in a signed Land Use Agreement. • Regular and transparent engagement/feedback with land owners
4.3	To alleviate concerns of safety and security	• Access only permitted areas agreed upon with the landowners. • All personnel are to be provided with an identifiable uniform which should be carried on the person at all times. • All gates on private roads are to be closed if found closed and left open if found open.	• On appointment of personnel.	• Rhino and Contractor	• Land Use Agreement • Access and activities in line Land Use Agreement • Branded uniform or ID card.
4.4	To ensure public safety	• Drill sites may not be located within 200 m of a rural house and 500 m of an urban area.	• From site establishment	• Rhino and Contractor/	• Environmental Site Assessment • Site fencing

		• Drill sites must be demarcated and signed. • Skips and flare areas must be secured with a fence. • Drill sites with potential livestock or public access must be fenced off and access controlled. • Only authorised personnel with appropriate PPE may access the drill site.		Contractor SHEQ Manager	• Safety signage • PPE requirements
4.5	To minimise any disturbing nuisance to affected parties and neighbouring activities.	• Drill sites must be located in a position that minimises disturbance to current land user and receptors. • Driving on private roads not designated as site access roads must be prohibited, unless prior permission has been obtained from the landowner. • Noise and vibrations should be minimized where possible. • No activities should be permitted at the site after dark (between sunset and sunrise), except for security personnel guarding the development site. • Provide landowners and potentially affected parties with contact information of drilling site supervisor to allow for reporting of complaints/grievances.	• From site establishment. On-going during operations.	• Rhino/ Principal Agent and Contractor	• Environmental Site Assessment • Land Use Agreement • Complaints Forum/Grievance Mechanism, including record of investigation and resolution. • Feedback to be provided to complainants within reasonable time period.

		• Reported complaints/grievances are to be recorded in the incident reporting procedure. • Rhino must investigate complaints/grievances, take measures to resolve these (where required), and provide feedback.			
5.	Site Access				
5.1	To avoid conflicts with landowners or lawful occupiers.	• Undertake exploration activities at target exploration sites in a manner consistent with the Land Use Agreement. • Negotiate with landowner if site requirements change. • Landowners must be advised when exploration is complete and no further access is required.	• On-going during operations.	• Rhino and Principal Agent	• Land Use Agreement with the landowner. • Access and activities in line Land Use Agreement • On-going communication with the landowner. • Amend Land Use Agreement if site requirements change.
5.2	To not compromise security on farms or of residents and nearby neighbours	• Follow Farm Access Protocol developed by Agri-SA. • Access into any area by the exploration team without the permission of the landowner is to be prohibited. • All gates on the landowners' property are to be closed if found closed and left open if found open. • The landowner must be notified of visitors or sub-contractors requiring access to the drill site.	• On-going during operations.	• Principal Agent and Contractor	• Signing of Land Use Agreement by the landowner. • On-going communication with the landowner.

		• Any unknown persons on the property or suspicious activity is to be reported to the landowner. • Landowners must be advised when exploration is complete, and no further access is required.			
5.6	To avoid conflicts with holders of rights and servitudes.	• The owners of mineral rights and registered servitudes at target exploration sites are to be consulted regarding access and the establishment of drilling and associated infrastructure on site. • An understanding of rights holders access conditions, safety, security, environmental management, and rehabilitation is recommended. • Alternative sites or measures to minimise conflicts are to be investigated. • All parties must be advised when exploration is complete, and no further access is required. • PASA to be informed of consultation for each drilling site. • Exploration drill sites are not to be located in areas of active mining or within the 6-month planning horizon of the mine. • Exploration drill sites are not to be located in areas where underground mining has been completed.	• At least one month before mobilisation/ site establishment.	• Rhino and Principal Agent	• Signing of Agreement with Rights Holders, with consideration of health and safety, environmental liabilities. • Submit proof of positive agreement to PASA.

5.7	To ensure the most efficient road network	• Utilise existing farm roads where possible. • Limit road network to the fewest routes and shortest length possible. • Any new roads to align with farming activities and avoid environmental sensitivities. • No shortcuts (vehicle or foot traffic) should be created. • All roads used by exploration vehicles must be maintained. • Any roads not required by the landowner must be removed and rehabilitated at the termination of exploration.	• During drilling and testing	• Principal Agent and Contractor	• Signing of Land Use Agreement by the landowner. • Amend Land Use Agreement if site requirements change.
6	Biodiversity				
6.1	Prevention of loss of vegetation	• Existing vegetation cover at the drill site should be maintained throughout site establishment and drilling. Equipment and machinery should be placed onto the land surface without clearing or stripping vegetation. • A photographic record of the state of the terrestrial ecosystems prior to the commencement of site establishment must be kept for reference and rehabilitation monitoring purposes. • Activities in 'no-go' areas are strictly prohibited. Any damage to 'no-go' areas that takes place during the exploration phase must be	• Site establishment.	• Principal Agent and Contractor SHEQ Manager	• Implement site specific mitigation per Environmental Site Assessment • Prevent disturbances beyond the demarcated well site • Take photographic record of site before exploration commences

		rehabilitated immediately. A site-specific rehabilitation plan would need to be developed in this instance and a terrestrial ecologist consulted in this regard should such disturbance occur. • No firewood or medicinal plants may be harvested from natural areas.			
6.2	Management of invasive alien plants within the project site	• All alien invasive vegetation that colonises the construction site must be removed, preferably by uprooting. The contractor should consult the Independent Environmental Scientist/Consultant regarding the method of removal.	• On-going during operations.	• Contractor SHEQ Manager	• Control of alien invasive vegetation on well sites. • Implement site specific mitigation per Environmental Site Assessment
6.3	Protection and management of wildlife and species of conservation concern	• Education of workers/employees onsite focused on avoiding unnecessary harm to wildlife. • Contractor induction and staff/labour environmental awareness training needs must be identified and implemented through staff/contractor environmental induction training. • All workers/employees and contractors must undertake training on avoidance and conservation of local wildlife. • No wild animal may under any circumstance be hunted, snared, captured, injured, killed, harmed in	• On-going during operations.	• Contractor SHEQ Manager	• Implement site specific mitigation per Environmental Site Assessment. • Prevent disturbances beyond the demarcated well site

		any way or removed from the site. This includes animals perceived to be vermin (such as snakes, rats, mice, etc.). • Any fauna that are found within the construction zone must be moved to the closest point of natural or semi-natural habitat outside the construction area. • The handling and relocation of any animal perceived to be dangerous/venomous must be undertaken by a suitably trained individual. • All vehicles accessing the site should adhere to a low-speed limit (30km/h is recommended) to avoid collisions with susceptible species such as reptiles (snakes and tortoises). • No litter, food or other foreign material should be disposed of on the ground or left around the site or within adjacent natural areas and should be placed in demarcated and fenced rubbish and litter areas that are animal proof. • Ensure that workers accessing the site conduct themselves in an acceptable manner while on site, both during work hours and after hours.			
7.	Erosion Control				

7.1	To prevent soil erosion as a result of the development of access roads and drilling sites.	• Avoid, as far as possible, areas with soils that have high erosion potential. • Access routes on slopes are to follow natural contours of the land as far as possible. • Should it be necessary to access slopes where there is a risk of erosion, appropriate erosion controls (such as cross berms) are to be put in place. • Earthworks are to be limited to areas where site levelling is required for the placement of infrastructure. • Soil stripping is to be limited to areas where levelling is required for the development of site infrastructure. • Topsoil must be stripped prior to earth works, stockpiled separately from soil and protected from erosion. • Vegetation is not to be removed except in areas where site levelling is required. • Where vegetation is required to be cut in order to improve the access to an area, this is to be undertaken in accordance with the recommendations of the Environmental Site Assessment. • Soil that is removed during site levelling is to be placed up-gradient of the site to form a berm in order to divert storm water run-off around exposed soils surfaces.	• Site establishment.	• Rhino/Principal Agent and Contractor SHEQ Manager	• Implement site specific mitigation per Environmental Site Assessment

		• Soil and material stockpiles may not be placed within the 1:100-year floodline or 100 m from a watercourse. • All rubble, litter, foreign materials and waste products need to be removed from the construction area and disposed of at licensed local waste disposal/landfill facilities. Minimise additional disturbance by limiting the use of heavy vehicles and personnel during clean-up operations. • Any soil stockpiles/spoil material must spread evenly on the ground to match the natural slope. • All invasive alien plants and weeds must be removed from target sites, preferably by uprooting. • Any erosion features within the construction site must be stabilised. Compacted soil infill, rock plugs, gabions, excavation and reshaping or any other suitable measures can be used for this purpose. • Where significant soil compaction has occurred, the soil may need to be ripped in order to reduce its bulk density thus improving the chances that vegetation can become established at the site. Rip and / or scarify all disturbed and compacted areas of the construction site. The			

		Independent Environmental Scientist/Consultant, with the assistance of the Principal Agent, will specify whether ripping and / or scarifying is necessary, based on the site conditions. • Immediately after ripping and scarifying disturbed areas, about 300mm of topsoil must be applied. The thickness of the topsoil may be reduced at the instruction of the engineer. • The topsoil must be compacted to similar compaction levels as natural soils in the area. The engineer will provide detailed advice on this. • For seeding, the soil needs to be prepared to optimise germination. This is typically undertaken by hand hoeing to loosen the soil in the seedbed but should be firm enough to facilitate good contact between the seeds and the soil.			
8	Protection of Sensitive Sites				
8.1	To ensure adequate impact management with regard to features of high sensitivity.	• Demarcate sensitive features/ habitats/ individuals/ no-go areas at or near a drilling site and ensure that exploration infrastructure is established around these. • Access routes, drilling and camp sites are to be selected in consultation with	• After Environmental Site Assessment of target drilling sites. • At least one month prior to mobilisation/ site establishment.	• Contractor SHEQ Manager	• Implement site specific mitigation per Environmental Site Assessment • Prevent disturbances beyond the demarcated well site

		the Environmental Scientist, based on the outcomes of the Environmental Assessment. • Implement other site-specific mitigation as recommended by the Environmental Scientist/ Consultant or specialist.			• Take photographic record of site before exploration commences.
8.2	To minimise the area of disturbance.	• Access routes, drilling and camp site areas are to be demarcated using beacons/flags or demarcation tape. • Access routes, drilling and camp site areas are to disturb the minimum area possible. • Provision is to be made for the turning of vehicles within the demarcated area.	• Site establishment.	• Contractor SHEQ Manager	• Implement site specific mitigation per Environmental Site Assessment • Demarcation of active areas • Operations restricted to demarcated areas
8.3		• Sensitive areas or features adjacent to drilling sites are to be demarcated using beacons/flags or demarcation tape.	• Site establishment.	• Contractor SHEQ Manager	• Demarcation of sensitive areas
8.4		• Entry into areas (either on foot or by vehicle) outside of that which has been demarcated for use in exploration is prohibited without the permission of the landowner.	• On-going during operations.	• Contractor SHEQ Manager	• Environmental Induction Programme
8.5	Ensure compliance with relevant legislation and recommendations from SAHRA under	• Implement a chance to find procedures in case where possible heritage or palaeontological finds are uncovered (See Appendix C: and Appendix D:).	• On-going during operations.	• Contractor SHEQ Manager	• Demarcation of sensitive areas

	Section 34-36 and 38 of NHRA	• Any burial ground should be retained and avoided with a buffer zone of 50m as per SAHRA guidelines			
9	Water Resources				
	To ensure access to drilling water.	• Drilling water source is to be identified prior to site establishment. • Permission is to be obtained for the sourcing of water from this source. • Use produced water for drilling at depths below near-surface aquifers.	• Prior to site establishment.	• Rhino/Principal Agent and Contractor	• Ground truth the site and water sources before establishment.
9.2	To ensure legality of water use.	• Obtain permission from the landowner for access to the water resource and the placement of infrastructure. • Or finalise arrangements with the local water supply authority for the purchase of water.	• Prior to site establishment.	• Principal Agent and Contractor	• Signing of Land Use Agreement by the landowner. • Signing of Water Supply Agreement
9.3		• No water is to be abstracted from any watercourse for use in drilling activities without prior approval by the Department of Water and Sanitation (DWS), subject to acquiring a relevant Water Use License in terms of Section 21 (a) of the National Water Act for taking water from a water resource.	• On-going during operations.	• Principal Agent and Contractor	• Compare abstraction volumes against catchment limits. • Application for WUL, if required • Record volume of water abstracted/used per day.
9.4	To protect surface water resources from pollution during exploration.	• Ensure drilling and camp sites are not within 1:100-year flood line or 100 m of a water course or body.	• From site establishment and on-going during operations.	• Principal Agent and Contractor/ Contractor SHEQ Manager	• Confirm WUL requirements for minimum distances from

		• Ensure that soil, material, residue stockpiles as well as hydrocarbons and chemicals are not within 1:100 year floodline or 100 m of a watercourse. • All hydrocarbons and hazardous chemical substances on site are to be stored on or in impervious containers with a bund. • All drilling fluids, cuttings and residues are to be contained within waste skips. • Waste from the waste skips is to be disposed of at an appropriate, licensed facility. • A spill kit and treatment products, suitable for the nature and volume of hazardous materials on site, must be kept on site at all times. • Drilling sites on sloped areas should be protected by an up-gradient soil berm to divert clean water around the site. • Chemical toilets, or an equivalent alternative, are to be provided at the drilling and camp site area. These must be located further than 100 m from a water body. • Sewage from the toilets is to be disposed of at a recognised facility.			wetland with DWA: Regional office. • Environmental Site Assessment • Relocate target drill site/ access route to more appropriate location OR • Application for WUL, if required

		• Produced water must be stored in impervious containers and leakages must be prevented. • Produced water storage facilities may not be within 1:100 year flood line or 100 m of a water course or body.			
9.5	To protect groundwater resources from pollution during drilling and testing	• Non-hazardous and biodegradable drill fluid additives must be selected, where practicable. • Use the minimum volume of drilling fluid additives necessary. • Drilling fluids and cuttings must be managed aboveground and to prevent contact with soils and/or groundwater. • Case and grout exploration wells as soon as possible in the drilling process: o In wells at least the upper 100 m. • The casing must be competent and effective in preventing the: o ingress of water from the near surface aquifer into the well; o escape of produced water and gas from the borehole to the near surface aquifer. • Maintain the integrity of the case and grouting. • Suspend pumping if casing is known to have failed.	• On-going during operations	• Principal Agent and Contractor/ Contractor SHEQ Manager	• MSDS available for all drill fluid additives. • Record the type and volumes of drill fluid additives used in each hole.

		• Suspend drilling/testing if groundwater monitoring indicates impacts to groundwater quality and implement the emergency procedures.			
9.6	To ensure legality of water produced during well testing.	• Cumulative annual water production from all the wells and farmer's borehole is to remain within the limits of the General Authorisation for that water use. • Storage of produced water is to remain within the limits of the General Authorisation for that water use. • Or a WUL must be obtained.	• On-going during operations.	• Rhino/ Principal Agent	• Record volume of water produced per day (daily and cumulatively). • Record volume of water stored on site. • Compare proposed abstraction and storage volumes against catchment limits. • Application for WUL, if required
9.7	To protect surface and ground water resources from pollution by produced water stored during exploration well testing.	• Produced water must be stored in impervious containers/tanks located aboveground. Leakages must be prevented. • Storage facilities may not be within 1:100 year flood line or 100 m of a water course or body. • Produced water must be considered contaminated until proven otherwise by analysis at an independent laboratory. • Produced water quality indicators (e.g. TDS/EC) must be determined by hand-held meter to inform water management.	• On-going during operations.	• Rhino/Principal Agent	• Water storage facilities • Analysis of produced water • Safe disposal certificates.

		• The disposal or treatment of produced water, if required, must be via appropriately designed and licensed facilities. • Suspend pumping if monitoring indicate impacts on surface or ground water and implement the emergency procedures.			
9.8	To ensure legality of produced water storage and use.	• Combined storage of produced water on any farm property from exploration wells is to remain within the limits of the General Authorisation for that water use • Or a Water Use Licence must be obtained. • Storage of produced water for reuse or disposal is to be registered with the DWS if volumes may exceed limits.	• On-going during operations.	• Rhino/Principal Agent	• Monthly records must be kept of the quality of water abstracted at each well. • Records must be kept of the volume of produced water used for any activity. • Records must be kept of the daily volume of water disposed and location. • Proof of registration of storage with DWS must be kept.
9.9	To protect water users from water produced during exploration well testing.	• The use or release of produced water may only be undertaken if the water quality conforms to the standards set by the DWAF Water Quality Guidelines (1996) or SANS standards for that proposed use. • Wastewater is to be subject to chemical analysis to determine waste assessment/classification.	• On-going during operations.	• Rhino/Principal Agent	• Analysis of produced water – comparison to current DWS standards for a particular use. • Wastewater to be assessed/classified where necessary to determine management requirements. • Wastewater disposal to appropriate facilities.

		• The disposal or treatment of produced water, if required, must be via appropriately licensed facilities.			
9.10	To protect watercourses and drainage lines from damage due to exploration.	• Exploration vehicles are not to cross watercourses, wetland or black vertic soils, except on established roads. • If a reasonable assessment concludes that use of a road by exploration vehicles will damage the soils, bed or bank of the area then exploration vehicles should not use that access route. • The alteration of riverbanks to allow access to watercourses is to be prohibited.	• Prior to site establishment and on-going during operations.	• Rhino/Principal Agent	• Environmental Site Assessment • Relocate target drill site/ access route to more appropriate location
10	Spill Prevention and Clean Up				
	To contain spillage of hazardous chemical substances and prevent the contamination of soils or water resources	• Bunded areas are to be created for the storage of all hazardous chemical substances (fuel, oil, lubricants and laboratory chemicals). • Mixing and / or decanting of all chemicals and hazardous substances must take place on an impermeable surface. • Vehicle maintenance should not take place on site unless a specific bunded area is constructed for such a purpose • Temporary bunds are to include an impervious floor (e.g. plastic sheeting) and earth/sandbag walls.	• Site establishment and on-going during operations.	• Contractor and Contractors SHEQ Manager	• Environmental Induction Programme • Bunds and impervious surfaces

		• Bund should have capacity to contain 110% of the contents contained within the bund. • Hazardous material to be stored in appropriate drums on bunded sites. • Sludge ponds are to be lined with impervious plastic sheeting. • Produced water must be stored in impervious containers and leakages must be prevented. • Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at an appropriate registered site.			
10.2		• Major repair work to vehicles and machinery is to take place off-site. • Emergency repair /maintenance/ refuelling / oil changes to be done over an impervious surface (e.g. plastic sheeting). • Drip trays to be placed below all vehicles, or containers which leak oil.	• On-going during operations.	• Contractors SHEQ Manager	• Drip trays
10.3	To clean up and remediate spillages of hazardous chemical substances.	• An emergency spill response procedure must be formulated for the site for the containment and clean-up of spillages of, and staff are to be trained in spill response.	• Prior to site establishment.	• Contractors SHEQ Manager	• Emergency Spill Procedure • Staff trained to implement the procedure
10.4		• Necessary measures for the implementation of the Emergency Spill Procedure are to be in place from	• Site establishment. • Within 48 hrs of detection	• Contractors SHEQ Manager	• Purchase Spill Kit and Treatment Products

		site establishment. Including a Spill Kit and Treatment Products • Hydrocarbons spillages are to be treated in situ using a commercially available bioremediation product or treated as hazardous waste.			• Staff trained to implement the Emergency Spill Procedure. • Contact details for specialist contractors in case of substantial emergency.
10.5		• Personnel responsible for the handling of hazardous chemical substances are to be trained on the implementation of the Emergency Spill Procedure as part of the Job Specific Training.	• Prior to the commencement of work on site.	• Contractors SHEQ Manager	• Environmental Induction Programme
10.6		• Spillages to be reported as environmental incidents.	• Within 24 hrs of detection	• Contractors SHEQ Manager	• Environmental incident reporting
11	Air Quality Protection				
	To reduce the magnitude and extent of dust dispersion.	• Exploration vehicles are to travel on gravel at speeds that reduce the potential for entrained dust production (less than 40 km/hr on private gravel roads).	• On-going during operations.	• Contractors SHEQ Manager	• Part of training and awareness during environmental induction programme
11.2	To minimise the release of greenhouse gases.	• Exploration wells are to be closed in when no drilling work is being undertaken.	• On-going during operations.	• Principal Agent/Contractor	• Site diary to reflect closed in periods.
11.3		• Exploration wells which will not be used during production are to be sealed with cement once exploration work has been completed.	• Rehabilitation.	• Principal Agent	• Well Closure Plan • Well Closure Report

11.4		• All natural gas produced during exploration is to be combusted. • Ensure that the flare has high availability (>95%) throughout exploration well testing and operates a high destruction efficiency (target 99%), • No methane gas may be intentionally vented to atmosphere.	• From detection of gas (assuming sufficient gas volumes).	• Principal Agent and Contractor	• Site diary to reflect gas encounters. • Flaring of all gas. • Flare to be provided with fence and safety signage
11.5		• Exploration wells that have production potential are to be capped with a well-head, plinth and gas monitoring equipment.	• On-going during operations	• Principal Agent	• Well Development Plan • Site diary to reflect well completion and sealing in.
11.6		• On abandonment of a site or exploration area for any reason, all wells must be sealed with cement.	• Rehabilitation.	• Principal Agent	• Well Closure Plan • Well Closure Report
12	Solid Waste Management				
	To ensure the appropriate disposal of solid waste to prevent the contamination of soils and water resources.	• Separate, marked receptacles are to be provided for the storage of hazardous and general wastes at the waste generation points. • Littering is not to be permitted. • The drilling and camp sites are to be inspected and cleared of all waste at least weekly. • Measures for waste avoidance, minimisation, reuse and recycling must be implemented.	• Site establishment.	• Contractors SHEQ Manager	• Waste Containers
12.2		• All items that have come into contact with any hazardous chemical	• On-going during operations.	• Contractors SHEQ Manager	• Waste assessment/classification

		substance (including fuels/oils/greases/laboratory chemicals, sludge) are to be managed as hazardous waste. • All other substances are to be managed of as general waste. • Identify opportunities for the recycling of wastes.			where necessary to determine management requirements.
12.3		• Drill cuttings, sediments and sludges are to be subject to chemical analysis to determine waste assessment/classification. • Inert wastes may be disposed locally subject to appropriate permissions. • General waste is to be taken to a recognised landfill site licensed to dispose of the waste. • Hazardous waste is to be disposed of at appropriately licensed facilities.	• On-going during operations, and at rehabilitation.	• Contractors SHEQ Manager	• Waste assessment/classification where necessary to determine disposal requirements. • Agreement with facility operator or landowner for local disposal/use. • Identification of suitable waste sites. • Waste disposal to appropriate facilities • Obtain safe disposal certificates for hazardous wastes.
13	Fire Prevention				
13.1	To reduce the potential for fire on site.	• A firebreak must be established around each drill site for the autumn/winter months. • Gas flaring must be done in manner that poses little risk of igniting the vegetation. • No fires at the drilling site.	• Prior to the commencement of work on site and on-going during operations	• Contractors SHEQ Manager	• Environmental Induction Programme

		• No smoking within 100 m of the drilling site. • Smoking only permitted in a dedicated smoking zone with facilities. • Disposal facilities for cigarettes are to be provided at the camp site. • Fires at the camp site, except within the cooking fireplace, are to be prohibited. • Firewood must be purchased and may not be collected locally.			
13.2	To minimise the damage caused by an accidental fire	• An Emergency Fire Procedure is to be put in place for the containment and extinguishing of accidental fires. • The procedure must include contact details for local fire responders (municipal and farmers). • Personnel are to be trained on the implementation of the Emergency Fire Procedure as part of the Job Specific Training.	• Prior to site establishment. • Prior to the commencement of work on site.	• Contractors SHEQ Manager	• Emergency Fire Procedure • Environmental Induction Programme
13.3		• Necessary measures for the implementation of the Emergency Fire Procedure are to be in place from site establishment. Including fire-extinguishers and fire beaters.	• Site establishment.	• Contractors SHEQ Manager	• Fire-extinguishers and fire beaters. • Contact details available on site for landowner, neighbours, fire protection association and emergency services.

13.4		• Rhino to maintain a general insurance liability in case of any unlikely fire damage to surrounding assets.	• Prior to the commencement of work on site.	• Contractor	• Insurance Policy to the satisfaction of the landowner.
14	Sewage and Effluent Management				
	To manage sewage in a manner that ensures the protection of soils and water resources.	• If built infrastructure is not in place then chemical toilets, or an equivalent alternative, are to be provided at the drilling and camp site area. • Sewage from the toilets is to be disposed of at a recognised facility.	• Site Establishment.	• Contractors SHEQ Manager	• Contractor to provide chemical toilets. • Safe disposal certificates.
14.2	To manage grey water in a manner that ensures the protection of soils and water resources.	• Use is to be made of existing facilities where available. Permission needs to be obtained from the landowner for use of such facilities.	• Prior to Site Establishment.	• Principal Agent/ Contractor	• Signing of land use agreement by landowner.
14.3		• Grey water may not be disposed directly into a water course. • In the absence of existing facilities. A French Drain is to be constructed for the management of effluent from the camp washing facility, situated as far as possible, but not less than 100 metres, from any stream, river, pan, dam or borehole. • Only domestic type wash water shall be allowed to enter this drain and any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for	• Site Establishment.	• Contractors SHEQ Manager	• - Water Monitoring Protocol

		resale or for appropriate disposal at a recognised facility.			
15	Monitoring and Maintenance				
	To monitor use of drilling water and additives.	• Record the source of water to be used for drilling. • Record the volume of water abstracted from each source. • Record the volume of water added to the drill hole. • Record the type and volume of drill fluid additives used.	• Daily	• Contractor's SHEQ Manager	• Water Monitoring Protocol • Daily log of water abstraction, use, drill fluids and additives used in drilling.
15.2	To monitor water production from test wells.	• The volume of any produced water must be recorded for each well. • Daily and cumulative totals of produced water per well must remain below GA limits.	• Daily	• Contractor's SHEQ Manager	• Water Monitoring Protocol • Record volume of water produced per day. • Record cumulative volume produced from a borehole.
15.3		• The quality of produced water must be determined by analysis at an independent and accredited laboratory. • Produced water quality indicators (e.g. TDS/EC) must be determined by hand-held meter to inform water management.	• Weekly, until quality is established. Quarterly thereafter. • At least hourly, or when geology or appearance of water changes	• Contractor's SHEQ Manager	• Water Monitoring Protocol • Water sampling as required. • Analysis at an accredited laboratory. • Check quality indicators by hand held meter.
15.4		• Groundwater levels in wells and all 3rd party boreholes within 500 m of exploration well test site.	• Weekly until level is established. Quarterly thereafter.	• Contractor's SHEQ Manager	• Record the depth to water in boreholes
15.5		• Volume of produced water stored on site to be monitored.	• Weekly	• Contractor's SHEQ Manager	• Water Monitoring Protocol

		• Volume of all reuse, treatment, disposal or release of produced water to be monitored.			• Record volume of produced water stored. • Record volume of produced water per use.
15.6	To detect changes to surface water resources	• Monitor water quality at all surface water resources within 500 m of the drilling site before, during and after exploration.	• Water quality: prior to site establishment, then monthly, and for 1 quarter after completion.	• Contractor's SHEQ Manager	• Water Monitoring Protocol • Water sampling as required. • Analysis at an accredited laboratory.
15.7	To detect changes to groundwater resources	• Undertake a hydrocensus of all active water producing boreholes within 500 m of each well. • Monitor groundwater levels and quality in all known water producing boreholes before, during and after exploration. • Drill at least one downstream groundwater monitoring borehole for every 2 well (where holes are less than 1 km apart). • Monitor produced water quality before and during any use, treatment or discharge of the produced water. • Appoint a geohydrologist to review Water Monitoring Protocol and results at least annually. • The Water Monitoring Protocol is to include emergency procedures to be implemented should a groundwater impact be identified.	• Water quality: prior to site establishment, then monthly, and for 1 quarter after completion. • Water level in boreholes: weekly. • Produced water quality: weekly.	• Contractor's SHEQ Manager	• Water Monitoring Protocol • Hydrocensus and water sampling as required. • Record the depth to water in boreholes. • Analysis at an accredited laboratory.

2.3 DECOMMISSIONING AND REHABILITATION

Environmental objectives and actions during while undertaking the decommissioning and rehabilitation phase include:

2.3.1 Environmental objectives

The primary decommissioning and rehabilitation objectives are to ensure that exploration decisions and actions throughout operations, and specifically during decommissioning, enable a condition approximating the pre-exploration condition or better to be achieved at any site impacted by an exploration activity.

Specific impact management objectives during decommissioning and rehabilitation phase are to ensure:

- Successful wells will be capped and the site reduced to manage the well head valve, the balance of the area will be reinstated and rehabilitated to a state equivalent to pre-disturbance levels and agreeable to the land owner;
- Unsuccessful wells will be plugged and the site and surrounds reinstated and rehabilitated to a state equivalent to pre-disturbance levels and agreeable to the land owner;
- Decommissioning and rehabilitation activities are to remain consistent with landowner agreements;
- Engage regularly with stakeholders to ensure transparent communication of relevant information and receipt of grievances; and
- Gather environmental information relevant to monitor potential impacts and inform assessment and management of closure activities.

2.3.2 Actions

Management actions required during the undertaking of Decommissioning and Rehabilitation are described in Table 2-4 below.

Table 2-4: Environmental Actions during Decommissioning and Rehabilitation

No	Objectives	Action Plan	Schedule	Responsibility	Requirements for Implementation
1	Decommissioning and Rehabilitation				
1.1.	To return land to a condition as close as is reasonably possible to pre-exploration land use potential.	• Remove all waste, temporary structures, equipment and surplus materials upon completion of exploration activities. • Waste is to be disposed of at a recognised facility. • Requests from landowners to retain infrastructure created during exploration activities may be considered. • Cap wells that will be used in future with a well head immediately on completion of drilling activities. • Seal wells that will not to be used in future with cement immediately on completion of exploration activities. Such seals must terminate at least 1 m below	Within 2 weeks of completion of exploration activities at any particular site.	• Contractor and Contractor's SHEQ Manger	• Take photographic record of site before exploration. • Develop and implement a rehabilitation plan. • Take photographic record of site after rehabilitation. • Landowners' agreement on status of rehabilitation.

		ground surface when in agricultural lands. • Compacted surfaces on temporary access roads, camp and drilling site are to be scarified to a depth of 300 mm. • Areas contaminated with hydrocarbons are to be treated in situ using a commercially available bioremediation product. • Soil is to be returned to areas from where it was removed, and the land shaped to its original form. • Areas with French drains should be loosely compacted, levelled and covered with topsoil 100 mm above ground level. • Waste is to be removed from site and disposed of at a recognised facility. • Appropriate, locally adapted vegetation should be established on all disturbed sites (unless the site is located in croplands). • Prevent the establishment of alien and invasive plants. • Obtain landowners' agreement on status of rehabilitation before applying to PASA for site closure.			

1.2.	To ensure financial provision for rehabilitation for closure and rehabilitation as well as consequential pollution or damages	• Applicant to make financial provision as required in terms of the MPRDA. • Applicant to also maintain Public Liability Insurance to cover all damages and pollution from exploration.	Prior to commencement of any exploration.	• Rhino	Financial Provision lodged with PASA. Updated as required. Public liability insurance, including cover for fire damage and pollution liability. Updated based on extent and risk of operations.
1.3.	To monitor and maintain rehabilitated sites	• The establishment of vegetation in denuded areas, including invasion by alien vegetation, is to be monitored.	Every 6 months, for at least 1 year after cessation of activities.	• Rhino	Site Visit by Environmental Scientist/Consultant.
1.4.		• Alien and invasive vegetation is to be physically/chemically removed (depending on the species) from rehabilitated areas.	Every 6 months, for at least 1 year after cessation of activities.	• Rhino	Site Visit by Environmental Scientist/Consultant.
1.5.		• The erosion of areas disturbed during drilling is to be monitored. • Eroded areas must be repaired and measures put in place to limit further erosion.	Every 6 months, for at least 1 year after cessation of activities.	• Rhino	Site Visit by Environmental Scientist/Consultant.
1.6.		• Where vegetation has not established within 6 months of rehabilitation, a locally occurring seed mix/plants and fertilizers are to be used to augment vegetation recovery as required.	Every 6 months, for at least 1 year after cessation of activities.	• Rhino	Site Visit by Environmental Scientist/Consultant.

2	Closure				
2.1	To obtain a Closure Certificate for non-prospective areas of the ER.	• Prepare well-specific closure plans • Prepare application for a closure certificate in terms of MRPDA and NEMA requirements.	On completion, cessation or abandonment of exploration activities.	• Rhino	• Well-specific closure plan. • Closure application to PASA/DMRE in terms of Section 43 of the MPRDA

3. MONITORING AND AUDITING

The following sections outline the requirements for monitoring and for the reporting compliance with the EMPr

3.1 MONITORING

The purpose of the monitoring programmes is to report on any changes that occur to the various environmental aspects, to review the operation's impact on these environmental aspects and to recommend changes that may be required to the operation and management actions being implemented. Monitoring required for the Project is specified in the Action Plans and summarised in Table below

3.1.1 Functional requirements of monitoring programmes

As a general approach, Rhino will ensure that all monitoring programmes comprise the following:

- a formal procedure;
- use of appropriately calibrated equipment;
- the date, time and monitoring point of each sample is to be recorded;
- where samples require analysis these will be preserved according to laboratory specifications;
- accredited laboratories will be used to undertake sample analyses and/or internal laboratory results will periodically be checked by independent and accredited laboratories;
- analysis, where relevant, must be carried out in accordance with methods prescribed by the South African National Standards, in terms of the Standards Act, 2008 or similar;
- monitoring points and parameters to be monitored will be identified in consultation with a specialist in the field and/or the relevant authority
- if necessary, following the initial monitoring results, certain parameters may be removed from the monitoring programme in consultation with a specialist and/or the relevant authority;
- monitoring data will be stored in an appropriate database;
- data will be interpreted and reports on trends in the data will be compiled on a regular basis; and
- both the data and the reports will be kept on record for the duration of operations.

3.1.2 Monitoring plan

A specific monitoring plan, including relevant details for each "identified well" must be prepared to specify the locations of monitoring points and any other site-specific requirements. The overarching requirements for monitoring during exploration well drilling are detailed in Table 3-1 below.

Table 3-1: Monitoring activities and specifications

Monitoring activity	Specifications	Frequency
Photographic records	• View of the site and all relevant infrastructure and features	• Pre-exploration drilling, during each phase and post decommissioning and rehabilitation.
Surface water	• Monitor water quality at all surface water resources within 500 m of the drilling	• Water quality: prior to site establishment, then monthly during activity, and for 1 quarter after completion.

	site before, during and after exploration. • Water Monitoring Protocol to detail sampling locations, methods and analytical parameters and methods, as well as comparative standards. • Records to be kept.	• Extend monitoring duration if impacts are detected. • Update Water Monitoring Protocol as required.
Groundwater	• Hydrocensus and groundwater sampling (depth and quality) within 500m of well sites. • Monitor water (depth and quality) at all boreholes within 500 m of well sites before, during and after exploration. • Water Monitoring Protocol to detail sampling locations, methods and analytical parameters and methods, as well as comparative standards. • Records to be kept.	• Water quality: prior to site establishment, then monthly during activity, and for 1 quarter after completion. • Extend monitoring duration if impacts are detected. • Update Water Monitoring Protocol as required.
Produced water	• Produced water quality indicators (e.g. TDS/EC) must be determined by hand-held meter to inform water management. • Quality of produced water must be determined by analysis at an independent and accredited laboratory. • Monthly records must be kept of the volume of water abstracted at each well. • Records must be kept of the volume of produced water used for any activity. • Records must be kept of the volume of produced water disposed. • The use or release of produced water may only be undertaken if the water	• Hand-held indicators - at least hourly, or when geology or appearance of water changes. • Laboratory analysis – of one aggregated sample, or when geology or appearance of water changes. • Update Water Monitoring Protocol as required.

	quality conforms to the standards set by the DWAF Water Quality Guidelines (1996) or SANS standards for that proposed use. • Water Monitoring Protocol to detail sampling locations, methods and analytical parameters and methods, as well as comparative standards. • Records to be kept.	
Vegetation	Vegetation establishment and alien and invasive plants	Post-rehabilitation and one year later.

3.2 AUDITING

The following auditing programme (Table 3-2)will be put in place for the Project:

Table 3-2: Auditing Programme

Frequency of Monitoring	Monitoring	Responsibility	Reporting Requirements	Report Submission
Daily	Visual inspection of compliance with conditions of EMPr.	Contractor's SHEQ Manager	Reporting of environmental incidents	Environmental incidents to be reported to Principal Agent, and PASA if reportable per NEMA.
Weekly	Internal audit using EMPr compliance checklist	Contractor's SHEQ Manager	E&S Site Memo/EMPr checklist	To the Principal Agent
Monthly	Internal EMPr compliance audit	Contractor's SHEQ Manager.	E&S compliance/non-compliance reporting	To the Principal Agent and submitted to PASA
Quarterly/post-decommissioning	External audit of compliance with and adequacy of the EMPr	Environmental Scientist/Consultant	Environmental Audit Report in terms of Appendix 7 of the EIA Regulations, 2014.	Report submitted to PASA

4. ENVIRONMENTAL AWARENESS PLAN

The successful implementation of the EMPr is dependent on training and awareness of all personnel involved in the exploration. Rhino will commit to informing all employees and contractors of environmental risk which may result from the undertaking of exploration through an Environmental Awareness Plan. The purpose of the environmental awareness plan is to ensure that management and all personnel understand the general environmental requirements of the activities and localities in which work is undertaken.

All Rhino employees and contractors must be subjected to environmental awareness training before commencing with exploration related work. Rhino must implement an Environmental Awareness Plan that:

- Promotes general environmental awareness amongst all employees;
- informs all personnel of environmental policies, procedures and programmes applicable to the exploration activities;
- provides general training on the implementation of environmental management actions; and
- provides job specific environmental training to ensure the protection of the environment.

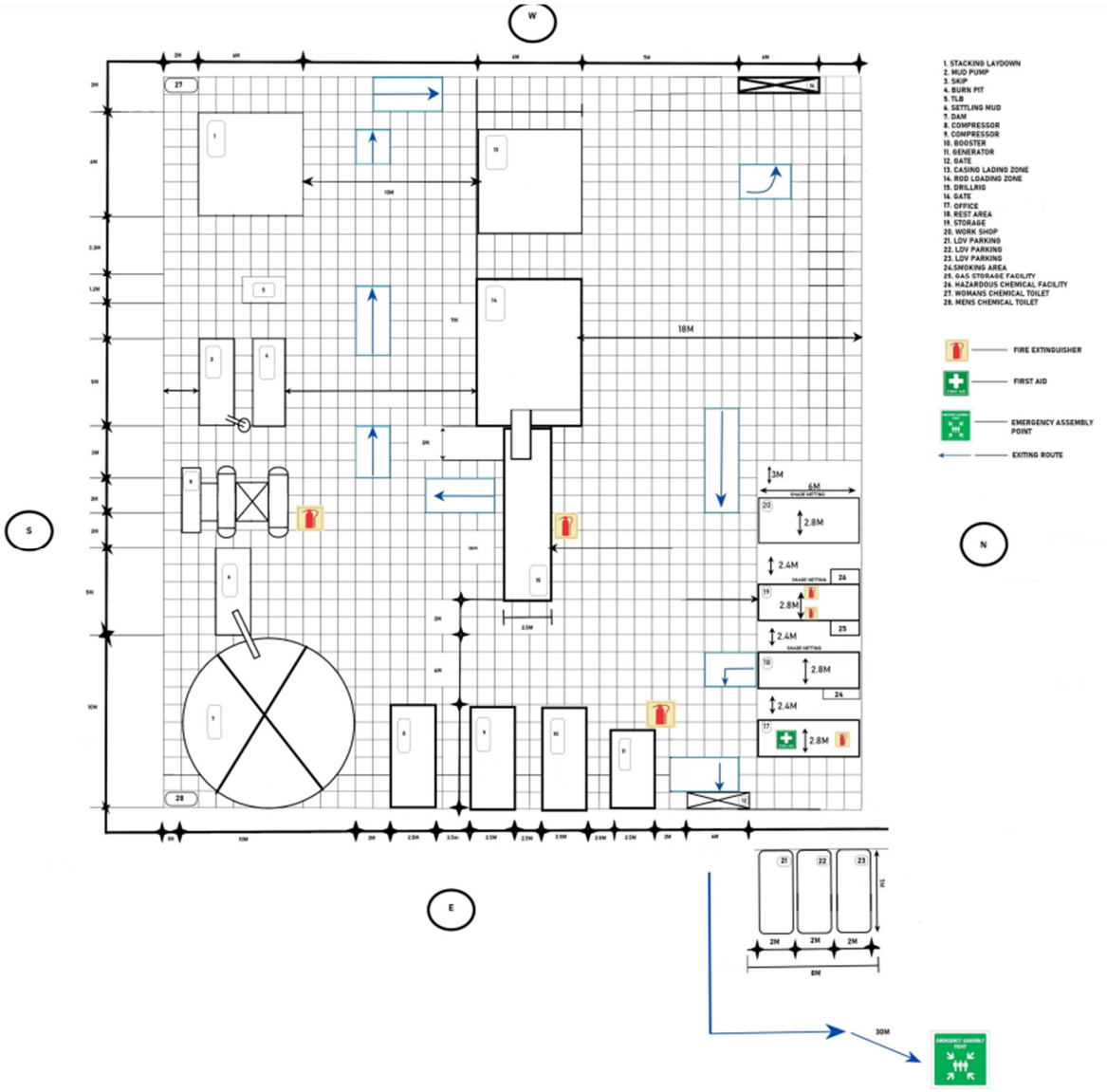
The training arising from the Environmental Awareness Plan must include:

- environmental induction of new employees;
- code of conduct signed by all inducted employees;
- identification of environmental risks associated with each job and job specific training on addressing these risks; and
- training on the implementation of emergency procedures where necessary.

Rhino is to ensure that an Environmental Awareness Plan is prepared and that the necessary resources are available implement. Records should be kept of all environmental awareness training.

APPENDIX A: CURRICULA VITAE (INCLUDING REGISTRATIONS) OF THE PROJECT TEAM

APPENDIX B: LOCALITY PLANS FOR IDENTIFIED SITES (INCL. ENVIRONMENTAL SENSITIVITIES)



Typical drill site layout

APPENDIX C: PALAEONTOLOGICAL CHANCE FIND PROTOCOL

APPENDIX D: HERITAGE CHANCE FIND PROTOCOL

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