



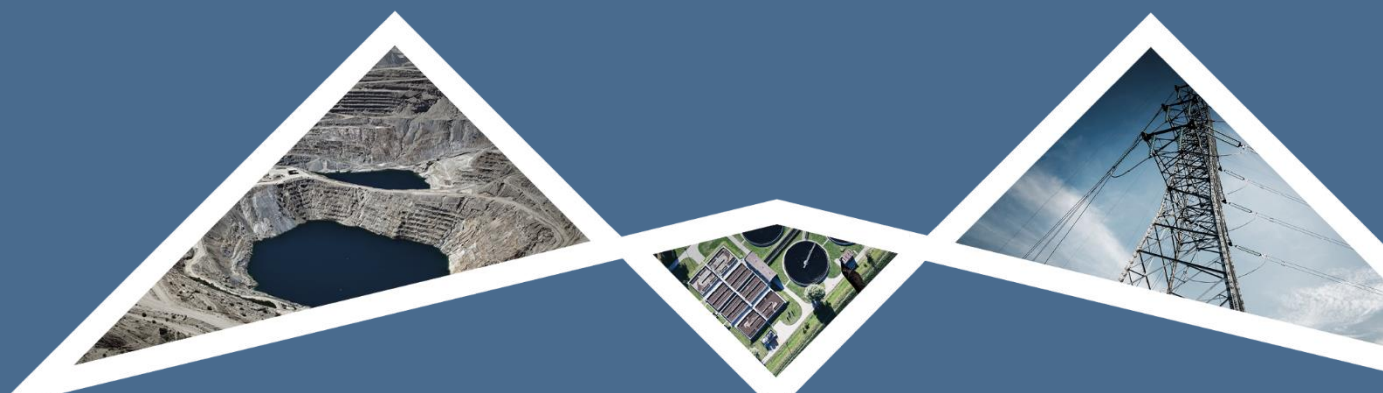
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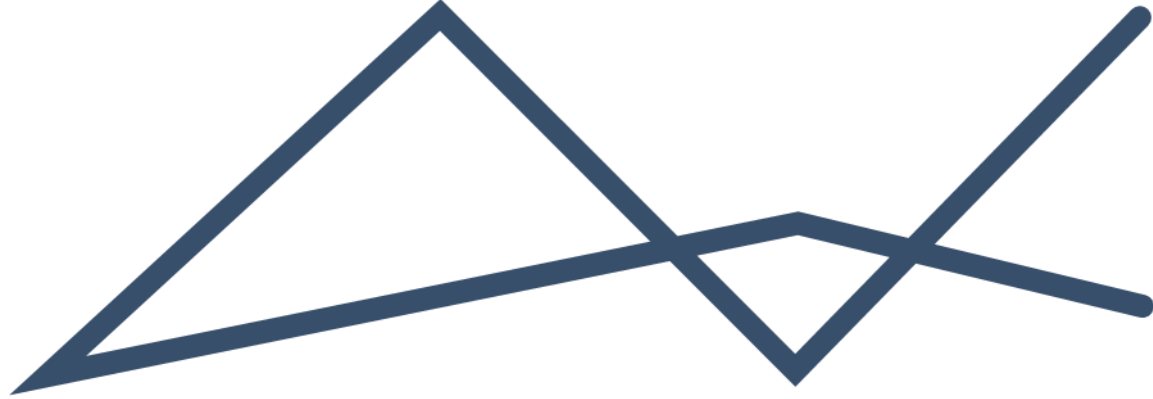
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FINAL REHABILITATION, DECOMMISSIONING AND CLOSURE PLAN, INCORPORATING AN ANNUAL REHABILITATION PLAN AND ENVIRONMENTAL RISK ASSESSMENT

PROPOSED TOSACO ENERGY BLOCK 1 EXPLORATION RIGHT
TOSACO ENERGY (PTY) LTD

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1 INTRODUCTION

Tosaco Energy (Pty) Ltd (hereafter Tosaco) has applied for an Exploration Right (ER) for offshore oil and gas in Block 1, located off the West Coast of South Africa. Environmental Impact Management Services (Pty) Ltd (EIMS) has been appointed by Tosaco to prepare and submit an application for Environmental Authorisation (EA) as per the requirements of the Environmental Impact Assessment (EIA) Regulations, 2014, as amended, promulgated under the National Environmental Management Act (Act No. 107 of 1998- NEMA) and the requirements of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002 – MPRDA).

In accordance with Section 24P of the NEMA the Applicant must, before the Minister responsible for mineral resources issues the EA, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts. This Final Rehabilitation, Decommissioning and Closure Plan (FRDCP) aims to meet this requirement and has been prepared in accordance with the requirements of the NEMA Financial Provisioning Regulations (2015) (NEMA GNR 1147).

It should be noted that it is anticipated that the activities will have a limited impact on the receiving environment. The impacts will be limited to the planning and operational phases and it is not anticipated that there will be any need for closure or rehabilitation once the 3D surveys have been concluded. As such, closure of the project will be limited to the conclusion of the physical 3D surveys to be undertaken in the target area. This will mainly relate to the following impacts assessed as part of the operational phase:

- Waste generation and disposal; and
- Water contamination and pollution.

Residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for closure, decommissioning and rehabilitation actions. The overall closure objective will be to ensure that the post closure environment aligns with the pre-development. Therefore, no financial provisions apply to this application.

According to the regulations, financial provision must be made for rehabilitation and remediation; decommissioning and closure activities at the end of prospecting, exploration, mining or production operations; and remediation and management of latent or residual environmental impacts which may become known in the future. In order to address these requirements, this document includes an annual rehabilitation plan, a final rehabilitation, decommissioning and mine closure plan, and an environmental risk assessment report.

Table 1 below lists the specific requirements that must be contained in each of the three plans as per the NEMA GNR 1147 Appendices 3, 4 and 5, as well as the associated section in this report where each requirement is addressed.

Table 1: NEMA GNR 1147 Appendix 3, 4 and 5 Requirements and Associated Sections Where They Are Addressed

No.	Requirement	Relevant Section
Annual Rehabilitation Plan – Appendix 3		
3 (a)	details of the person or persons that prepared the plan, and timeframes of implementation of the current, and review of the previous rehabilitation activities;	Section 2
3 (b)	the pertinent environmental and project context relating directly to the planned annual rehabilitation and remediation activity;	Section 3.1.1
3 (c)	results of monitoring of risks identified in the final rehabilitation, decommissioning and mine closure plan with a view to informing rehabilitation and remediation activities;	To be confirmed after the first implementation of



No.	Requirement	Relevant Section
		the Annual Rehabilitation Plan.
3 (d)	an identification of shortcomings experienced in the preceding 12 months;	Section 4
3 (e)	details of the planned annual rehabilitation and remediation activities or measures for the forthcoming 12 months;	Section 4
3 (f)	a review of the previous year's annual rehabilitation and remediation activities;	Section 4
3 (g)	costing;	Section 4
Final Rehabilitation, Decommissioning and Mine Closure Plan – Appendix 4		
3 (a)	details of the person or persons that prepared the plan;	Section 2
3 (b)	the context of the project, including material information and issues that have guided the development of the plan, an overview of the environmental context, the social context regarding closure activities and post-mining land use, stakeholder issues and comments, and the mine plan and schedule for operations;	Section 3.1
3 (c)	findings of an environmental risk assessment leading to the most appropriate closure strategy;	Section 3.2
3 (d)	design principles, including the legal and governance framework, the closure vision, objectives and targets, alternative closure and post closure options, a motivation for the preferred closure action, details of the closure and post closure period, details associated with any on-going research on closure options, and details of assumptions made to develop closure actions;	Section 3.4
3 (e)	a proposed final post-mining land use;	Section 3.5
3 (f)	closure actions required;	Section 3.6
3 (g)	a schedule of actions for final rehabilitation, decommissioning and closure;	Section 3.6
3 (h)	an indication of the organisational capacity that will be put in place to implement the plan, including the organisational structure;	Section 3.7
3 (i)	an indication of gaps in the plan;	Section 3.8
3 (j)	relinquishment criteria for each activity or infrastructure in relation to environmental aspects with auditable indicators;	Section 3.9
3 (k)	the closure cost estimation procedure;	Section 3.10
3 (l)	monitoring, auditing and reporting requirements which relate to the risk assessment, legal requirements and knowledge gaps;	Section 3.11
3 (m)	motivations for any amendments made to the final rehabilitation, decommissioning and mine closure plan, given the monitoring results in the previous auditing period and the identification of gaps as per 2(i).	Section 3.11
Environmental Risk Assessment – Appendix 5		
3 (a)	details of the person or persons that prepared the plan;	Section 2



No.	Requirement	Relevant Section
3 (b)	details of the assessment process used to identify and quantify the latent risks;	Section 5.1
3 (c)	management activities;	Section 5.2
3 (d)	costing;	Section 5.2
3 (e)	monitoring, auditing and reporting requirements.	Section 5.2

2 DETAILS OF THE SPECIALIST

The details of the professionals who contributed to the preparation of the annual rehabilitation plan (ARP), final rehabilitation, decommissioning and mine closure plan (FRDCP) and environmental risk assessment (ERA) are provided in Table 2.

Table 2: Details of Specialist¹

Name	Role	Qualifications/ Experience	Professional Registrations
GP Kriel	Environmental Scientist / Project Manager / EAP	M.Env.Sci. ~14 years environmental consulting experience.	South African Council for Natural Scientific Professions- Registered Professional Natural Scientist (Environmental Science 400202/09) Water Institute of Southern Africa - Member
Liam Whitlow	Environmental Scientist	BSc Hons Environmental Management. ~20 years environmental consulting experience.	South African Council for Natural Scientific Professions- Registered Professional Natural Scientist (Environmental Science 400148/08)

3 FINAL REHABILITATION, DECOMMISSIONING AND CLOSURE PLAN (FRDCP)

According to the NEMA GNR 1147 the objective of the final rehabilitation, decommissioning and closure plan, is to identify a post-exploration land use that is feasible through-

- Providing the vision, objectives, targets and criteria for final rehabilitation, decommissioning and closure of the project;
- Outlining the design principles for closure;
- Explaining the risk assessment approach and outcomes and link closure activities to risk rehabilitation;
- Detailing the closure actions that clearly indicate the measures that will be taken to mitigate and/or manage identified risks and describes the nature of residual risks that will need to be monitored and managed post closure;
- Committing to a schedule, budget, roles and responsibilities for final rehabilitation, decommissioning and closure of each relevant activity or item of infrastructure;
- Identifying knowledge gaps and how these will be addressed and filled;

¹ According to the 2015 Financial Provisioning Regulations "Specialist" is defined as "specialist" means an independent person or persons who is qualified by virtue of his or her demonstrable knowledge, qualifications, skills or expertise in the mining, environmental, resource economy and financial fields.



- g) Detailing the full closure costs for the life of project at increasing levels of accuracy as the project develops and approaches closure in line with the final land use proposed; and
- h) Outlining monitoring, auditing and reporting requirements.

This section of the report aims to achieve these objectives.

3.1 PROJECT AND ENVIRONMENTAL CONTEXT

This section aims to provide context and focus attention on the material information and issues that have guided the development of this FRDCP. Further details on the project and environmental context can be obtained from the EIA Report.

3.1.1 PROJECT CONTEXT

Please refer to the detailed description of the project as provided for in Section 2 and 3 of the EIA Report.

3.1.1.1 LOCATION

The table below indicates the properties that fall within the Prospecting Right/ Environmental Authorisation Application Area.

Table 3: Locality Details

Project Area	The application area is located within Block 1 the Exclusive Economic Zone located along the Northern Cape Coast. Block 1 is located offshore between Alexander Bay, extending south along the western coastline to approximately Hondeklip Bay and approximately 250 km offshore of the coast of the Northern Cape.
Application Area	Block 1 Application Area: 19 909.31 km ² Proposed 3D Seismic Survey Area: 134 562 ha
Magisterial District	Adjacent to the Namakwaland Magisterial District.
District Municipality	Adjacent to the Namakwaland District Municipality
Local Municipalities	Adjacent to the Nama Khoi and Richtersveld Local Municipalities.

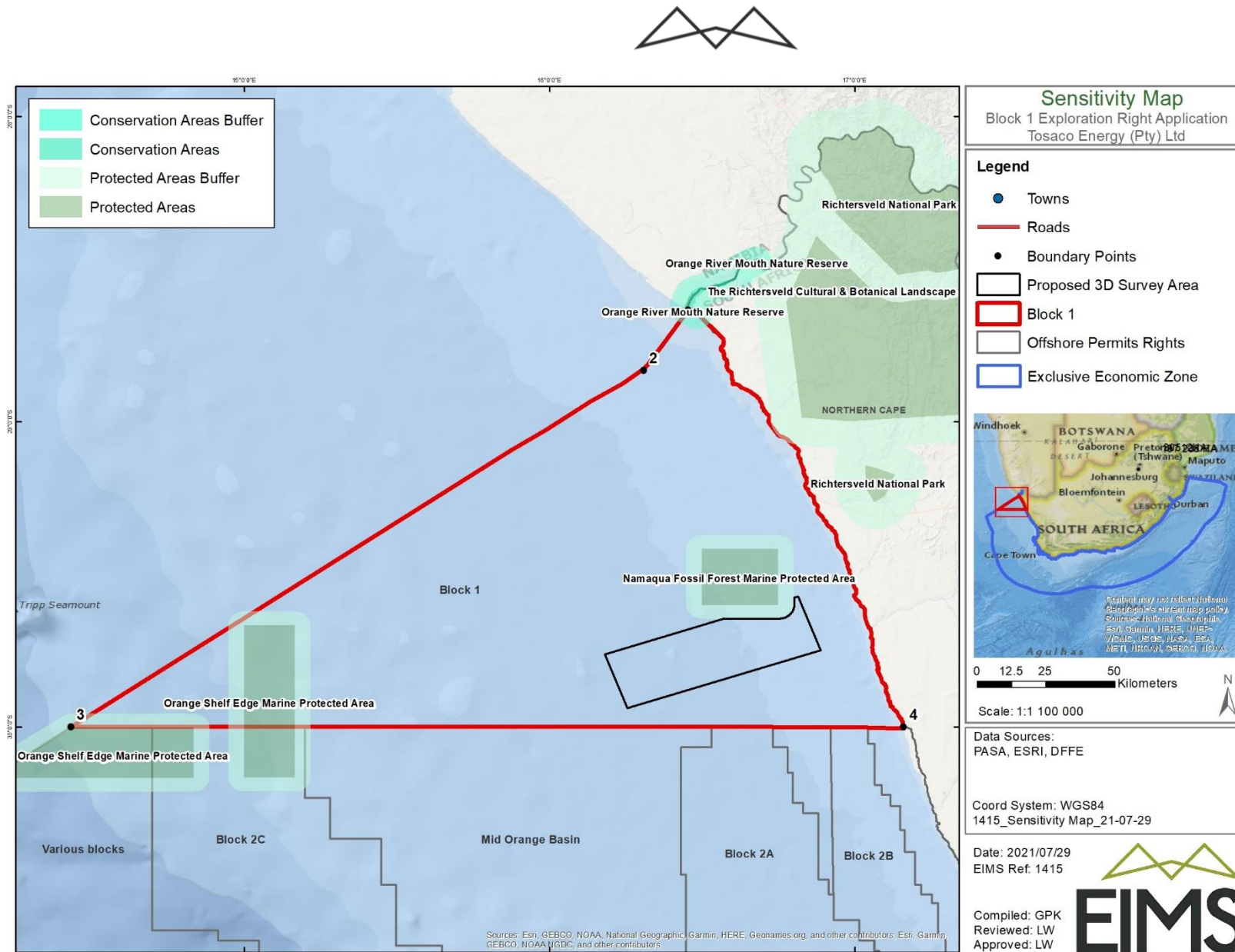


Figure 1: Locality Map



3.1.1.2 DESCRIPTION OF PROPOSED ACTIVITIES

Please refer to Section 3 of the EIA Report. The only invasive exploration activities are potential 2D and/ or #D Seismic Surveys.

3.1.1.3 LISTED AND SPECIFIED ACTIVITIES

Please refer to Section 4 of the EIA Report.

3.1.2 ENVIRONMENTAL AND SOCIAL CONTEXT

Please refer to Section 8 of the EIA Report.

3.1.3 STAKEHOLDER ISSUES AND COMMENTS

Please refer to Section 7 and Appendix B of the EIA Report. No issues or comments were raised during the public participation process relating to closure and post closure phase impacts or concerns.

3.2 ENVIRONMENTAL RISK ASSESSMENT

Please refer to Section 9 of the EIA Report. No decommissioning, closure or post closure phase impacts were identified in the project EIA. No project infrastructure will be established and there are not anticipated to be any residual risks.

3.3 ENVIRONMENTAL INDICATORS AND MONITORING

Please refer to Section 13 of the EMP (Appendix E of the EIA Report). As noted above no impacts or risks have been identified which are applicable to the decommissioning, closure and post closure phase and consequently no additional environmental indicators or monitoring requirements are proposed.

3.4 DESIGN PRINCIPLES

3.4.1 LEGISLATIVE AND GOVERNANCE FRAMEWORK

The requirement for final rehabilitation and decommissioning stems primarily from the legislative requirements of the MPRDA and the NEMA. The relevant extracts from each of these are presented in this section. Please also refer to Section 4 of the EIA Report for an overview of other enviro-legal requirements which may influence closure planning.

3.4.1.1 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT REGULATIONS

The following extracts from the MPRDA Regulations are specifically applicable to the preparation of this FRDCP:

- Regulation 30(1) An exploration work programme must contain –
 - (h) an estimate of the expenditure to be incurred for each stage of the exploration operation where the expenditure must be broken down into -
 - (i) exploration costs; and
 - (ii) costs pertaining to the rehabilitation and management of environmental impacts.
- (3) Quarterly progress reports must be submitted within 21 days of the end of the particular quarter of the year
 - (v) a statement reflecting rehabilitation work completed and the rehabilitation work uncompleted.
- and must include-Regulation 31(4) Annual progress reports must be submitted within 60 days of calendar year end and must include -



- (v) a statement reflecting rehabilitation work completed and rehabilitation work uncompleted.

3.4.1.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

Prior to 8 December 2014, the environmental aspects of prospecting activities were regulated in terms of the MPRDA. Recent legislative amendments and the drive towards a 'one environmental system' have resulted in the inclusion of the requirement for rehabilitation and decommissioning and associated financial provisions into the NEMA. Specific sections of the act are extracted below:

- Section 24P: Financial provision for remediation of environmental damage:
 - (1) An applicant for an environmental authorisation relating to prospecting, exploration, mining or production must, before the Minister responsible for mineral resources issues the environmental authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.
 - (2) If any holder or any holder of an old order right fails to rehabilitate or to manage any impact on the environment, or is unable to undertake such rehabilitation or to manage such impact, the Minister responsible for mineral resources may, upon written notice to such holder, use all or part of the financial provision contemplated in subsection (1) to rehabilitate or manage the environmental impact in question.
 - (3) Every holder must annually-
 - a. assess his or her environmental liability in a prescribed manner and must increase his or her financial provision to the satisfaction of the Minister responsible for mineral resources; and
 - b. submit an audit report to the Minister responsible for mineral resources on the adequacy of the financial provision from an independent auditor.
 - (4) (a) If the Minister responsible for mineral resources is not satisfied with the assessment and financial provision contemplated in this section, the Minister responsible for mineral resources may appoint an independent assessor to conduct the assessment and determine the financial provision. (b) Any cost in respect of such assessment must be borne by the holder in question.
 - (5) The requirement to maintain and retain the financial provision contemplated in this section remains in force notwithstanding the issuing of a closure certificate by the Minister responsible for mineral resources in terms of the Mineral and Petroleum Resources Development Act, 2002 to the holder or owner concerned and the Minister responsible for mineral resources may retain such portion of the financial provision as may be required to rehabilitate the closed mining or prospecting operation in respect of latent, residual or any other environmental impacts, including the pumping of polluted or extraneous water, for a prescribed period.
 - (6) The Insolvency Act, 1936 (Act No. 24 of 1936), does not apply to any form of financial provision contemplated in subsection (1) and all amounts arising from that provision.
 - (7) The Minister, or an MEC in concurrence with the Minister, may in writing make subsections (1) to (6) with the changes required by the context applicable to any other application in terms of this Act.

3.4.1.3 FINANCIAL PROVISIONING REGULATIONS

On 20th November 2015 the Minister promulgated the Financial Provisioning Regulations under the NEMA. The regulations aim to regulate the determine and making of financial provision as contemplated in the NEMA for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts from prospecting, exploration, mining or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future. These regulations provide for, inter alia:



- Determination of financial provision: An applicant or holder of a right or permit must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of prospecting, exploration, mining or production operations, as contemplated in the Act and to the satisfaction of the Minister responsible for mineral resources.
- Scope of the financial provision: Rehabilitation and remediation; decommissioning and closure activities at the end of operations; and remediation and management of latent or residual impacts.
- Regulation 6: Method for determining financial provision – An applicant must determine the financial provision through a detailed itemisation of all activities and costs, calculated based on the actual costs of implementation of the measures required for:
 - Annual rehabilitation – annual rehabilitation plan
 - Final rehabilitation, decommission and closure at end of life of operations – rehabilitation, decommissioning and closure plan; and
 - Remediation of latent and residual impacts – environmental risk assessment report.
- Regulation 10: An applicant must-
 - ensure that a determination is made of the financial provision and the plans contemplated in regulation 6 are submitted as part of the information submitted for consideration by the Minister responsible for mineral resources of an application for environmental authorisation, the associated environmental management programme and the associated right or permit in terms of the Mineral and Petroleum Resources Development Act, 2002; and
 - Provide proof of payment or arrangements to provide the financial provision prior to commencing with any prospecting, exploration, mining or production operations.
- Regulation 11: Requires annual review, assessment and adjustment of the financial provision. The review of the adequacy of the financial provision including the proof of payment must be independently audited (annually) and included in the audit of the EMPR as required by the EIA regulations.

3.4.2 CLOSURE VISION, OBJECTIVE AND TARGETS

It should be noted that it is anticipated that the activities will have a limited, short term impact on the receiving environment. The impacts will be limited to the planning and operational phases and it is not anticipated that there will be any need for closure or rehabilitation once the 3D surveys have been concluded. As such, closure of the project will be limited to the conclusion of the physical 3D surveys to be undertaken in the target area. This will mainly relate to the following impacts assessed as part of the operational phase:

- Waste generation and disposal; and
- Water contamination and pollution.

Residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for closure, decommissioning and rehabilitation actions. The overall closure objective will be to ensure that the post closure environment aligns with the pre-development. Therefore, no financial provisions apply to this application.

3.5 FINAL POST EXPLORATION LAND USE

Residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for further closure, decommissioning and rehabilitation actions. The overall closure objective will be to ensure that the post closure environment aligns with the pre-development. Therefore, no financial provisions apply to this application.

3.6 CLOSURE ACTIONS

It should be noted that it is anticipated that the activities will have a limited impact on the receiving environment. The impacts will be limited to the planning and operational phases and it is not anticipated that there will be any



need for closure or rehabilitation once the 3D surveys have been concluded. As such, closure of the project will be limited to the conclusion of the physical 3D surveys to be undertaken in the target area. This will mainly relate to the following impacts assessed as part of the operational phase:

- Waste generation and disposal; and
- Water contamination and pollution.

Residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for closure, decommissioning and rehabilitation actions. The overall closure objective will be to ensure that the post closure environment aligns with the pre-development. Therefore, no financial provisions apply to this application.

3.7 ORGANISATIONAL CAPACITY

Please refer to Section 8 of the EIA Report.

3.8 IDENTIFICATION OF CLOSURE PLAN GAPS

Please refer to Section 12 of the EIA Report.

3.9 RELINQUISHMENT CRITERIA

It is understood that the residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for closure, decommissioning and rehabilitation actions or relinquishment criteria.

3.10 CLOSURE COST

It should be noted that it is anticipated that the activities will have a limited impact on the receiving environment. The impacts will be limited to the planning and operational phases and it is not anticipated that there will be any need for closure or rehabilitation once the 3D surveys have been concluded. As such, closure of the project will be limited to the conclusion of the physical 3D surveys to be undertaken in the target area. This will mainly relate to the following impacts assessed as part of the operational phase:

- Waste generation and disposal; and
- Water contamination and pollution.

Residual impacts post completion of the seismic activities are limited (if any) and therefore there will be no requirements for closure, decommissioning and rehabilitation actions. The overall closure objective will be to ensure that the post closure environment aligns with the pre-development. Therefore, no financial provisions apply to this application.

3.11 MONITORING, AUDITING AND REPORTING

The requirement to monitor and audit should be carried through all phases of the proposed exploration activities (i.e. planning and operational phases). Please refer to Section 13 of the EMPr for the details regarding the monitoring of compliance and the specific monitoring tools and outcomes specified.

4 ANNUAL REHABILITATION PLAN

No rehabilitation will be required for this activity and, such, there is no need for an annual rehabilitation plan.

5 ENVIRONMENTAL RISK ASSESSMENT – LATENT AND RESIDUAL ENVIRONMENTAL IMPACTS

According to the Financial Provisioning Regulations (2015) the objective of the environmental risk assessment report that relates to latent and residual impacts is to:



- a) ensure timeous risk reduction through appropriate interventions;
- b) identify and quantify the potential latent environmental risks related to post closure;
- c) detail the approach to managing the risks;
- d) quantify the potential liabilities associated with the management of the risks; and
- e) outline monitoring, auditing and reporting requirements.

This section of the report aims to address these objectives separately in cases where they have not been considered in previous sections.

5.1 THE ASSESSMENT PROCESS USED AND DESCRIPTION OF LATENT ENVIRONMENTAL RISK

Section 9 of the EIA Report provides a detailed description of the environmental impact/risk identification and assessment (including the methodology and findings) undertaken for the proposed prospecting activities. The EIA Report and EMPr have identified mitigation measures which, once implemented successfully, will result in the avoidance or acceptable reduction of the associated impact. No latent environmental risks were identified in the EIA Process. All potential impacts and associated management actions are limited to the construction and/or operational phases and are addressed in the EMPr.

5.2 MANAGEMENT ACTIVITIES, COSTING AND MONITORING REQUIREMENTS

New international best practice guidelines that may be developed in the future, other than those already referred to in the EIA Report and EMPr, and would need to be considered at such time. In addition, monitoring results and auditing reports, will inform the risk assessment further. No management activities or monitoring requirements were identified for the closure and post closure phase.