



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: Moletlane Mining Pty (Ltd)

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FILE REFERENCE NUMBER SAMRAD: LP30/5/1/1/2/12649PR

1) IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment (EIA) and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17(1)(c) the Competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the Competent Authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner (EAP) must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2) Objective of the basic assessment process

The objective of the basic assessment process is to, through a consultative process –

- (a) Determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) Identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) Describe the need and desirability of the proposed alternatives;
- (d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:
 - (i) The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - (ii) The degree to which these impacts -
 - aa) Can be reversed;
 - bb) May cause irreplaceable loss of resources; and
 - cc) Can be managed, avoided or mitigated;
- (e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to -
 - (i) Identify and motivate a preferred site, activity and technology alternative;
 - (ii) Identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) Identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3) Contact person and correspondence address

a) Details of

(i) Details of the EAP

Name of the practitioner: Theunis Meyer

Tel no.: 0182991467 / 0836270637

Fax no. : 0865137996

E-mail address: Theunis.Meyer@nwu.ac.za

(ii) Expertise of the EAP

1) The qualifications of the EAP

(With evidence.)

Mr Meyer holds Masters Degrees in Pasture Science and Environmental Management from the Free State and North-West Universities respectively, as well as an Honours Degree in Wildlife Management from the University of Pretoria.

2) Summary of the EAP's past experience

(In carrying out the Environmental Impact Assessment Procedure.)

Mr Meyer has 14 years' experience in the environmental management and environmental assessment fields and another 14 years as plant ecologist.

In terms of professional affiliation, he is registered as Professional Natural Scientist with the South African Council for Natural Scientific Professions in Ecological Science and in Environmental Science. He is also a member of the Grassland Society of Southern Africa (GSSA), the South-African chapter of the International Association of Impact Assessment (IAIAsa) and a registered Senior Environmental Management System (EMS) Auditor with the Southern African Auditor Training and Certification Association (SAATCA).

Mr Meyer has been involved in numerous EIAs throughout South Africa, conducted in terms of the Environmental Conservation Act (No. 73 of 1989) (ECA), the National Environmental Management Act (No. 107 of 1998) (NEMA) and the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA). His responsibilities in these EIAs included the facilitation of the EIA and public participation processes, the identification and assessment of environmental impacts and the development of environmental management plans and programmes.

He also co-ordinated the popular environmental law public short course at the CEM and regularly lectures on the legal EIA requirements to various audiences. These presentations cover the requirements of Section 24 of the NEMA (No. 107 of 1998), of the regulations

published in GN R.982 and the activity lists published in GN R.983, GN R. 984 and GN R.985, as well as the guidelines published by Department of Environmental Affairs (DEA), Gauteng Department of Agriculture and Rural Development (GDARD) and the Western Cape Department of Environmental Affairs and Development Planning (DEADP).

As registered EMS Auditor, Mr Meyer is regularly involved in environmental legal compliance audits for clients to establish their legal non-compliances. He has also assisted a number of organizations in identifying not only environmental impacts, but also the root causes of these impacts (environmental aspects) during the development of ISO 14001 Environmental Management Systems.

b) Location of the overall activity

Farm name:	Groothoek 106, Rooiboschbaak 107, Zebedielas Location 123, Taaiboschlaagte 163, Gewensch 165, Keulen 565, Madras 566, Charlottes Dale 568, Charlottes Lust 569, The Smugglers Union 570
Application area (Ha):	27 005.6
Magisterial district:	Lepelle-Nkumpi
Distance and direction from nearest town:	33 km south-east of Mokopane
21 digit Surveyor General Code for each farm portion:	Groothoek 106 T0KS00000000010600000 Rooiboschbaak 107 T0KS00000000010700000 Zebedielas Location 123 T0KS00000000012300000 Taaiboschlaagte 163 T0KS00000000016300000 Volop 164 T0KS00000000016400000 Gewensch 165 T0KS00000000016500000 Keulen 565 T0KS00000000056500000 Madras 566 T0KS00000000056600000 Charlottes Dale 568 T0KS00000000056800000 Charlottes Lust 569 T0KS00000000056900000 The Smugglers Union 570 T0KS00000000057000000

c) Locality map

(Show nearest town, scale not smaller than 1:250000.)

See Appendix 1

d) Description of the scope of the proposed overall activity

(Provide a plan drawn to a scale acceptable to the Competent Authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.)

See Appendices 2 & 3.

(i) Listed and specified activities

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc. E.g. for mining: excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Aerial extent of the activity (Ha or m ²)	Listed Activity (Mark with an X where applicable or affected.)	Applicable listing notice (GNR 983, GNR 984 or GNR 985)
Temporary access roads for Phase 1 drilling	4.5 ha	X	GNR 983
Temporary access roads for Phases 2 & 3 drilling	6.5 ha	X	GNR 983
Establishment of Phase 1 prospecting area (camp sites & drill sites)	7.5 ha	X	GNR 983
Erection of core storage and processing facility	300 m ²	X	GNR 983
Phase 1 borehole drilling	2.5 ha	X	GNR 983
Establishment of Phases 2 & 3 prospecting area (camp sites & drill sites)	15.0 ha	X	GNR 983
Phases 2 & 3 borehole drilling	5.0 ha	X	GNR 983
Logging and sampling of drill core		X	GNR 983
Decommissioning of the access roads & prospecting area (camp sites & drill sites)	33.5 ha	X	GNR 983

(ii) Description of the activities to be undertaken

(Describe the methodology or technology to be employed, including the type of commodity to be prospected / mined and for a linear activity, a description of the route of the activity.)

Prospecting for platinum group metals and diamonds will be conducted on the western side of the area under the prospecting right application, on the farm Zebediela 123 KS and adjacent farms.

The exploration programme for this project would involve three distinct phases. Firstly, a phase to explore the western side of the licence to an inferred level so that different areas can be prioritised for further work, followed by a second phase to delineate zones of mineralisation to an indicated level, and lastly to drill to a measured level where this is justified.

Phase 1 of the prospecting programme will be done over a six month period and will include logging, sampling, analysis and rehabilitation of drill sites. It will involve two diamond drill rigs and one percussion rig that will drill an initial 30 boreholes to intersect the Merensky, the UG2 and possibly Plat reefs, approximately 150 - 300 m below the sub-outcrop position (below the Karoo). This will be done by first using percussion drilling to drill through the Karoo cover (approximately 15 000 m), followed by diamond drilling in the Bushveld sequence (approximately 9 000 m).

The nature and extent of prospecting Phase 2, aimed at delineating zones of mineralisation to an indicated level and Phase 3, to establish the mineral resource to a measured level will be dependent on the results obtained during Phase 1.

Prospecting will be done in a well-planned manner, in such a way that environmental harm is prevented as far as possible. Prospecting sites will be located as indicated by the geologist and prospecting activities will be restricted to the surface areas required. Care will be taken to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place. The prospecting activities will utilise existing roads and tracks as far as possible. Camp sites will be sited and fenced, in consultation with the land-owner/occupier.

A core storage and processing facility will be erected on or rented or close to site. The recovered core will be geologically logged and sampled for assay at an accredited laboratory.

e) Policy and legislative context

<p>Applicable legislation and guidelines used to compile the report</p> <p>(A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.)</p>	<p>Reference where applied</p>	<p>How does this development comply with and respond to the legislation and policy context?</p> <p>(E.g. In terms of the National Water Act (No. 36 of 1998) a Water Use License has / has not been applied for.)</p>
Mineral Petroleum Development Resources Act	s. 5A & s. 38A	Obtain an environmental authorisation prior to prospecting
Mineral Petroleum Development Resources Act	s. 43	Obtain closure certificate if prospecting does not result in mining
National Water Act	s. 22	Water use must be authorised, could be generally authorised, otherwise, water use license must be applied for
National Water Act	s. 19	Implement reasonable measures to prevent, minimise and remediate harm to water resources
National Heritage Resources Act	s. 38	Conduct a heritage impact assessment as part of the EIA process
National Heritage Resources Act	s. 48	Obtain permission before destroying heritage resources
National Environmental Management Act	s. 24	Obtain an environmental authorisation with approved environmental management programme prior to prospecting
National Environmental Management Act	s. 24	Make financial provision for remediation of environmental damage

Applicable legislation and guidelines used to compile the report (A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.)	Reference where applied	How does this development comply with and respond to the legislation and policy context? (E.g. In terms of the National Water Act (No. 36 of 1998) a Water Use License has / has not been applied for.)
National Environmental Management Act	s. 24	Plan, manage and implement necessary procedures and requirements in respect of mine closure
National Environmental Management Act	s. 28	Apply the duty of care to prevent, minimise and rehabilitate environmental harm
National Environmental Management: Air Quality Act	s. 32	Take measures to not exceed the dustfall standards

f) Need and desirability of the proposed activities

(Motivate the need and desirability of the proposed development, including the need and desirability of the activity in the context of the preferred location.)

The South African government has emphasised the need to bring about equitable access to South Africa's mineral resources and promote local and rural development and the social upliftment of communities affected by mining. In addition, the state's is obliged to protect the environment, to ensure ecologically sustainable development of mineral and petroleum resources and promote economic and social development.

The proposed prospecting will not only promote economic development through the development of mineral resources, but also promote equitable access to South Africa's mineral resources and promote local and rural development and social upliftment. In addition, it will ensure ecologically sustainable development of mineral resources in the Limpopo Province.

g) Motivation for the overall preferred site, activities and technology alternative

The prospecting area was identified by the relevant exploration geologist, based on available geological information. The activities are the standard activities involved in prospecting

activities and the technologies applied will be the best available affordable prospecting technologies.

h) Full description of the process followed to reach the proposed preferred alternatives within the site

(NB! This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.)

(i) Details of the development footprint alternatives considered

With reference to the site plan provided as Appendix 3 and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- a) The property on which or location where it is proposed to undertake the activity;
- b) The type of activity to be undertaken;
- c) The design or layout of the activity;
- d) The technology to be used in the activity;
- e) The operational aspects of the activity; and
- f) The option of not implementing the activity.

No site alternatives are considered, based on the site geology.

No technology alternatives, based on available affordable prospecting technologies.

Positioning of prospecting boreholes and lay-out of prospecting sites will be done in such a way that environmental harm is prevented as far as possible and care is taken to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place.

If the activity is not undertaken, the mineral resource potential will not be established, which means that economic development and important socio-economic benefits thereof will be forfeited. There will also be no negative environmental impacts.

(ii) Details of the public participation process followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB! The affected parties must be specifically consulted regardless of whether or not they attended public meetings. (Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

Information were provided to the land owners and interested and affected parties in a background information document and accompanying letter/e-mail, as well as newspaper advertisements. The information covered the following topics: Description of the proposed project, affected properties and prospecting activities; need and desirability of the project; as well as information related to the EIA process and the role of I&APS in the EIA process. See Appendices 2 (), 3 () & 4 ().

The following identified communities, land owners, lawful occupiers and other interested parties have been consulted: Zebediela Community, Zebediela Ndebele Tribal authority, Lepelle-Nkumpi Local Municipality, National Departments of Mineral Resources; Agriculture, Forestry and Fisheries; Water and Sanitation; Limpopo Departments of Economic Development, Environment and Tourism; Agriculture; Lepelle-Nkumpi Local Municipality, Eskom, Mapetla Resources (Pty) Ltd, Blue Nightingale Trading 907 (Pty) Ltd, Sunmin Mining, Hlakaro Mining (Pty) Ltd, Klipspringer Diamond Mine, Lonmin Shanduka Group (Zebediela Platinum Project), Messina Mines Ltd, Western Lid, Vutomi Diamond Mine (Marsfontein Diamond Mine), Zebediela Bricks, Zebediela Citrus Farm.

Although some input has been received, none of these related to the current status of the biophysical and socio-economic environments or the environmental impacts of the proposed prospecting activities.

(iii) Summary of issues raised by I&APs

(Complete the table summarising comments and issues raised, and reaction to those responses.)

Interested and affected parties (List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.)	Date of comments received	Issues raised	EAP's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
Affected parties				
Landowner/s	X			
Lawful occupier/s of the land	X			
Lonmin Shanduka Platinum Project Group	X	March 23, 2016	Shanduka Resources holds prospecting right on Zebedielas Location 123.	The applicant for prospecting right, Zebediela Mining, is aware of Shanduka's right. The application and its map exclude such portions. Though DMR cannot grant prospecting right to two applicants for the same mineral on the same property, it is possible that DMR can grant prospecting right to two

Interested and affected parties (List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.)	Date of comments received	Issues raised	EAP's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
			applicants for different minerals on the same property.	
Landowners or lawful occupiers on adjacent properties	X			
Sunmin Mining	X			
Vutomi Diamond Mine	X			
Zebediela Bricks	X			
Municipal councillor	X			
Municipality	X			
Organs of state (Responsible for infrastructure that may be affected, e.g. Roads Department, Eskom, Telkom, DWA, etc.	X			
Eskom	X	March 15, 2016	Requested shape files of map of the	Files provided

Interested and affected parties (List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.)	Date of comments received	Issues raised	EAP's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
		prospecting area.		
Communities	X			
Dept. Land Affairs	X			
Traditional Leaders	X			
Zebediela Ndebele Tribal Authority	X			
Dept. Environmental Affairs	X			
Limpopo Department of Economic Development, Environment and Tourism	X			
Other Competent Authorities affected	X			

Interested and affected parties (List the names of persons consulted in this column, and mark with an X where those who must be consulted were in fact consulted.)	Date of comments received	Issues raised	EAP's response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated
Other affected parties				
Interested parties				

(iv)The environmental attributes associated with the alternatives

(The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects.)

1) Baseline environment

a) Type of environment affected by the proposed activity

(Its current geographical, physical, biological, socio- economic and cultural character.)

The Moletlane project prospecting area is located approximately 300 km northeast of Johannesburg in the Limpopo Province of the Republic of South Africa. Access from Johannesburg to the project area is via the national N1 highway to the town of Mokopane and then via a tarred road (R518) towards Lebowakgomo (Appendix 1).

The project area is located within the Lepelle-Nkumpi Local Municipality, Capricorn District of the Limpopo Province, and includes the farms Groothoek 106KS, Rooiboschbaak 107KS, Zebedielas Location 123KS, Taaiboschlaagte 163KS, Volop 164KS, Gewensch 165KS, Madras 566KS, Charlottes Dale 568KS, Charlottes Lust 569KS, The Smugglers Union 570KS and Keulen 565KS (Appendix 1). Small townships (villages) occur throughout the project area as indicated in Appendix 1, while certain sections of the farms being excluded from the application (Appendices 1 & 2). The proposed prospecting boreholes are located in the north-western section of the prospecting area, to the south of the Moletlane Township (Appendix 3).

Topography

The regional topographical setting of the study area can be largely classified in the north as low mountainous terrain, while the remainder of the site can be described as plains with drainage channels. With the exception of occasional small anthills and erosion along the drainage channel of the non-perennial streams bisecting the site, the plains section of the study area does not exhibit significant topographical features. The only particular sensitive topographical features occur in the rocky mountainous regions on the steep, rocky slopes in the Strydpoort Mountains. The average elevation of the plains regions is 920 mamsl, while the highest point in the Strydpoort Mountains is roughly at a height of 1280 mamsl.

Climate

Climate in the broad sense is a major determinant of the geographical distribution of species and vegetation types. However, on a smaller scale, the microclimate, which is greatly influenced by local topography, is also important. Within areas, the local conditions of temperature, light, humidity and moisture vary greatly and it is these

factors which play an important role in the production and survival of plants (Tainton, 1981). In terrestrial environments, limitations related to water availability are always important to plants and plant communities. The spatial and temporal distribution of rainfall is very complex and has great effects on the productivity, distribution and life forms of the major terrestrial biomes (Barbour et al. 1987). Furthermore, aspects like topography, slope and altitude may further result in differences in precipitation and water availability to plants within the study area. The site falls within the summer rainfall region with very dry winters and frost that occurs fairly infrequent during winter (4 mean frost days per annum).

The prospecting area has a mean annual precipitation of 518mm. The rainy season extends over the summer months from October through to April, with the highest rainfall occurring during December and January. Precipitation is usually associated with thunderstorms. These sudden downpours pose some risk of flooding in low-lying areas, but most South African mines are exposed to this type of weather and precautionary measures are routine on these operations.

Mean monthly temperatures for the area is 37.3°C and -0.9°C for January and June respectively. The temperatures are very mild and stable with a minimum variance between maximum and minimum making the area an ideal living place with regard to temperature.

Geology and soil types

Geology is directly related to soil types and plant communities that may occur in a specific area (Van Rooyen & Theron, 1996). A Land type unit is a unique combination of soil pattern, terrain and macroclimate, the classification of which is used to determine the potential agricultural value of soils in an area.

The prospecting area is located in the north-western sector of the Eastern Limb of the Bushveld Igneous Complex (BIC). The soils covering the study area can be grouped into different land types. A Landtype unit is a unique combination of soil pattern, terrain and macroclimate, the classification of which is used to determine the potential agricultural value of soils in an area. Soil types are mostly determined by position in the landscape.

The plains within this land type are deemed to be covered predominantly by red-yellow apedal soils, with highly localized pockets of red-coloured, weakly structured clayey soils, and highly localized pockets of moderately structured clayey soils. The

mountainous region is dominated by shallow, poorly developed soils and the substrate is often completely dominated by bedrock.

The following soil forms occur in the area:

- Lime-poor Hutton soil between 0.4 and 1.2 m thick that has undergone a degree of leaching, containing up to 55% clay,
- Both lime-poor and lime-rich Shortlands soil between 0.25 and 1.05 m thick that has undergone little or no leaching, containing between 35 and 55% clay,
- Mainly non-red-coloured, both lime-poor and lime-rich Valsrivier soil between 0.8 and 1.2 m thick containing between 35 and 55% clay,
- Localized pockets of non-red-coloured, lime-rich Swartland soil between 0.4 and 0.7 m thick containing between 35 and 55% clay;
- Shallow Glenrosa soils on the footslopes of the rocky ridges and outcrops, Poorly developed very shallow Mispah soils on the sloping areas of the ridges and outcrops.
- Areas with large boulders and exposed bedrock often occur on the steeply sloping terrain of the mountainous terrain.

Vegetation types

The prospecting area lies within the Savanna biome which is the largest biome in Southern Africa, although the site itself is more representative of grassland. The Savanna Biome is characterized by a grassy ground layer and a distinct upper layer of woody plants (trees and shrubs). The environmental factors delimiting the biome are complex and include altitude, rainfall, geology and soil types, with rainfall being the major delimiting factor. Fire and grazing also keep the grassy layer dominant.

Mucina & Rutherford classify the project area into 4 vegetation types (Appendix 2), namely Springbokvlakte Thornveld, Central sandy Bushveld, Pong Dolomite Mountain Bushveld and Mamabolo Mountain Bushveld.

The major area of the prospecting area is classified as Springbokvlakte Thornveld. This vegetation type is characterized by open to dense, low thorn Savanna dominated by *Acacia* species or shrubby grassland with a very low shrub layer. The Springbokvlakte Thornveld has an endangered conservation status, with only 1% statutorily conserved areas. About 49% of the area is transformed, including about 45% cultivated and 3% urban built-up areas. Several alien species are widely scattered throughout the vegetation type.

The Central Sandy Bushveld occurs in the southern section of the prospecting area on slightly undulating plains and leached, sandy soils. The Central Sandy Bushveld has a vulnerable conservation status, with less than 3% statutorily conserved and about 24% that has been transformed. The landscape and vegetation features of this vegetation type include low undulating areas, sometimes between mountains, and sandy plains supporting tall, deciduous *Terminalia sericea* and *Burkea africana* woodland on deep sandy soils and low, broadleaved *Combretum* woodland on shallow rocky or gravelly soils. Species of *Acacia*, *Ziziphus* and *Euclea* are found on flats and lower slopes on eutrophic sands and some less sandy soils, while the grass-dominated herbaceous layer have a relatively low basal cover on dystrophic sands.

The Mamabolo Mountain Bushveld includes the far northern section of the Strydpoort Mountains. The Mamabolo Mountain Bushveld vegetation type is characterized by low mountains and rocky hills. The slopes are moderate to steep, and very rocky, covered by small trees and shrubs. Rock slabs or domes within this vegetation type are sparsely vegetated, and then mostly with a mixture of xerophytic or resurrection plants, with several succulents. This vegetation type has a least threatened conservation status, with almost 8% that has been statutorily conserved, while about 6% has been transformed, including about 2% each of urban and built-up areas, plantations and cultivated land. Land uses of this vegetation type include grazing, wood harvesting and medicinal plant collection.

A small section at the foot of the Strydpoort Mountain Range forms part of the Pong Dolomite Mountain Bushveld. This vegetation type forms open to closed woodland, with well-developed shrub layers and occur on low to high mountain slopes on various slope angles, aspects and altitude, especially along the western extension. The vegetation type has a Least Threatened conservation status with 16% statutorily conserved areas, and 6% of the area is transformed.

Hydrology and drainage

The surface waters of the Limpopo Province is exposed to different environmental impacts and the ecosystem integrity thereof has responded to these impacts, with integrity scores range between poor and fair for the majority of river systems studied within the Rivers Health Programme. Due to the said environmental impacts on quality of water and flow regimes, the desired ecological state for the majority of river systems could never again attain states higher than fair. Major rehabilitation of river banks, alien tree removal and removal of impoundments would be required to

achieve this. The latter would not easily be attained, due to the scarcity of water resources within the region and the critical need for water storage mechanisms.

At a basin or sub-basin scale, particularly in semi-arid and arid areas, priority is often placed on monitoring and management of water quantity. Equally important, however, is the monitoring and management of water quality (DWAF 2004). Water quality is often characterised in terms of the concentration of different chemicals in the water (Hatfield 2008). What determines “good” or “bad” water quality depends on the purpose of the assessment - for example, water with naturally elevated concentrations of some metals may be unsafe to drink, but still suitable for industrial uses. Assessment involves comparing measured chemical concentrations with natural, background, or baseline concentrations, and with guidelines established to protect human health or ecological communities.

The prospecting area is located within Olifants Water Management Area (WMA), and is located in three Quaternary Catchment Areas (QCA) namely B52A, B51E and B51G. The area exhibits a weakly dendritic drainage pattern, mostly due to the very gentle slope.

The study area is drained mainly by surface run-off (i.e. sheetwash), where surface storm water generally collects in areas where the natural topography has been disturbed, such as foot paths or dirt tracks, and eventually drain into roads and flow into non-perennial streams that cut through the proposed prospecting area. The Nkumpi River and its tributaries are the main drainage channels draining the proposed prospecting area. These drainage channels form tributaries of the regionally important perennial Olifants River that lies to the east and south of the site.

It must be noted that stream flow along the non-perennial drainage channels occurs only during and directly after heavy precipitation events, and may continue for a short period directly after a particularly good rainy season. Small dams are located along some of these stream channels.

Another feature of the southern section of the project area is the presence of wetlands or pans. These areas are biodiversity “hotspots” and any developments or activities in close proximity to these areas should be done with care.

b) Description of the current land uses

Various settlements occur in the prospecting area, with schools, police stations, hospitals, shopping centres, etc. The natural areas consist of grazing land, with widely scattered crop fields and the Zebediela Citrus Farm in the north-west, adjacent to the prospecting area. There are also some commercial industries in the area, including Zebediela Bricks and the Lonmin-Shanduka platinum mine.

c) Description of specific environmental features and infrastructure on the site

The largest part of the prospecting area is located on the plains of the Springbok flats, with only a small northernmost part that is situated on the southern slopes of the Strydpoort mountains. The prospecting area is also dissected by the Nkumpi river that flows from the Strydpoort mountains in the North to the Olifants river in the south. There are no specific infrastructure on the prospecting area, apart from the villages and the associated infrastructure.

d) Environmental and current land use map

(Show all environmental and current land use features.)

See attached map (Appendix 2).

(v) Impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be avoided, managed or mitigated.

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated.)

The identified possible positive and negative environmental impacts of the proposed prospecting activity are summarised in Table 1. The significance, probability, and duration of the impacts, the extent to which they can be reversed, avoided, managed or mitigated, as well as the extent to which they may cause irreplaceable loss of resources are indicated in Table 2, under Part A section 3(h)(vii).

Table 1: Identified possible positive and negative environmental impacts of the proposed prospecting activity, as informed by both the typical known impacts of such activities and the consultation with interested and affected parties

Phase	Aspect	ABIOTIC					ECOLOGICAL					VISUAL	SOCIO-ECONOMIC		
		Soil (compaction & pollution)	Land use potential	Surface water (run-off & pollution)	Ground water (pollution)	Air quality (dust & fumes)	Noise	Vegetation (clearance & modification)	Wildlife (killing, injury & disturbance)	Sensitive landscapes (destruction)	Ecosystem services	Visual impact	Archaeological & cultural sites	Socio-economic impacts (- or +)	
Activity															
Phase 1 Drilling	Construction of temporary access roads	x		x		x	x	x	x	x	x	x	x	x	x
	Travelling to and from site	x	x	x		x	x		x						x
	Camp & drilling site establishment	x	x	x		x	x	x	x	x	x	x	x	x	x
	Erection/hire of core storage and processing facility	x	x	x			x	x					x	x	x
	Drilling	x	x	x	x	x	x		x	x			x		x
	Logging and sampling of drill cores					x	x								
	Lining and capping of boreholes				x		x								
Phase 2 Drilling	Construction of temporary access roads	x		x		x	x	x	x	x	x	x	x	x	x
	Travelling to and from site	x	x	x		x	x		x						x
	Camp & drilling site establishment	x	x	x		x	x	x	x	x	x	x	x	x	x
	Drilling	x	x	x	x	x	x		x	x			x		x
	Logging and sampling of drill cores					x	x								
	Lining and capping of boreholes				x		x								
Phase 3 Drilling	Construction of temporary access roads	x		x		x	x	x	x	x	x	x	x	x	x
	Travelling to and from site	x	x	x		x	x		x						x
	Camp & drilling site establishment	x	x	x		x	x	x	x	x	x	x	x	x	x
	Drilling	x	x	x	x	x	x		x	x			x		x
	Logging and sampling of drill cores					x	x								
	Lining and capping of boreholes				x		x								
Decommissioning & rehabilitation/ closure	Decommissioning of the camp/drill site	x	x	x	x	x	x	x	x		x	x			x
	Rehabilitation of the camp/drill site	x	x	x	x	x	x	x	x		x	x			x

(vi)Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process were determined in order to decide the extent to which the initial site layout needs revision.)

The assessment of impacts was done according to a synthesis of the following assessment criteria:

- Nature of the impact
- Extent (spatial scale)
- Duration
- Magnitude or intensity of the impact (severity)
- Probability
- Reversibility
- Ability to prevent/control/mitigate
- Irreplaceability
- Significance

The criteria were used to determine significance as described below.

- **Nature of the impact**

This is an appraisal of the type of effect the activity would have on the affected environment. The description includes what is being affected and how, whether it is positive or negative, as well as whether it is direct or indirect.

- **Extent (spatial scale)**

Extent of impact	Description
Site specific	Direct and indirect impacts limited to site of impact only.
Local	Direct and indirect impacts affecting environmental elements around the site within the Moletlane area.
Regional	Direct and indirect impacts affecting environmental elements within the Capricorn District.
National	Direct and indirect impacts affecting environmental elements on a national level.
Global	Direct and indirect impacts affecting environmental elements on a global level.

- **Duration (Reversibility)**

Duration of impact	Description
Very short	Less than 1 year
Short	1 to 5 years
Medium	6 to 12 years
Long	13 to 50 years
Very long	Longer than 50 years
Permanent	Permanent

- **Magnitude or intensity of the impact (severity)**

Magnitude/intensity	Description
Low	The impact affects the environment in such a way that natural, social and cultural functions and processes are not affected
Moderate	The affected environment is altered, but natural, social and cultural functions and processes continue albeit in a modified way
Severe	Natural, social and cultural functions or processes are altered to the extent that it will temporarily or permanently cease

- **Probability**

Probability of impact occurrence	Description
Very low	<20% sure of particular fact or likelihood of impact occurring
Low	20 to 39% sure of particular fact or likelihood of impact occurring.
Moderate	40 to 59% sure of particular fact or likelihood of impact occurring
High	60 to 79% sure of particular fact or likelihood of impact occurring
Very high	80 to 99% sure of particular fact or likelihood of impact occurring.
Definite	100% sure of particular fact or likelihood of impact occurring.

- **Reversibility**

High	Impact can be reversed fairly easily
Moderate	Impact can only be reversed with difficulty
Low	Virtually impossible to reverse impact

- **Extent of avoidance and/or management and/or mitigation**

High	Impact can be fairly easily avoided and/or managed and/or mitigated
Moderate	Impact can only be avoided and/or managed and/or mitigated with difficulty
Low	Virtually impossible to avoid and/or manage and/or mitigate impact

- **Extent of irreplaceable loss of resources**

High	Almost complete loss of irreplaceable resources
Moderate	Some loss of irreplaceable resources
Low	Virtually no loss of irreplaceable resources

- **Impact significance**

Impact significance	Description	
	Negative impacts	Positive impacts
No impact	There would be no impact at all - not even a very low impact on the system or any of its parts.	
Very low Impact would be negligible.	Almost no mitigation and/or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple.	Alternative means would almost all likely to be better, in one or a number of ways, than this means of achieving the benefit.
Low Impact would be of a low order and with little real effect.	Mitigation and/or remedial activity would be either easily achieved or little would be required, or both.	Alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.
Moderate Impact would be real but not substantial	Mitigation and/or remedial activity would be both feasible and fairly easily possible.	Other means of achieving these benefits would be about equal in time, cost and effort

Impact significance	Description	
	Negative impacts	Positive impacts
within the bounds of those which could occur.		
High Impacts of a substantial order.	Mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these.	Other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.
Very high Of the highest order possible within the bounds of impacts which could occur.	There would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted.	There is no real alternative to achieving the benefit

(vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties.)

For phase 1 of the drilling programme, the significance, probability, and duration of the impacts, the extent to which they can be reversed, avoided, managed or mitigated, as well as the extent to which they may cause irreplaceable loss of resources are indicated in Table 2. Due to the more intensive nature of further drilling phases, similar impacts will occur, but the significance may increase. It is, however, impossible to assess these impacts accurately at present, due to the fact that the locality of boreholes for future drilling phases have not been established.

Impact	Nature of impact	Activity	Phases	Impact assessment							
				Extent	Duration	Magnitude	Probability	Reversibility	Extent of avoidance, management, mitigation	Extent of irreplaceable loss of resources	Significance
Soil compaction	<ul style="list-style-type: none"> • Soil compaction due to the prospecting activities, primarily due to movement of vehicles and equipment, as well as establishment of the drilling site and core storage and processing facility+B4 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Site	Medium	Moderate	High	Moderate	Moderate	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Lining and capping of boreholes									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Soil pollution	<ul style="list-style-type: none"> • Soil contamination and degradation due to spillages of hydrocarbons, waste, sewerage and other contaminants used and stored on the site 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Medium	Moderate	Moderate	High	Moderate	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Lining and capping of boreholes									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Change in land use/land potential	<ul style="list-style-type: none"> • Interference of prospecting activities with the day-to-day management of agricultural/domestic land use • Reduced land potential due to loss of vegetation, compaction and disturbance of soil and loss of carrying capacity as a result of prospecting activities 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Moderate	Moderate	Moderate	Moderate	Low	Moderate
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Increased surface water run-off	<ul style="list-style-type: none"> • An increase in the surface water run-off as a result of the increase in bare areas and impervious surfaces • Soil erosion on and off site due to decreased vegetation cover and increased water run-off as a result of prospecting activities 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Moderate	Moderate	Moderate	Moderate	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									

Impact	Nature of impact	Activity	Phases	Impact assessment							
				Extent	Duration	Magnitude	Probability	Reversibility	Extent of avoidance, management, mitigation	Extent of irreplaceable loss of resources	Significance
Surface water pollution	<ul style="list-style-type: none"> Increased pollutant concentrations in surface water run-off, including silt, hydrocarbons and other contaminants used and stored on the site Increased silt loading as a result of prospecting activities causing soil disturbance, decreased vegetation cover and increased water run-off 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Moderate	High	Moderate	Moderate	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Lining and capping of boreholes									
		Decommissioning of the camp/drill site									
Rehabilitation of the camp/drill site											
Generation of dust and fumes	<ul style="list-style-type: none"> Dust/fumes generated/released during the prospecting activities Smoke/gaseous emissions due to machinery/processes/equipment/ vehicles employed during prospecting activities 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Very short	Moderate	Very High	High	High	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Noise and vibration	<ul style="list-style-type: none"> Noise and vibration due to machinery/processes/equipment/ vehicles employed during prospecting activities 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Very short	Moderate	Definite	High	Low	Low	Low
		Travelling to and from site									
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Lining and capping of boreholes									
		Decommissioning of the camp/drill site									
Rehabilitation of the camp/drill site											
Vegetation impacts due to site clearance and invader plants	<ul style="list-style-type: none"> Loss of vegetation due to the clearance of vegetation and soil contamination during the prospecting activities Loss of indigenous plant species as a result of the spreading of alien and invasive plants 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Medium	Moderate	Definite	Moderate	Moderate	Moderate	Low
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									

Impact	Nature of impact	Activity	Phases	Impact assessment							
				Extent	Duration	Magnitude	Probability	Reversibility	Extent of avoidance, management, mitigation	Extent of irreplaceable loss of resources	Significance
Wildlife killing/injury and disturbance	<ul style="list-style-type: none"> Displacement of species due to habitat transformation and destruction Restriction of wildlife movement Potential snaring, hunting and killing of wildlife 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Very short	Moderate	Low	High	Moderate	Low	Low
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Ecosystem services	<ul style="list-style-type: none"> Disruption or destruction of ecosystem services due to prospecting activities 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Moderate	Low	Moderate	Moderate	Low	Low
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Visual impact	Visual impact caused by the clearance of vegetation, as well as construction of ancillary buildings and structures	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Low	Moderate	High	Low	Low	Low
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Destruction/disturbance of archaeological & culturally important sites	<ul style="list-style-type: none"> Destruction of informal African cemetery, historical plunge dips and associated infrastructure, as well as site with very high density of mid stone age lithics during prospecting 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Site	Permanent	Severe	Definite	Low	Low	High	Very high
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
Negative impact on social fabric	<ul style="list-style-type: none"> Negative impact on the land-use of the area due to prospecting activities Adverse social impacts due to the presence of migrant construction workers 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Short	Moderate	High	Moderate	Moderate	Moderate	Moderate
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									
Positive social impacts due to job creation etc.	<ul style="list-style-type: none"> Direct economic benefit through the creation of temporary and permanent employment opportunities Indirect economic benefit through the benefits associated with the provision of accommodation, catering and local spending by contractors 	Establishment of temporary access roads	Phases 1, 2 & 3 drilling, Decommissioning & closure	Local	Very short	Moderate	High	High	High	Moderate	Moderate
		Camp & drilling site establishment									
		Erection and or hire of core storage and processing facility									
		Drilling									
		Decommissioning of the camp/drill site									
		Rehabilitation of the camp/drill site									

Fourteen potentially negative impacts on the environment and the community were identified: one of these impacts, i.e. on heritage resources, is of a very high significance (in the absence of appropriate mitigation measures, two impacts are of moderate significance, while the remaining eleven negative impacts are of low significance. One positive impact of moderate significance was also identified, i.e. the positive direct and indirect economic impacts.

(viii) The possible mitigation measures that could be applied and the level of risk

(With regard to the issues and concerns raised by affected parties, provide a list of the issues raised and an assessment / discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

The initial site lay-out for each borehole will already be done in such a way as to prevent environmental harm as far as possible. Existing roads and tracks will be utilised as far as possible, camp sites and prospecting sites will be sited and fenced, in consultation with the land-owner/occupier, activities will be restricted to the surface areas required and care taken to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place. As a consequence, alternative lay-out options will not be required.

No issues and concerns raised by affected parties. See Part A section 3(m) and Part B for an assessment and discussion of the mitigation measures.

(ix) Motivation where no alternative sites were considered

No site alternatives are considered, based on the site geology. Prospecting sites will be located as indicated by the geologist and prospecting activities will be restricted to the surface areas required, preventing and minimising environmental impacts as described under section 3(h)(vii) above.

(x) Statement motivating the alternative development location within the overall site

(Provide a statement motivating the final site layout that is proposed.)

The initial site lay-out for each borehole will already be done in such a way as to prevent environmental harm as far as possible. Existing roads and tracks will be utilised as far as possible, camp sites and prospecting sites will be sited and fenced, in consultation with

the land-owner/occupier, activities will be restricted to the surface areas required and care taken to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity

(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

The expert knowledge of the environmental assessment practitioner and the specialists were used to identify, assess and rank the impacts and risks that the prospecting activity will impose on the environment at the site. Engagements with exploration geologists and other specialists were the primary sources for the nature and potential impacts of the prospecting activity. Aerial images and maps of the prospecting area were also studied to make worthwhile decisions. Furthermore, experience gained during similar past projects was invaluable in the process. Lastly, engagement with the public/communities, as well as interested and affected parties also contributed to the process.

Details of the environmental issues and risks identified and assessed are provided in sections 3(h)(v), 3(h)(vii) above and 3(j) below.

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties.)

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
Establishment of temporary access roads	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Establishment of temporary access roads	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Establishment of temporary access roads	Change in land use/land potential	Land use	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Establishment of temporary access roads	Increased surface water run-off	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting vegetation clearance Implement storm water control measures Remedy during rehabilitation 	Low
Establishment of temporary access roads	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through controlling the use of pollutants Implement storm water control measures 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
					<ul style="list-style-type: none"> • Remedy during rehabilitation 	
Establishment of temporary access roads	Generation of dust and fumes	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Dust control measures 	Low
Establishment of temporary access roads	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Control working hours 	Low
Establishment of temporary access roads	Vegetation impacts due to site clearance and invader plants	Vegetation	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance & invader plant control measures • Remedy during rehabilitation 	Low
Establishment of temporary access roads	Wildlife disturbance, snaring, hunting and killing	Wildlife	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Limit staff numbers on-site 	Low
Establishment of temporary access roads	Disruption or destruction of ecosystem services	Ecosystems	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities 	Low
Establishment of temporary access roads	Visual impact	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Remedy during rehabilitation 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
Establishment of temporary access roads	Destruction/disturbance of archaeological & culturally important sites	Heritage resources	Drilling (phases 1, 2 & 3) decommissioning & closure	Very high	<ul style="list-style-type: none"> Implement recommended mitigation measures 	High
Establishment of temporary access roads	Negative impact on social fabric	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Establish community liaison and regularly discuss challenges 	Moderate
Establishment of temporary access roads	Positive social impacts due to job creation etc.	Socio-economical	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Employ local inhabitants and use local contractors as far as possible 	Moderate
Travelling to and from site	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Travelling to and from site	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Travelling to and from site	Increased surface water run-off	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Implement storm water control measures Remedy during rehabilitation 	Low
Travelling to and from site	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through controlling the use of pollutants Implement storm water control 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
					measures <ul style="list-style-type: none"> • Remedy during rehabilitation 	
Travelling to and from site	Generation of dust and fumes	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Dust control measures 	Low
Travelling to and from site	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Control working hours 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Change in land use/land potential	Land use	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Increased surface water run-off	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
					measures <ul style="list-style-type: none"> • Remedy during rehabilitation 	
Camp & drilling site establishment, core storage & processing facility construction/hire	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through controlling the use of pollutants • Implement storm water control measures • Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Generation of dust and fumes	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Dust control measures 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Control working hours 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Vegetation impacts due to site clearance and invader plants	Vegetation	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance & invader plant control measures • Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Wildlife disturbance, snaring, hunting and killing	Wildlife	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Limit staff numbers on-site 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
Camp & drilling site establishment, core storage & processing facility construction/hire	Disruption or destruction of ecosystem services	Ecosystems	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Visual impact	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Remedy during rehabilitation 	Low
Camp & drilling site establishment, core storage & processing facility construction/hire	Destruction/disturbance of archaeological & culturally important sites	Heritage resources	Drilling (phases 1, 2 & 3) decommissioning & closure	Very high	<ul style="list-style-type: none"> Implement recommended mitigation measures 	High
Camp & drilling site establishment, core storage & processing facility construction/hire	Negative impact on social fabric	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Establish community liaison and regularly discuss challenges 	Moderate
Camp & drilling site establishment, core storage & processing facility construction/hire	Positive social impacts due to job creation etc.	Socio-economical	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Employ local inhabitants and use local contractors as far as possible 	Moderate
Drilling	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Drilling	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
			& closure		<ul style="list-style-type: none"> • Remedy during rehabilitation 	
Drilling	Change in land use/land potential	Land use	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Low
Drilling	Increased surface water run-off	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	Low
Drilling	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through controlling the use of pollutants • Implement storm water control measures • Remedy during rehabilitation 	Low
Drilling	Generation of dust and fumes	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Dust control measures 	Low
Drilling	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Control working hours 	Low
Drilling	Vegetation impacts due to site	Vegetation	Drilling (phases 1, 2	Low	<ul style="list-style-type: none"> • Prevent through restricting 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
	clearance and invader plants		& 3) decommissioning & closure		vegetation clearance & invader plant control measures • Remedy during rehabilitation	
Drilling	Wildlife disturbance, snaring, hunting and killing	Wildlife	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	• Prevent through restricting prospecting related activities • Limit staff numbers on-site	Low
Drilling	Disruption or destruction of ecosystem services	Ecosystems	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	• Prevent through restricting prospecting related activities	Low
Drilling	Visual impact	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	• Remedy during rehabilitation	Low
Drilling	Destruction/disturbance of archaeological & culturally important sites	Heritage resources	Drilling (phases 1, 2 & 3) decommissioning & closure	Very high	• Implement recommended mitigation measures	High
Drilling	Negative impact on social fabric	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	• Establish community liaison and regularly discuss challenges	Moderate
Drilling	Positive social impacts due to job creation etc.	Socio-economical	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	• Employ local inhabitants and use local contractors as far as possible	Moderate

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
Lining and capping of boreholes	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Lining and capping of boreholes	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Lining and capping of boreholes	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through controlling the use of pollutants Implement storm water control measures Remedy during rehabilitation 	Low
Lining and capping of boreholes	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Control working hours 	Low
Decommissioning and rehabilitation of the camp/drill site	Soil compaction	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Decommissioning and rehabilitation of the camp/drill site	Soil pollution	Soil	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Remedy during rehabilitation 	Low
Decommissioning and rehabilitation of the	Change in land use/land	Land use	Drilling (phases 1, 2	Moderate	<ul style="list-style-type: none"> Prevent through restricting 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
camp/drill site	potential		& 3) decommissioning & closure		prospecting related activities <ul style="list-style-type: none"> • Remedy during rehabilitation 	
Decommissioning and rehabilitation of the camp/drill site	Increased surface water run-off	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	Low
Decommissioning and rehabilitation of the camp/drill site	Surface water pollution	Surface water	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through controlling the use of pollutants • Implement storm water control measures • Remedy during rehabilitation 	Low
Decommissioning and rehabilitation of the camp/drill site	Generation of dust and fumes	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Dust control measures 	Low
Decommissioning and rehabilitation of the camp/drill site	Noise and vibration	Air quality, human health	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Control working hours 	Low
Decommissioning and rehabilitation of the camp/drill site	Vegetation impacts due to site clearance and invader plants	Vegetation	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance & invader plant control measures • Remedy during rehabilitation 	Low

Name of activity (E.g. for prospecting: drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc.)	Potential impact (Including the potential impacts for cumulative impacts, e.g. dust, noise, surface drainage disturbance, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase in which impact is anticipated. (E.g. construction, commissioning, operational decommissioning, closure, post-closure.)	Significance if not mitigated.	Mitigation type (Modify, remedy, control, or stop through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.	Significance if mitigated.
Decommissioning and rehabilitation of the camp/drill site	Wildlife disturbance, snaring, hunting and killing	Wildlife	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities Limit staff numbers on-site 	Low
Decommissioning and rehabilitation of the camp/drill site	Disruption or destruction of ecosystem services	Ecosystems	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Prevent through restricting prospecting related activities 	Low
Decommissioning and rehabilitation of the camp/drill site	Visual impact	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Low	<ul style="list-style-type: none"> Remedy during rehabilitation 	Low
Decommissioning and rehabilitation of the camp/drill site	Negative impact on social fabric	Social	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Establish community liaison and regularly discuss challenges 	Moderate
Decommissioning and rehabilitation of the camp/drill site	Positive social impacts due to job creation etc.	Socio-economical	Drilling (phases 1, 2 & 3) decommissioning & closure	Moderate	<ul style="list-style-type: none"> Employ local inhabitants and use local contractors as far as possible 	Moderate

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix 5**.

k) Summary of specialist reports

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form.)

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations that have been included in the EIA report	Reference to section of report where specialist recommendations have been included
Ecology	<p>The impact of the prospecting activities on the fauna and flora habitat on the area will be low, considering the degraded state of the plains sections. These areas are more suitable for the layout plan and most of the impacts of the proposed prospecting activities will have a lower impact on the natural environment on the plains. Although the prospecting will modify small areas, the impact on the ecosystem functioning will be limited if rehabilitation measures are implemented correctly through the development of a rehabilitation plan for the site. Mitigation needs to be implemented to reduce the biodiversity impacts from</p>	<p>Although the prospecting will modify small areas, the impact on the ecosystem functioning will be limited if rehabilitation measures are implemented correctly through the development of a rehabilitation plan for the site.</p> <p>Habitat destruction</p> <ul style="list-style-type: none"> • The removal of indigenous trees and shrubs should only occur on the footprint area of the prospecting site and not over the larger area. • No trees may be trimmed or removed without the prior permission of the landowner. • Restrict the clearing and damage of plant growth in these areas to the footprint area. • Use existing facilities (e.g., access roads) to the extent possible to minimize the amount of new disturbance. • The proposed prospecting site should avoid the protected trees and / or flora species that occur in the project area; • Land clearing: minimize the extent and duration of land clearing; • Rehabilitation: revegetate or stabilise all disturbed areas as soon as possible. • All prospecting activities should be restricted to specific recommended areas, which should be demarcated and controlled. • Storage of fuel and other materials should be limited to demarcated 	Impact identification and assessment (Appendix 5), as well as Part B: Environmental Management Programme.

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations that have been included in the EIA report	Reference to section of report where specialist recommendations have been included
	<p>Moderate or High (without mitigation) to Negligible or Low (with mitigation). This will prevent any negative impacts on the ecosystem and will in all probability allow the degraded areas to recover to an enhanced state compared to the current state of the site. Considering the Springbokvlakte Thornveld and Mountain Bushveld vegetation types to be under constant pressure from prospecting activities, the preservation of natural corridors in the area should be considered a high priority. This will ensure that the ecosystem will still function normally.</p>	<p>areas.</p> <ul style="list-style-type: none"> • Layouts should be adapted to fit natural patterns rather than imposing rigid geometries. • Environmental awareness training should be provided to prospecting workers to ensure the protection of the habitat, fauna and flora and their sensitivity to conservation. • Utilise degraded / already impacted areas as far as possible for the prospecting area. • Where trenches pose a risk to animal safety, they should be adequately cordoned off to prevent animals falling in and getting trapped and/or injured. • The use of poisons for the control of rats, mice or other vermin should only be used after approval from an ecologist. <p>Habitat fragmentation</p> <ul style="list-style-type: none"> • Use existing facilities (e.g., access roads, parking lots, graded areas) to the fullest extent possible to minimize the amount of new disturbance. • Ensure protection of important resources by establishing protective buffers to exclude unintentional disturbance. • All possible efforts must be made to ensure as little disturbance as possible to the entire riparian zone during prospecting, including the smaller drainage channels or floodplains. • During prospecting, sensitive habitats must be avoided by prospecting vehicles and equipment, wherever possible, in order to reduce potential impacts. 	

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations that have been included in the EIA report	Reference to section of report where specialist recommendations have been included
		<ul style="list-style-type: none"> • Only necessary damage must be caused and, for example, unnecessary driving around in the veld or bulldozing natural habitat must not take place. <p>Spread of alien plant species</p> <ul style="list-style-type: none"> • Rehabilitate disturbed areas as quickly as possible to reduce the area where invasive species would be at a strong advantage and most easily able to establish. • Institute a monitoring programme to detect alien invasive species early, before they become established and, in the case of weeds, before the release of seeds. • Institute an eradication/control programme for early intervention if invasive species are detected, so that their spread to surrounding natural ecosystems can be prevented. <p>Snaring, hunting and killing of animals</p> <ul style="list-style-type: none"> • The minimum staff should be accommodated on the site. If practical, construction workers should stay in one of the nearby villages and transported daily to the site. • Avoid or limit travelling at night as much as possible. 	
Heritage	A total of six heritage sites were identified at five of the drilling point positions, while no heritage sites were identified at any of the other drillpoint positions. Assessments were made of the	<p>The following mitigation measures would be required for the sites with a Moderate and High Impact Risk.</p> <p>Mitigation measures required for the site with the informal African cemetery containing a large number of graves.</p> <ul style="list-style-type: none"> • The cemetery will be directly impacted upon by the proposed prospecting. The position of the drilling borehole and development 	Impact identification and assessment (Appendix 5), as well as Part B: Environmental Management Programme.

List of studies undertaken	Recommendations of specialist reports	Specialist recommendations that have been included in the EIA report	Reference to section of report where specialist recommendations have been included
	<p>impact risk of the proposed prospecting on the six sites located within the proposed development footprints. These calculations have revealed that the impact risk on three sites will fall within a range of Impact Class 2 which represents a Low Impact Risk, two sites fall within the Impact Class 3 which is a Moderate Impact risk and one site falls in Impact Class 4 which is High impact risk. While no mitigation would be required for the sites falling with a Low Impact Risk, mitigation would be required for those with a Moderate and High Impact Risk.</p>	<p>footprint should be changed to avoid the cemetery, with a clear buffer zone of at least +20m, especially since the cemetery is still in use. If this is not an option, a full grave relocation process must be implemented.</p> <p>Mitigation measures required for site with historical sheep/goat plunge dip with ramp, historical plunge dip for cattle with exit ramp and associated reservoir, storage bin and borehole, as well as circular concrete foundation of a second reservoir with a borehole.</p> <p>The heritage features at the site will be directly impacted upon by the proposed prospecting. Unless the position of the borehole can be moved, mitigation measures would include the recording of the layout and individual features of the three components of the site by measured drawing. Thereafter, a destruction permit can be applied for from the relevant heritage authority.</p> <p>Mitigation measures required for site with a very high density of mid stone age lithics on the soil surface.</p> <p>A mitigation permit will be required to enable an archaeologist to make a sample collection of lithics from the site. Once this has been done and on the submission of a report, a destruction permit can be applied for from SAHRA.</p>	

Attach copies of specialist reports as appendices.

Appendices 6a (Specialist report on the ecology (flora and fauna) for the proposed Moletlane prospecting right in the Capricorn District Municipality near Lebowakgomo, Limpopo Province) and 6b (Proposed Zebediela prospecting project, Capricorn district, Limpopo Province - Heritage Impact Assessment).

l) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment

The proposed prospecting activities will have impacts of various environment impacts. These include impacts on geology, topography, soils, land capability, land use, vegetation, wildlife, surface and ground water, socio-economic conditions and heritage resources. Some of the negative environmental and socio-economic impacts can be prevented, while most of the others can be minimised and rectified through appropriate arrangements or when the disturbed areas are rehabilitated. The prospecting may also result in some positive impacts related to employment and economic activities related to the prospecting operations.

(ii) Final site map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers .Attach as **Appendix**.

See Appendix 3.

(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

For phase 1 of the drilling programme, fourteen potentially negative impacts on the environment and the community were identified. One of these impacts, i.e. on heritage resources, is of a very high significance (in the absence of appropriate mitigation measures), two impacts, i.e. on vegetation and the social fabric are of moderate significance, while the remaining eleven negative impacts are of low significance and can be mitigated and addressed through rehabilitation. One positive impact of moderate significance was also identified, i.e. the positive direct and indirect economic impacts of the proposed prospecting activities.

Due to the more intensive nature of further drilling phases, similar impacts will occur, but the significance may increase. It is, however, impossible to assess these impacts accurately at present, due to the fact that the positions of boreholes for future drilling phases have not been established.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr;

(Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.)

The closure of the prospecting operation must incorporate a process that will start at the commencement and continue throughout the life of the prospecting activities. The prospecting operations must be closed efficiently and cost effectively and the land must be rehabilitated, as far as is practicable, to its natural state, or to a standard or land use which conforms with the concept of sustainable development. Rehabilitation of the camp sites and drilling areas must be done in such a way that it will blend in with the surrounding landscape and allow normal surface drainage to continue. Furthermore, it must ensure that new landscape features are stable and do not pose any safety hazard to humans and animals.

The detailed impact management objectives and outcomes are summarised in Table 3.

Table 3: Detailed impact management objectives and outcomes

Environmental impact	Impact management objective	Impact management outcome
Soil compaction	<ul style="list-style-type: none"> • Prevent or minimise soil compaction 	<ul style="list-style-type: none"> • Minimal soil compaction, limited to access roads and drilling sites
Soil pollution	<ul style="list-style-type: none"> • Prevent or minimise soil pollution 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on soil quality
Change in land use/land potential	<ul style="list-style-type: none"> • Minimise the impacts of prospecting on normal farming/domestic activities • Retain as many as possible of the original land features that provides identity to the land use of the site 	<ul style="list-style-type: none"> • Replace all removed/damaged domestic/farming infrastructure • Limit vegetation clearance, soil disturbance and compaction
Increased surface water run-off	<ul style="list-style-type: none"> • Prevent or minimise the disturbance of vegetation and soil • Minimise and control storm water runoff 	<ul style="list-style-type: none"> • Minimal disturbance of vegetation and soil • Minimal surface water run-off and soil erosion
Surface water pollution	<ul style="list-style-type: none"> • Prevent or minimise water pollution 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on the water quality of downstream water courses
Generation of dust and fumes	<ul style="list-style-type: none"> • Prevent and/or minimise dust and fumes 	<ul style="list-style-type: none"> • Minimal release of dust and fumes
Noise and vibration	<ul style="list-style-type: none"> • Prevent and/or minimise noise and vibration 	<ul style="list-style-type: none"> • Minimal noise and vibration nuisance
Vegetation impacts due to site clearance and invader plants	<ul style="list-style-type: none"> • Prevent and/or minimise vegetation loss • Control alien invasive plants 	<ul style="list-style-type: none"> • Minimal vegetation loss and invader plant spread
Wildlife disturbance, snaring, hunting and killing	<ul style="list-style-type: none"> • Prevent and/or minimise disturbance and snaring, hunting 	<ul style="list-style-type: none"> • Minimal disturbance and snaring, hunting and killing of

Environmental impact	Impact management objective	Impact management outcome
	and killing of wildlife species	wildlife species
Disruption or destruction of ecosystem services	<ul style="list-style-type: none"> • Prevent and/or minimise disruption or destruction of ecosystem services 	<ul style="list-style-type: none"> • Minimal disruption or destruction of ecosystem services
Visual impact	<ul style="list-style-type: none"> • Minimise visual disturbance 	<ul style="list-style-type: none"> • Retain as much of the baseline aesthetic value of the area as possible
Destruction/disturbance of archaeological & culturally important sites	<ul style="list-style-type: none"> • Prevent destruction of informal African cemetery, historical plunge dips and associated infrastructure • Obtain mitigation and destruction permits for the site with very high density of mid stone age lithics 	<ul style="list-style-type: none"> • No damage to the informal African cemetery, historical plunge dips and associated infrastructure • Destruction permitted after sample collection of lithics by an archaeologist
Negative impact on social fabric	<ul style="list-style-type: none"> • Prevent and/or minimise adverse social impacts 	<ul style="list-style-type: none"> • Minimal adverse social impacts
Positive impact on society through job creation etc.	<ul style="list-style-type: none"> • Optimise positive social impacts 	<ul style="list-style-type: none"> • Optimal employment opportunities and other positive social impacts

n) Aspects for inclusion as conditions of authorisation

(Any aspects which must be made conditions of the Environmental Authorisation.)

All mitigation measures as contained in the Environmental Management Programme must be implemented.

An additional heritage impact assessment must be done prior to the commencement of phases 2 and 3 of the drilling.

The Environmental Management Programme must also be revised and amended if needed, once the positions of boreholes for phases 2 and 3 drilling has been established.

o) Description of any assumptions, uncertainties and gaps in knowledge

(Which relate to the assessment and mitigation measures proposed.)

The large study area did not allow for the finer level of specialist assessment that can be obtained in smaller study areas. Therefore, data collection in this study relied heavily on data from representative, homogenous sections of vegetation units, as well as general observations, aerial photograph analysis, generic data and a desktop analysis. Thus, even though it might be assumed that survey findings are representative of the ecosystem of the Moletlane Project area, the possibility exists that individual plants species might have been missed due to the nature of the terrain (steep, mountainous slopes).

Therefore, maintaining due cognisance of the integrity and accuracy of the ecological survey, the ecological resources identified during the study do not necessarily represent all the ecological resources present in the project area.

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

(i) Reasons why the activity should be authorized or not

On the condition that the mitigation measures outlined in this report are undertaken, any development impacts on the proposed development will be adequately mitigated to allow the development to take place. As such, and on this condition, no heritage reasons can be given for the development not to continue.

(ii) Conditions that must be included in the authorisation

All mitigation measures as contained in the Environmental Management Programme must be implemented.

An additional heritage impact assessment must be done prior to the commencement of phases 2 and 3 of the drilling.

The Environmental Management Programme must also be revised and amended if needed, once the positions of boreholes for phases 2 and 3 drilling has been established.

q) Period for which the Environmental Authorisation is required

5 years

r) Undertaking

(Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment report and the Environmental Management Programme report.)

The undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment report and the Environmental Management Programme report

s) Financial Provision

(State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.)

(i) Explain how the aforesaid amount was derived

Rehabilitation cost is included in the cost of the prospecting drilling programme, which is R18 778 020.

(ii) Confirm that this amount can be provided for from operating expenditure

(Confirm that the amount is anticipated to be an operating cost and is provided for as such in the Mining Work Programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be.)

The financial provision is anticipated to be an operational cost and is provided for in the Prospecting Work Programme.

t) Specific Information required by the Competent Authority

(i) Compliance with the provisions of sections 24(4)(a) and (b) read with section 24(3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998). The EIA report must include the:

1) Impact on the socio-economic conditions of any directly affected person

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix**.)

Assessment of the impact of the prospecting activities on the socio-economic conditions of any directly affected person is included in this Basic Assessment Report.

No separate investigation report has been done.

2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.

(Provide the results of investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the

national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 6** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

Assessment of the impact of the prospecting activities on any national estate has been done by a heritage specialist. The investigation report is attached as Appendix 6b and the mitigation is reflected in 2.5.3, 2.11.6 and 2.12 in this report.

u) Other matters required in terms of sections 24(4)(a) and (b) of the Act.

(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix 4**).

With prospecting activities, no site alternatives are considered, because the site locality has been carefully chosen, based on the site geology, which is fixed in the landscape. The only alternative that has been considered is site lay-out alternatives, where positioning of prospecting boreholes and lay-out of prospecting sites will be done in such a way that environmental harm is prevented as far as possible and care is taken to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place. No technology alternatives has been investigated, based on the available affordable prospecting technologies, with no reasonable or feasible alternatives to percussion and diamond drilling.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft Environmental Management Programme

a) Details of the EAP

(Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required.)

EAP: Theunis Meyer

Company: Centre for Environmental Management, North-West University

Professional affiliation/registration: SACNASP 40029/08

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b) Description of the aspects of the activity

(Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section 1(h) herein as required.)

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in Part A, section 1(h) of this report, as required.

c) Composite map

(Provide a map (Attached as an Appendix) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.)

See Appendix 3.

d) Description of impact management objectives, including management statements

(i) Determination of closure objectives

(Ensure that the closure objectives are informed by the type of environment described.)

The closure of the prospecting operation must incorporate a process that will start at the commencement and continue throughout the life of the prospecting activities. The

prospecting operations must be closed efficiently and cost effectively and the land must be rehabilitated, as far as is practicable, to its natural state, or to a standard or land use which conforms with the concept of sustainable development. Rehabilitation of the camp sites and drilling areas must be done in such a way that it will blend in with the surrounding landscape and allow normal surface drainage to continue. Furthermore, it must ensure that new landscape features are stable and do not pose any safety hazard to humans and animals.

The detailed closure objectives and outcomes are summarised in Table 3.

Table 3: Detailed closure objectives and outcomes

Environmental impact	Closure objective	Closure outcome
Soil compaction	<ul style="list-style-type: none"> • Prevent or minimise soil compaction 	<ul style="list-style-type: none"> • Minimal soil compaction, limited to access roads and drilling sites
Soil pollution	<ul style="list-style-type: none"> • Prevent or minimise soil pollution 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on soil quality
Change in land use/land potential	<ul style="list-style-type: none"> • Minimise the impacts of prospecting on normal farming/domestic activities • Retain as many as possible of the original land features that provides identity to the land use of the site 	<ul style="list-style-type: none"> • Replace all removed/damaged domestic/farming infrastructure • Limit vegetation clearance, soil disturbance and compaction
Increased surface water run-off	<ul style="list-style-type: none"> • Prevent or minimise the disturbance of vegetation and soil • Minimise and control storm water runoff 	<ul style="list-style-type: none"> • Minimal disturbance of vegetation and soil • Minimal surface water run-off and soil erosion
Surface water pollution	<ul style="list-style-type: none"> • Prevent or minimise water pollution 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on the water quality of downstream water courses
Generation of dust and fumes	<ul style="list-style-type: none"> • Prevent and/or minimise dust and fumes 	<ul style="list-style-type: none"> • Minimal release of dust and fumes
Noise and vibration	<ul style="list-style-type: none"> • Prevent and/or minimise noise and vibration 	<ul style="list-style-type: none"> • Minimal noise and vibration nuisance
Vegetation impacts due to site clearance and invader plants	<ul style="list-style-type: none"> • Prevent and/or minimise vegetation loss • Control alien invasive plants 	<ul style="list-style-type: none"> • Minimal vegetation loss and invader plant spread
Wildlife disturbance, snaring, hunting and killing	<ul style="list-style-type: none"> • Prevent and/or minimise disturbance and snaring, hunting and killing of wildlife species 	<ul style="list-style-type: none"> • Minimal disturbance and snaring, hunting and killing of wildlife species

Environmental impact	Closure objective	Closure outcome
Disruption or destruction of ecosystem services	<ul style="list-style-type: none"> • Prevent and/or minimise disruption or destruction of ecosystem services 	<ul style="list-style-type: none"> • Minimal disruption or destruction of ecosystem services
Visual impact	<ul style="list-style-type: none"> • Minimise visual disturbance 	<ul style="list-style-type: none"> • Retain as much of the baseline aesthetic value of the area as possible
Destruction/disturbance of archaeological & culturally important sites	<ul style="list-style-type: none"> • Prevent destruction of informal African cemetery, historical plunge dips and associated infrastructure • Obtain mitigation and destruction permits for the site with very high density of mid stone age lithics 	<ul style="list-style-type: none"> • No damage to the informal African cemetery, historical plunge dips and associated infrastructure • Destruction permitted after sample collection of lithics by an archaeologist
Negative impact on social fabric	<ul style="list-style-type: none"> • Prevent and/or minimise adverse social impacts 	<ul style="list-style-type: none"> • Minimal adverse social impacts
Positive impact on society through job creation etc.	<ul style="list-style-type: none"> • Optimise positive social impacts 	<ul style="list-style-type: none"> • Optimal employment opportunities and other positive social impacts

(ii) Volumes and rate of water use required for the operation

Not known at present

(iii) Has a water use licence has been applied for?

No water use license has been applied for, as it is foreseen that the water use will be generally authorised.

(iv)Impacts to be mitigated in their respective phases

(Measures to rehabilitate the environment affected by the undertaking of any listed activity.)

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMPr must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.
Establishment of temporary access roads	Phase 1, 2 and 3 drilling	4 ha	<ul style="list-style-type: none"> • Utilise existing roads and tracks as far as possible for the prospecting activities. • Ensure that temporary access roads are maintained in good condition • Rehabilitate temporary access roads with indigenous grasses where necessary 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land capability. 	Upon cessation of the prospecting operations
Travelling to and from site	Phase 1, 2 and 3 drilling		<ul style="list-style-type: none"> • Utilise existing roads and tracks as far as possible • Limit travelling speed to limit noise and dust impacts on surrounding communities • Regularly water (spray) exposed soil surfaces for dust control, where necessary 	<ul style="list-style-type: none"> • No prescribed standards or practices 	As long as drilling continues
Establishment of camp site / prospecting area	Phase 1, 2 and 3 drilling	2.5 ha	<ul style="list-style-type: none"> • Locate the prospecting sites as indicated by the geologist. • Restrict the disturbance of land to the planned, active prospecting sites only. • Take care to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use. 	Upon cessation of the prospecting operations

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMP _r must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.
			prospecting site will take place. <ul style="list-style-type: none"> • Site and fence camp sites in consultation with the land-owner/occupier. • Communicate and implement a strict no-kill policy • Regularly inspect the surrounding areas for snares on a weekly basis • Rehabilitate all prospecting sites as part of the ongoing prospecting operations. 		
Erection of core storage and processing facility	Phase 1 drilling	300 m ²	<ul style="list-style-type: none"> • Rent an existing facility as core storage and processing facility where possible • Restrict the disturbance of land to the planned, core storage and processing facility only. • Take care to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated core storage and processing facility will take place. • Site and fence the core storage and processing facility in consultation with the land-owner/occupier. • Limit vegetation clearance, soil disturbance and compaction • Limit the on-site storage of hazardous 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use. 	Upon cessation of the prospecting operations

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMPr must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.)
			substances to small quantities <ul style="list-style-type: none"> • Ensure that Material Safety Data Sheets (MSDS) are available for all chemicals used on-site • Develop and implement a Standard Operating Procedure (SOP) for hazardous substances management • Use drip trays or lined storage areas to prevent spillages from vehicles and other equipment such as generators • Rehabilitate the core storage and processing facility site as part of the ongoing prospecting operations. 		
Phase 1 borehole drilling	Phase 1 drilling	2.5 ha	<ul style="list-style-type: none"> • Restrict the disturbance of land to the planned, active prospecting sites only. • Take care to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place. • Site and fence camp sites in consultation with the land-owner/occupier. • Limit vegetation clearance, soil disturbance and compaction • Prevent destruction of informal African cemetery, historical plunge dips and 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use. 	Upon cessation of phase 1 drilling operations

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMPr must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.)
			<p>associated infrastructure</p> <ul style="list-style-type: none"> • Obtain mitigation and destruction permits for the site with very high density of mid stone age lithics • Restrict prospecting activities to normal working (daylight) hours • Limit the on-site storage of hazardous substances to small quantities • Ensure that Material Safety Data Sheets (MSDS) are available for all chemicals used on-site • Develop and implement a Standard Operating Procedure (SOP) for hazardous substances management • Use drip trays or lined storage areas to prevent spillages from vehicles and other equipment such as generators • Rehabilitate all prospecting sites as part of the ongoing prospecting operations. • Rehabilitate all prospecting sites in such a way that it blend in with the surrounding landscape and allow normal surface drainage to continue. • Rehabilitation all prospecting sites in such a way that the new landscape 		

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMPr must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.)
			features would be stable and would not pose any safety hazard to humans and animals.		
Phases 2 & 3 borehole drilling	Phases 2 & 3 drilling		<ul style="list-style-type: none"> • Restrict the disturbance of land to the planned, active prospecting sites only. • Take care to ensure that no new or unnecessary destruction of areas or habitats, other than the demarcated prospecting site will take place. • Site and fence camp sites in consultation with the land-owner/occupier. • Limit vegetation clearance, soil disturbance and compaction • Prevent destruction of informal African cemetery, historical plunge dips and associated infrastructure • Obtain mitigation and destruction permits for the site with very high density of mid stone age lithics • Restrict prospecting activities to normal working (daylight) hours • Limit the on-site storage of hazardous substances to small quantities • Ensure that Material Safety Data Sheets (MSDS) are available for all chemicals 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use. 	Upon cessation of phases 2 & 3 drilling operations

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMP _r must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.
			<p>used on-site</p> <ul style="list-style-type: none"> • Develop and implement a Standard Operating Procedure (SOP) for hazardous substances management • Use drip trays or lined storage areas to prevent spillages from vehicles and other equipment such as generators • Rehabilitate all prospecting sites as part of the ongoing prospecting operations. • Rehabilitate all prospecting sites in such a way that it blend in with the surrounding landscape and allow normal surface drainage to continue. • Rehabilitation all prospecting sites in such a way that the new landscape features would be stable and would not pose any safety hazard to humans and animals. 		
Decommissioning and rehabilitation of the camp site / prospecting area	Rehabilitation, Closure & Post-closure	0.5 ha	<ul style="list-style-type: none"> • Decommission all prospecting related infrastructure • Replace all removed/damaged domestic/farming infrastructure • Rehabilitate all prospecting sites as part of the ongoing prospecting operations. • Rehabilitate all prospecting sites in such 	<ul style="list-style-type: none"> • No prescribed standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use. 	Upon cessation of drilling operations

Activities (E.g. For prospecting: drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.	Phase (Of operation in which activity will take place. State: planning and design, pre-construction, construction, operational, rehabilitation, closure, post closure.)	Size and scale of disturbance (Volumes, tonnages and hectares or m ² .)	Mitigation measures (Describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants.)	Compliance with standards (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)	Time period for implementation (Describe the time period when the measures in the EMPr must be implemented. With regard to rehabilitation: This must take place at the earliest opportunity. Therefore state: Upon cessation of the individual activity, or of mining, bulk sampling or prospecting, as the case may be.
			<p>a way that it blend in with the surrounding landscape and allow normal surface drainage to continue.</p> <ul style="list-style-type: none"> • Rehabilitation all prospecting sites in such a way that the new landscape features would be stable and would not pose any safety hazard to humans and animals. 		

e) Impact management outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph ???.)

Activity (Whether listed or not, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, storm water control, berms, workshops, processing plant, power lines, roads, pipelines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase (In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure, post-closure.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control or through management & monitoring; • Remedy through rehabilitation. 	Standard to be achieved (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Establish temporary access roads Travelling to and from site Camp & drilling site establishment Erect and/or hire of core storage and processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of the camp/drill site	Soil compaction	Soil	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Minimal soil compaction, limited to access roads and drilling sites
Establish temporary access roads Travelling to and from site Camp & drilling site establishment Erect and/or hire of core storage and processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of the camp/drill site					

Activity (Whether listed or not, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, storm water control, berms, workshops, processing plant, power lines, roads, pipelines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase (In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure, post-closure.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control or through management & monitoring; • Remedy through rehabilitation. 	Standard to be achieved (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Establish temporary access roads	Change in land use/land potential	Land use	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Minimal impact on land use/land potential
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Increased surface water runoff	Surface water	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Minimal disturbance of vegetation and soil • Minimal surface water run-off and soil erosion
Travelling to and from site					
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Surface water pollution	Surface water	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on the water quality of downstream water courses
Travelling to and from site					
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Lining and capping of boreholes					
Decommissioning & rehabilitation of the camp/drill site					

Activity (Whether listed or not, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, storm water control, berms, workshops, processing plant, power lines, roads, pipelines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase (In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure, post-closure.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control or through management & monitoring; • Remedy through rehabilitation. 	Standard to be achieved (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Establish temporary access roads	Generation of dust and fumes	Air quality, human health	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Dust control measures 	<ul style="list-style-type: none"> • Minimal release of dust and fumes
Travelling to and from site					
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Noise and vibration	Air quality	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Control working hours 	<ul style="list-style-type: none"> • Minimal noise and vibration nuisance
Travelling to and from site					
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Lining and capping of boreholes					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Vegetation impacts due to site clearance and invader plants	Vegetation	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance & invader plant control measures • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Minimal vegetation loss and invader plant spread
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Decommissioning & rehabilitation of the camp/drill site					

Activity (Whether listed or not, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, storm water control, berms, workshops, processing plant, power lines, roads, pipelines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase (In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure, post-closure.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control or through management & monitoring; • Remedy through rehabilitation. 	Standard to be achieved (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Establish temporary access roads	Wildlife disturbance, snaring, hunting and killing	Wildlife	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Limit staff numbers on-site 	<ul style="list-style-type: none"> • Minimal disturbance and snaring, hunting and killing of wildlife species
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Disruption or destruction of ecosystem services due to prospecting activities	Ecosystem services	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities 	<ul style="list-style-type: none"> • Minimal disruption or destruction of ecosystem services
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Visual impact caused by the clearance of vegetation, as well as construction of ancillary buildings and structures	Social	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Retain as much of the baseline aesthetic value of the area as possible
Camp & drilling site establishment					
Erect and/r hire of core storage and processing facility					
Decommissioning & rehabilitation of the camp/drill site					

Activity (Whether listed or not, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, storm water control, berms, workshops, processing plant, power lines, roads, pipelines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Aspects affected	Phase (In which impact is anticipated, e.g. construction, commissioning, operational, decommissioning, closure, post-closure.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control or through management & monitoring; • Remedy through rehabilitation. 	Standard to be achieved (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Establish temporary access roads	Destruction/disturbance of archaeological & culturally important sites	Heritage resources	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Implement recommended mitigation measures 	<ul style="list-style-type: none"> • No damage to the African cemetery, historical plunge dips & associated infrastructure • Destruction permitted after lithics sample collection by an archaeologist
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Establish temporary access roads	Negative impact on social fabric	Social	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Establish community liaison and regularly discuss challenges 	<ul style="list-style-type: none"> • Minimal adverse social impacts
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Decommissioning & rehabilitation of the camp/drill site					
Establish temporary access roads	Positive social impacts due to job creation etc.	Socio-economic	Phases 1, 2 & 3 drilling, decommissioning & closure	<ul style="list-style-type: none"> • Employ local inhabitants and use local contractors as far as possible 	<ul style="list-style-type: none"> • Optimal employment opportunities and other positive social impacts
Camp & drilling site establishment					
Erect and/or hire of core storage and processing facility					
Drilling					
Decommissioning & rehabilitation of the camp/drill site					

f) Impact management actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved.)

Activity (Whether listed or not listed, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control; • Control through management and monitoring; and/or • Remedy through rehabilitation. 	Implementation time period (Describe the time period when the measures in the EMPr must be implemented. Rehabilitation must take place at the earliest opportunity. Therefore state upon cessation of the individual activity, or upon the cessation of mining, bulk sampling or alluvial diamond prospecting, etc.	Compliance with standards (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)
Establish temporary access roads Travelling to and from site Camp & drilling site establishment Erect and/or hire core storage & processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of camp/drill sites	Soil compaction	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.
Establish temporary access roads Travelling to and from site Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of camp/drill site	Soil pollution	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.

Activity (Whether listed or not listed, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control; • Control through management and monitoring; and/or • Remedy through rehabilitation. 	Implementation time period (Describe the time period when the measures in the EMPr must be implemented. Rehabilitation must take place at the earliest opportunity. Therefore state upon cessation of the individual activity, or upon the cessation of mining, bulk sampling or alluvial diamond prospecting, etc.	Compliance with standards (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Decommissioning & rehabilitation of camp/drill site	Change in land use/land potential	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.
Establish temporary access roads Travelling to and from site Camp & drill site establishment Erect and/or hire of core storage and processing facility Decommissioning & rehabilitation of the camp/drill site	Increased surface water runoff	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.
Establish temporary access roads Travelling to and from site Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of the camp/drill site	Surface water pollution	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance • Implement storm water control measures • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.

Activity (Whether listed or not listed, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control; • Control through management and monitoring; and/or • Remedy through rehabilitation. 	Implementation time period (Describe the time period when the measures in the EMPr must be implemented. Rehabilitation must take place at the earliest opportunity. Therefore state upon cessation of the individual activity, or upon the cessation of mining, bulk sampling or alluvial diamond prospecting, etc.	Compliance with standards (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)
Establish temporary access roads Travelling to and from site Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Decommissioning & rehabilitation of camp/drill site	Generation of dust and fumes	<ul style="list-style-type: none"> • Dust control measures 	<ul style="list-style-type: none"> • During prospecting activities 	<ul style="list-style-type: none"> • No identified standards or practices
Establish temporary access roads Travelling to and from site Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Lining and capping of boreholes Decommissioning & rehabilitation of camp/drill site	Noise and vibration	<ul style="list-style-type: none"> • Control working hours 	<ul style="list-style-type: none"> • During prospecting activities 	<ul style="list-style-type: none"> • No identified standards or practices
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility Decommissioning & rehabilitation of camp/drill site	Vegetation impacts due to site clearance and invader plants	<ul style="list-style-type: none"> • Prevent through restricting vegetation clearance & invader plant control measures • Remedy during rehabilitation 	Upon cessation of the prospecting operations	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.

Activity (Whether listed or not listed, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control; • Control through management and monitoring; and/or • Remedy through rehabilitation. 	Implementation time period (Describe the time period when the measures in the EMPr must be implemented. Rehabilitation must take place at the earliest opportunity. Therefore state upon cessation of the individual activity, or upon the cessation of mining, bulk sampling or alluvial diamond prospecting, etc.	Compliance with standards (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Decommissioning & rehabilitation of camp/drill site	Wildlife disturbance, snaring, hunting and killing	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities • Limit staff numbers on-site 	<ul style="list-style-type: none"> • Upon cessation of the prospecting operations 	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility Decommissioning & rehabilitation of camp/drill site	Disruption or destruction of ecosystem services due to prospecting activities	<ul style="list-style-type: none"> • Prevent through restricting prospecting related activities 	<ul style="list-style-type: none"> • Upon cessation of the prospecting operations 	<ul style="list-style-type: none"> • No identified standards or practices • Rehabilitated to the state that it is suitable for the predetermined and agreed land use.
Establish temporary access roads Camp & drill site establishment Erect and/r hire of core storage and processing facility Decommissioning & rehabilitation of camp/drill site	Visual impact caused by the clearance of vegetation, as well as construction of ancillary buildings and structures	<ul style="list-style-type: none"> • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Remedy during rehabilitation 	<ul style="list-style-type: none"> • Retain as much of the baseline aesthetic value of the area as possible
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility	Destruction/disturbance of archaeological & culturally important sites	<ul style="list-style-type: none"> • Implement recommended mitigation measures 	<ul style="list-style-type: none"> • During prospecting activities 	<ul style="list-style-type: none"> • No identified standards or practices

Activity (Whether listed or not listed, e.g. excavations, blasting, stockpiles, discard dumps or dams, loading, hauling and transport, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)	Potential impact (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	Mitigation type (Modify, remedy, control, or stop through, e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g.: <ul style="list-style-type: none"> • Modify through alternative method; • Control through noise control; • Control through management and monitoring; and/or • Remedy through rehabilitation. 	Implementation time period (Describe the time period when the measures in the EMPr must be implemented. Rehabilitation must take place at the earliest opportunity. Therefore state upon cessation of the individual activity, or upon the cessation of mining, bulk sampling or alluvial diamond prospecting, etc.	Compliance with standards (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities.)
Establish temporary access roads Camp & drilling site establishment Erect and/or hire of core storage and processing facility Drilling Decommissioning & rehabilitation of camp/drill site	Negative impact on social fabric	<ul style="list-style-type: none"> • Establish community liaison and regularly discuss challenges 	<ul style="list-style-type: none"> • During prospecting activities 	<ul style="list-style-type: none"> • No prescribed standards or practices
Establish temporary access roads Camp & drill site establishment Erect and/or hire of core storage and processing facility Drilling Decommissioning & rehabilitation of the camp/drill site	Positive social impacts due to job creation etc.	<ul style="list-style-type: none"> • Employ local inhabitants and use local contractors as far as possible 	<ul style="list-style-type: none"> • During prospecting activities 	<ul style="list-style-type: none"> • No prescribed standards or practices

i) Financial provision

1) Determination of the amount of financial provision

a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation

The closure of the prospecting operation incorporates a process that will start at the commencement of the operation and continue throughout the life of the prospecting operation. The prospecting operations will be closed efficiently and cost effectively.

The land will be rehabilitated, as far as is practicable, to its natural state, or to a standard or land use which conforms with the concept of sustainable development. Rehabilitation of the camp sites and drilling areas will be done in such a way that it will blend in with the surrounding landscape and allow normal surface drainage to continue. Furthermore, it will ensure that new landscape features are stable and do not pose any safety hazard to humans and animals.

The detailed closure objectives and outcomes are summarised in Table 4.

Table 4: Detailed closure objectives and outcomes

Environmental impact	Closure objective	Closure outcome
Soil compaction	<ul style="list-style-type: none">• Prevent or minimise soil compaction	<ul style="list-style-type: none">• Minimal soil compaction, limited to access roads and drilling sites
Soil pollution	<ul style="list-style-type: none">• Prevent or minimise soil pollution	<ul style="list-style-type: none">• Minimal contaminant spillages• Minimal impact on soil quality
Change in land use/land potential	<ul style="list-style-type: none">• Minimise the impacts of prospecting on normal farming/domestic activities• Retain as many as possible of the original land features that provides identity to the land use of the site	<ul style="list-style-type: none">• Replace all removed/damaged domestic/farming infrastructure• Limit vegetation clearance, soil disturbance and compaction
Increased surface water run-off	<ul style="list-style-type: none">• Prevent or minimise the disturbance of vegetation and soil• Minimise and control storm water runoff	<ul style="list-style-type: none">• Minimal disturbance of vegetation and soil• Minimal surface water run-off and soil erosion

Environmental impact	Closure objective	Closure outcome
Surface water pollution	<ul style="list-style-type: none"> • Prevent or minimise water pollution 	<ul style="list-style-type: none"> • Minimal contaminant spillages • Minimal impact on the water quality of downstream water courses
Generation of dust and fumes	<ul style="list-style-type: none"> • Prevent and/or minimise dust and fumes 	<ul style="list-style-type: none"> • Minimal release of dust and fumes
Noise and vibration	<ul style="list-style-type: none"> • Prevent and/or minimise noise and vibration 	<ul style="list-style-type: none"> • Minimal noise and vibration nuisance
Vegetation impacts due to site clearance and invader plants	<ul style="list-style-type: none"> • Prevent and/or minimise vegetation loss • Control alien invasive plants 	<ul style="list-style-type: none"> • Minimal vegetation loss and invader plant spread
Wildlife disturbance, snaring, hunting and killing	<ul style="list-style-type: none"> • Prevent and/or minimise disturbance and snaring, hunting and killing of wildlife species 	<ul style="list-style-type: none"> • Minimal disturbance and snaring, hunting and killing of wildlife species
Disruption or destruction of ecosystem services	<ul style="list-style-type: none"> • Prevent and/or minimise disruption or destruction of ecosystem services 	<ul style="list-style-type: none"> • Minimal disruption or destruction of ecosystem services
Visual impact	<ul style="list-style-type: none"> • Minimise visual disturbance 	<ul style="list-style-type: none"> • Retain as much of the baseline aesthetic value of the area as possible
Destruction/disturbance of archaeological & culturally important sites	<ul style="list-style-type: none"> • Prevent destruction of informal African cemetery, historical plunge dips and associated infrastructure • Obtain mitigation and destruction permits for the site with very high density of mid stone age lithics 	<ul style="list-style-type: none"> • No damage to the informal African cemetery, historical plunge dips and associated infrastructure • Destruction permitted after sample collection of lithics by an archaeologist
Negative impact on social fabric	<ul style="list-style-type: none"> • Prevent and/or minimise adverse social impacts 	<ul style="list-style-type: none"> • Minimal adverse social impacts
Positive impact on society through job creation etc.	<ul style="list-style-type: none"> • Optimise positive social impacts 	<ul style="list-style-type: none"> • Optimal employment opportunities and other positive social impacts

The closure objectives are completely aligned to the baseline environment and will have minimal permanent impacts on the baseline environment.

b) Confirm specifically that the environmental objectives in relation to closure have been consulted with the landowner and interested and affected parties

The environmental objectives in relation to closure have been consulted with the landowner and interested and affected parties, through the provision of the Background Information Document, as well as the draft Basic Assessment Report and Environmental Management Programme that was made available to all of the above parties for review and feedback.

c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure

Rehabilitation of the camp sites and drilling areas will be done in such a way that it will blend in with the surrounding landscape and allow normal surface drainage to continue. All infrastructure will be removed and the area rehabilitated. No backfilling of boreholes will take place, but the boreholes will be marked and mapped for future reference. Any soil/gravel from the boreholes will be levelled and rehabilitated. Furthermore, it will ensure that new landscape features will be stable and not pose any safety hazard to humans and animals.

Due to the limited nature of the environmental impacts, the scale and aerial extent of the main mining activities are similar to the scale and aerial extent of the prospecting activities, which are indicated in Appendix 3. Therefore, no additional rehabilitation map is required.

d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives

The closure objectives are completely aligned to the baseline environment and will have minimal permanent impacts on the baseline environment. The rehabilitation plan will facilitate the implementation of the closure objectives.

e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline

Rehabilitation cost is included in the cost of the prospecting drilling programme, which is R18 778 020.

f) Confirm that the financial provision will be provided as determined

The financial provision is anticipated to be an operational cost and is provided for in the Prospecting Work Programme.

Mechanisms for monitoring compliance with and performance assessment against the Environmental Management Programme and reporting thereon, including:

- g) Monitoring of impact management actions;**
- h) Monitoring and reporting frequency;**
- i) Responsible persons;**
- j) Time period for implementing impact management actions; and**
- k) Mechanism for monitoring compliance**

The following environmental impacts need to be monitored:

- Vegetation impacts
- Impacts on agricultural land use, archaeological & cultural sites and sensitive landscapes
- Soil erosion impacts
- Surface and ground water pollution

A bi-annual monitoring report will be compiled, indicating the trends of the monitoring results according to the mentioned objectives and variables and as a minimum include the following topics:

- Introduction with reasons for the report linked to conditions of approval
- Results of the monitoring program with interpretation of the data
- Proposed remedial actions and action plan
- Review of the suitability, adequacy, and effectiveness of the monitoring programme
- Conclusions

EMPr audits, compliant with Regulation 34 of the EIA regulations, published in GN R 982 in terms of the National Environmental Management Act, 2002 (Act No. 107 of 1998) will be conducted by an independent person with the relevant environmental auditing expertise until closure.

The environmental audit report must determine the ability of the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an ongoing basis and to sufficiently provide for the , avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and the level of compliance with the provisions of environmental authorisation, EMPr and where applicable the closure plan.

Source activity	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities (for the execution of the monitoring programmes)	Monitoring and reporting frequency and time periods for implementing impact management actions
Access roads, camp sites and drilling operations	Temporary loss of land capability and use to support agricultural activity such as crop production and grazing	Visual inspections to verify that the surface area disturbance is always kept to a minimum as required in the EMP.	Project manager and site manager	Weekly monitoring and reporting. Remedial impact management actions should be taken within 1 day of any problems observed.
Access roads, camp sites and drilling operations	Soil erosion that not only affect the land capability, but may also contribute to surface water pollution	Visual inspection of all roads, camp sites, prospecting sites and rehabilitated areas for signs of erosion, bare patches, dongas, etc. and stability of surface run-off containment structures.	Project manager and site manager	Monthly monitoring and reporting. Remedial impact management actions should be taken within 7 days of any problems observed.
Access roads, camp sites and drilling operations	Destruction of natural vegetation and introduction of invader plants	Visual inspection of all disturbed and rehabilitated areas to ensure that rehabilitation has been successful and invader plants does not invade such areas	Project manager and site manager	Monthly monitoring and reporting. Remedial impact management actions should be taken within 7 days of any problems observed.
Access roads, camp sites and drilling operations	Soil pollution and possible surface and ground water pollution due to oil, diesel and drilling fluid spillages	Visual inspection of the roads, prospecting sites for any indication of oil/diesel/lubricant spillages on a daily basis.	Project manager and site manager	Weekly monitoring and reporting. Remedial impact management actions should be taken within 1 day of any problems observed.
Prospecting activities	Littering and illegal waste disposal	Visual inspection of the roads, camp sites and prospecting sites for any indication of littering or illegal disposal of waste.	Project manager and site manager	Weekly monitoring and reporting. Remedial impact management actions should be taken within 1 day of any problems observed.

Source activity	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities (for the execution of the monitoring programmes)	Monitoring and reporting frequency and time periods for implementing impact management actions
Access roads, camp sites and drilling operations	Possible harm to sensitive environmental and land use features	Visual inspection of the roads, camp sites and prospecting sites for any indication of possible harm to environmental features, e.g. heritage resources, water resources, protected trees etc. or land use	Project manager and site manager	Weekly monitoring and reporting. Remedial impact management actions should be taken within 1 day of any problems observed.
Access roads, camp sites and drilling operations	Possible injury to humans or animals due to cavities or soil mounds left after conclusion of prospecting activities and rehabilitation of disturbances	Visual inspection of the roads, camp sites, prospecting sites and rehabilitation for any indication of remaining or unstable cavities or soil mounds that could lead to injury of humans or animals	Project manager and site manager	Monthly monitoring and reporting. Remedial impact management actions should be taken within 7 days of any problems observed.
Access roads, camp sites and drilling operations	Dust generated during the prospecting operation and vehicle movement on gravel/dirt access roads.	Visual inspection of the roads, camp sites, prospecting sites and rehabilitation for any indication of excessive dust generation	Project manager and site manager	Weekly monitoring and reporting. Remedial impact management actions should be taken within 1 days of any problems observed.
Prospecting activities	Noise generated during the prospecting operation	Assessment of noise generated and extent of working hours	Project manager and site manager	Daily and reporting. Remedial impact management actions should be taken immediately

An EMPr Audit Report will be submitted to the DMR on an annual base. Where the findings of the environmental audit report indicate insufficient mitigation of environmental impacts associated with the undertaking of the activity; or insufficient levels of compliance with the environmental authorisation or EMPr and, where applicable the closure plan; the applicant will, when submitting the environmental audit report to the competent authority, submit recommendations to amend the EMPr or closure plan in order to rectify the shortcomings identified in the environmental audit report.

Within 7 days of the date of submission of an environmental audit report to DMR, all potential and registered interested and affected parties will be notified of the submission of the report. The report will also be made available to all interested and affected parties on request

l) Indicate the frequency of the submission of the performance assessment / environmental audit report

An EMPr Audit Report will be submitted to the DMR annually.

m) Environmental awareness plan

1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work

All employees should receive basic environmental awareness training, either as induction training or later at a special training session. Different levels of responsibility in relation to individual's potential impact on the environment must be addressed in the training session.

Appropriate training relevant to the implementation of the environmental management plan should be provided to all employees. Contractors working on site should be required to provide evidence that they have the requisite knowledge and skills to perform the work in an "environmentally responsible manner".

Issues to be considered during training:

- use of chemical toilets
- handling of industrial and domestic waste
- responsible use of water
- responsible handling of topsoil
- prevention of oil/diesel spillages
- prevention of veld fires
- dust suppression
- surface run-off control
- rehabilitation

2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment

The following operational procedures should be implemented to avoid environmental pollution or degradation:

Spillage of oil, diesel and rilling fluids by vehicles, drills, etc.

- The spillage must be contained (bund earth walls) by all means. Depending on the amount of spillage it must be remediated *in situ* or in the case of large amount of spillage that is contained, must be removed by Oilkol, etc.
- Leakage from the vehicle, tanker etc, that caused the emergency, should be stopped and the vehicle removed to the workshop area for repairs.
- The Project Manager is responsible for ensuring that the above actions are implemented.

Fires

- All fires in the veld, buildings, diesel tanks, chemical fires, etc. must be extinguished and prevented to spread to any other piece of land, building, etc.
- During the winter months adequate fire breaks must be put in place around the prospecting activities.
- The necessary equipment and protective clothing must be in provided and ready to be used if an accidental fire occurs.
- The Project Manager is responsible for ensuring that the above actions are implemented.

Reporting of incidents

- Workers can only report on incidents if they are made aware off the possible environmental risks of their work.
- Every environmental incident that might happen and which the workers become aware off must be reported to the manager.
- A reporting format should be provided for this purpose.

Environmental complaints procedure

- A formal complaints/concerns reporting system (complaints register) must be established and implemented to address I &AP's interaction with the prospecting activities.
- Complaints/cencerns must be recorded and appropriately responded to.

n) Specific information required by the Competent Authority

(Among others, confirm that the financial provision will be reviewed annually.)

The financial provision will be reviewed annually in line with the legal requirements in this regard.

2) UNDERTAKING

The EAP herewith confirms

- a) The correctness of the information provided in the reports;
- b) The inclusion of comments and inputs from stakeholders and interested and affected parties;
- c) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.

TC Meyer

Signature of the environmental assessment practitioner:

North-West University, Centre for Environmental Management

Name of company:

9 May 2016

Date:

-END-