Environmental Management Plan

Vaalboschfontein11; Remainder and Portions 1,2,3, and 4 of Farm 12; Remainder and Portion 1 of Farm 13; Farm14; Farm 21; Remainder and Portion 1 of Kook Fontein 31; Dikgatlong Municipal Area

Reference Number: (NC)30/5/1/1/2/11057PR

Prepared By:

Lizelle Prosch Environmental and Sustainability Consulting Services (Pty) Ltd

Registration Number: 2013/020535/07

Environmental Management Plan in the application for a Prospecting Right

Vaalboschfontein11; Remainder and Portions 1,2,3, and 4 of Farm 12; Remainder and Portion 1 of Farm 13; Farm14; Farm 21; Remainder and Portion 1 of Kook Fontein 31; Dikgatlong Municipal Area

Reference Number: (NC)30/5/1/1/2/11057PR

Applicant: Finsch Diamond Mine (Pty) Ltd (subsidiary of Petra Diamonds)

Consultant: Lizelle Prosch Environmental and Sustainability Consulting Services (Pty) Ltd

4 February 2014

Executive Summary

Finsch Diamond Mine (Pty) Ltd (owned by Petra Diamonds) submitted an application for the prospecting of diamonds (alluvial and kimberlite) in terms of Section 16 of the Mineral and Petroleum Resources Development Act 28 of 2002 ("MPRDA" or "the act"). The application was accepted by the Department of Mineral Resources ("DMR" or "the department") on the 11th of November 2013.

Planned prospecting is proposed to undertaken in three phases:

- Phase I: Data Acquisition and Desktop Survey;
- Phase II: Target Generation and Ground Truthing; and
- Phase III: Scout Drilling and Delineation Drilling.

Each phase will be dependent on the success of the preceding stage and it should be noted that the location of ground activities (i.e. sampling and drilling) is therefore not yet known. The Environmental Management Plan has been developed with this limitation in mind.

The baseline environmental conditions were assessed to provide an understanding of the environment which may be impacted on and to determine cumulative impacts. Four specific areas of concerns as it relates to the baseline socio-economic and environmental conditions and potential impacts were repeatedly highlighted by stakeholders including:

1. A general concern was raised that any mining related activities may result in groundwater impacts. Landowners highlighted the high dependency on groundwater resources for cattle farming practices.
2. The prospecting activities may result in an influx of unemployed persons to seek work; this may result in higher incidents of opportunistic crime.
3. Access control during prospecting activities is of significant concern. The majority of the farms affected by the prospecting activities are currently utilized for cattle rearing and breeding. The farming method is a typical penstock method and cattle movement for grazing and breeding purposes is restricted / controlled by means of a gate system. During prospecting activities, staff may negatively impact on these farming methods through leaving open and / or closing gates contrary to the farmer's intentions.
4. Veld fires may be caused by on-site prospecting activities. Farmers have a legal responsibility and liability to prevent and control fires.

Other impacts, mitigation and management measures as it related to noise, dust, soil, fauna and flora has been identified by the consultant responsible for the compilation of the Environmental Management Plan.

Financial calculations for the implementation of the proposed environmental and social mitigation and management measures as well as the cost of final closure and rehabilitation of the planned prospecting activities has been done. An implementation cost of R 263,640.00 (excluding VAT) and a closure cost of R 244 256.22 (including contingencies and VAT) has been allocated.

Additionally, stakeholder consultation has been undertaken and all stakeholders were invited to comment, raise their issues and concerns regarding the proposed prospecting activities. Stakeholders were afforded an opportunity to review the Draft Environmental Management Plan to confirm that their issues and concerns were adequately addresses. A full record on the stakeholder engagement process is included in the Environmental Management Plan.

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Terms and Definitions

TERMS	DEFINITIONS
Best Practicable Environmental Option	Is defined in Section 1(1)(iii) of the Act as "the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term."
Environment	The surroundings within which humans exist and that are made up of- (i) The land, water and atmosphere of the earth; (ii) Micro-organisms, plant and animal life; any part or combination of (i) and (ii) and the inter relationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being
Emergency incident	An unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed (e.g. groundwater contamination may take months or years before for the impact has an effect on the community).
AIR POLLUTION	
Air pollution	Any change in the composition of the air caused by smoke, soot, dust (including fly ash), cinders, solid particles of any kind, gases, fumes, aerosols and odorous substances.
Ambient air	Excludes air regulated by the Occupational Health and Safety Act 85 of 1993
Atmospheric emission	Any emission or entrainment process emanating from a point, non-point or mobile sources that result in air pollution.
Non-point source emission	A source of atmospheric emissions which cannot be identified as having emanated from a single identifiable source or fixed location, and includes veld, forest, and open fires, mining activities, agricultural activities and stockpiles. Also known as fugitive emissions.
Point source emission	A single identifiable source and fixed location of atmospheric emission, and includes smoke stacks and residential chimneys.
WATER and WASTEWATER	
Aquifer	A geological formation which has structures or textures that hold water or permit appreciable water movement through them.
Catchment	In relation to a watercourse or watercourses or part of a watercourse, means the area from which any rainfall will drain into the watercourse or watercourses or part of a watercourse, through surface flow to a common point or common points.
Effluent	Any liquid, whether or not containing matter in solution or suspension, which is discharged from any premises directly or indirectly into a drainage work.
Nuisance	Any condition, thing, act or omission which is offensive or injurious or which tends to prejudice the safety, good order, peace or health of one or more residents in any particular locality within the area of the Council, or the rights, or reasonable comfort, convenience, peace or quiet, of the occupants of any area within the Council's jurisdiction.

TERMS	DEFINITIONS
Water pollution	The direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it- (a) less fit for any beneficial purpose for which it may reasonably be expected to be used; or (b) harmful or potentially harmful- (i) To the welfare, health or safety of human beings; (ii) To any aquatic or non-aquatic organisms; (III) To the resource quality; or (iv) To property.
Sewage	Waste water, industrial and commercial effluent, standard domestic effluent (soil water) and other liquid waste, either separately or in combination, but does not include stormwater.
Sewage disposal system	The structures, pipes, valves, pumps, meters or other appurtenances used in the conveyance of sewage through the sewer reticulation system and treatment thereof at a sewage treatment plant under the control of the Council and which may be used by it in connection with the disposal of sewage.
Standard Domestic Effluent	Domestic effluent with prescribed strength characteristics in respect of chemical oxygen demand, total nitrogen, total phosphates and settable solids as being appropriate to a sewage discharge from domestic premises within the jurisdiction of the Council, but does not include industrial effluent.
Stormwater	Water resulting from natural precipitation or accumulation and includes rainwater, subsoil water or spring water.
Water resource	Includes a watercourse (see definition), surface water, estuary, or aquifer
Water supply system	The structures, aqueducts, pipes, valves, pumps, meters or other apparatus relating thereto which are vested in the Council or its authorised provider and are used or intended to be used in connection with the supply of water
Watercourse	(a) A river or spring; (b) A natural channel in which water flows regularly or intermittently; (c) A wetland, lake or dam into which, or from which, water flows; and (d) Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, And a reference to a watercourse includes, where relevant, its bed and banks
WASTE	
Building and demolition waste	Waste produced during the construction, alteration, repair or demolition of any structure, and includes rubble, earth, rock and wood is displaced during that construction, alteration, repair or demolition;
General waste	Waste that does not pose an immediate hazard or threat to health or to the environment, and includes— (a) domestic waste; (b) building and demolition waste; (c) business waste; and (d) Inert waste.
Hazardous waste	Any waste that contains organic or inorganic elements of compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment.
Inert waste	‘‘inert waste’’ means waste that— (a) does not undergo any significant physical, chemical or biological transformation after disposal; (b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter with which it may come into contact, and (c) does not impact negatively on the environment, because of its pollutant

TERMS	DEFINITIONS
	content and because the toxicity of its leachate is insignificant.
Recovery	The controlled extraction of a material or the retrieval of energy from waste to produce a product.
Recycling	A process where waste is reclaimed for further use, and includes the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material.
Re-use	To utilise articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles
Waste	Any substance, whether or not that substance can be reduced, reused, recycled and recovered – that is surplus, unwanted, rejected, discarded, abandoned or disposed of; which the generator has no further use of for the purposes of production; that must be treated or disposed of, or that is identified as waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but – a by-product is not considered waste, and any portion of waste, once re-used, recycled and recovered, ceases to be waste.
Waste disposal facility	Any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.
Waste management activity	Any activity listed in Schedule 1 or published by notice in the Gazette under Section 19 and includes – (a) The importation and exportation of waste; (b) The generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste; (c) The accumulation and storage of waste; (d) The reduction, reuse, recycling and recovery of waste; (e) The trading in waste; (f) The transportation of waste; (g) The transfer of waste; (h) The treatment of waste, and (i) The disposal of waste.
Waste transfer facility	A facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal site.
Waste treatment facility	Any site that is used to accumulate waste for the purpose of storage, recovery, treatment, reprocessing, recycling or sorting of that waste.
HAZARDOUS SUBSTANCES	
Flash point	The lowest temperature at which a substance gives off sufficient flammable vapour to produce a momentary flash on the application of a small flame
Hazardous chemical substance	Any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture of such substances for which – (a) An occupational exposure limit is prescribed; or (b) An occupational exposure limit is not prescribed, but which creates a hazard to health.
Major incident	An occurrence of catastrophic proportions, resulting from the use of plant or machinery, or from activities at a workplace.

Abbreviations

AEL	Atmospheric Emission Licence
AIA	Approved Inspection Authority
APPA	Atmospheric Pollution Prevention Ac 45 of 1965
AQA	Air Quality Act 39 of 2004
AQMP	Air Quality Management Plan
BPEO	Best Practicable Environmental Option
BPM	Best Practicable Means
CAPCO	Chief Air Pollution Control Officer
CMA	Catchment Management Agency
DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act 73 of 1989
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Plan
EMPR	Environmental Management Programme
EMS	Environmental Management System
HCS	Hazardous Chemical Substances
ISO	International Standards Organisation
MHI	Major Hazard Installation
MPRDA	Mineral and Petroleum Resource Development Act 28 of 2002
MSDS	Material Safety Data Sheet
NEMA	National Environmental Management Act 107 of 1998
NWA	National Water Act 36 of 1998
PAEL	Provisional Atmospheric Emission Licence
PPE	Personal Protective Equipment
SABS / SANS	South African Bureau of Standards – now South African National Standards
SAPS	South African Police Services

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13. Written and verbal communication with Stakeholders.

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: FINSCH DIAMOND MINE (PTY) LTD

REFERENCE NUMBER: (NC)30/5/1/1/1/10965PR

ENVIRONMENTAL MANAGEMENT PLAN

SUBMITTED IN TERMS OF SECTION 39 AND OF REGULATION 52 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002, (ACT NO. 28 OF 2002) (the Act)

STANDARD DIRECTIVE

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED

ITEM	COMPANY CONTACT DETAILS
Name	Finch Diamond Mine (Pty) Ltd
Tel no	011 702 6922
Fax no	011 706 3071
Cellular no	083 779 5573
E-mail address	clivef@petradiamonds.com
Postal address	Post Office Box 71007, Bryanston, 2021

ITEM	CONSULTANT CONTACT DETAILS (If applicable)
Name	Lizelle Prosch Environmental and Sustainability Consulting Services (Pty) Ltd
Tel no	082 804 4024
Fax no	086 718 1695
Cellular no	082 804 4024
E-mail address	lizelle@proschconsulting.co.za
Postal address	41 7th Avenue, Unit 35, Parktown Square, Parktown North, 2193

1. REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation

1.1. The environment on site relative to the environment in the surrounding area

1.1.1. Prospecting Site Locality

Province	**Northern Cape**
District Municipality	**Frances Baard**
Local Municipality	**Dikgatlong**
Affected Ward	**Ward 6**
Land portions where prospecting will take place	**Vaalboschfontein 11; Remainder and Portions 1,2,3, and 4 of Farm 12; Remainder and Portion 1 of Farm 13; Farm14; Farm 21; Remainder and Portion 1 of Kook Fontein 31; Barkly West**

The site boundary aligns with the boundary between the North West Province and the Northern Cape Province, but the entire site falls within the Northern Cape. The planned prospecting area is approximately 14,730ha in extent, and is situated approximately 25km south-east of Reivilo and approximately 110km north-west of Kimberly (refer to Figure 1 and Figure 2).

A photo compilation of the site and surroundings have been prepared and is included in Addendum G.

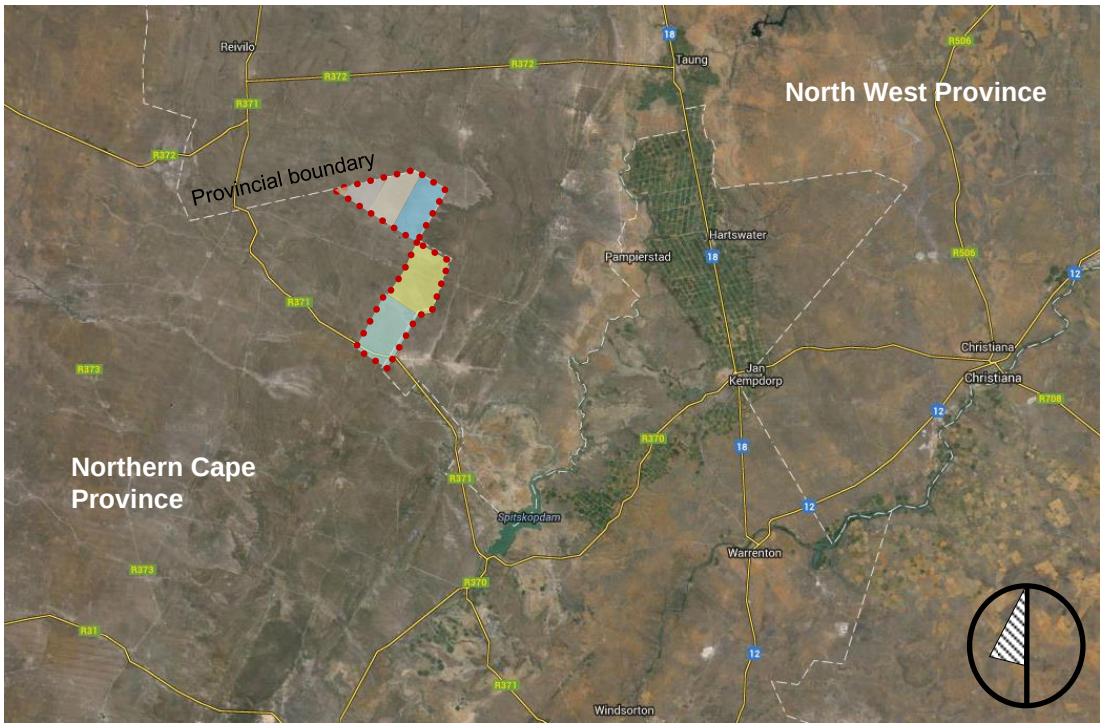
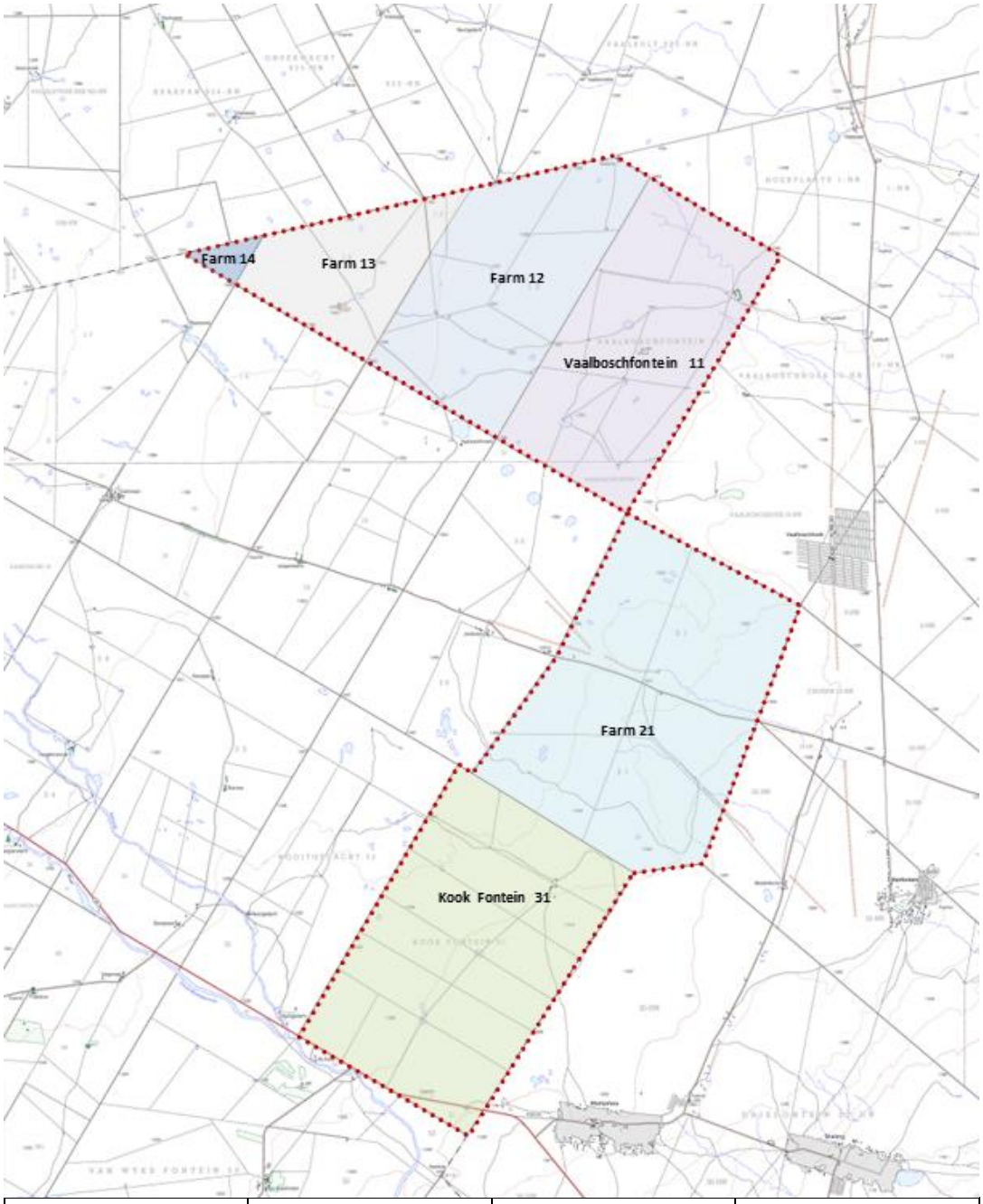


Figure 1: The extent of the prospecting area in relation to major towns (Google Earth Image. Imagery Date – 25.11.2013)



WG84 Lo25 (X)	WG84 Lo25 (Y)	WGS84 (Latitudes)	WGS84 (Longitudes)
-3074470.405	-53969.02729	27° 46' 57.37" S	24° 27' 08.72" E
-3080899.749	-56408.35547	27° 50' 25.86" S	24° 25' 38.53" E
-3081166.906	-58106.15685	27° 50' 34.28" S	24° 24' 36.43" E
-3087721.408	-62279.3908	27° 54' 06.52" S	24° 22' 02.69" E
-3085220.643	-66473.68722	27° 52' 44.56" S	24° 19' 29.83" E
-3078539.405	-62548.68253	27° 49' 08.20" S	24° 21' 54.58" E
-3078745.487	-62200.07459	27° 49' 14.96" S	24° 22' 07.28" E
-3072104.828	-58276.1727	27° 45' 39.87" S	24° 24' 31.82" E
-3065667.764	-69456.19876	27° 42' 08.86" S	24° 17' 44.90" E
-3063211.908	-58735.62548	27° 40' 50.92" S	24° 24' 16.61" E
-3065632.549	-54566.598	27° 42' 10.18" S	24° 26' 48.34" E

Figure 2: The farms of the prospecting area (1:50 000 Topographical Survey Sheets: 2824AB and 2824BA)

1.1.2. Socio-Economic Environment

The following section of the report provides an overview of the current socio-economic and demographic data for the Dikgatlong Municipal area and where appropriate, the Frances Baard District Municipality.

1.1.2.1. Current State

The following demographic information (as included in Table 1) for the Dikgatlong municipality has been sourced from the Census 2011 Municipal Fact Sheet, published by Statistics South Africa.

Table 1: Demographic Information

Population:	**46 841**
Age Structure	
Population Under 15:	31.60%
Population 15 To 64:	63.10%
Population Over 65:	5.30%
Population Growth	
Per annum:	2.02%
Labour market	
Unemployment Rate (official):	39.70%
Youth Unemployment Rate (official) 15-34:	49.00%
Education (aged 20 +)	
No Schooling:	17.70%
Higher Education:	2.70%
Matric:	20.30%

The following information relating to the socio-economic environment has been obtained from the Frances Baard District Municipality Integrated Development Plan (IDP) 2012/13 – 2016/17.

(a) The Dikgatlong Municipal area is reported to have an unemployment rate of 39.7%. According to the IDP, unemployment is attributed to low levels of education.

(b) Agriculture and mining activities form the economic basis of the Dikgatlong Local Municipality.

(c) Due to the low level of transformation within the district municipality, economic development opportunities, including wildlife-related activities, tourism or livestock farming have been identified and nature-related tourism opportunities have been identified for the Dikgatlong municipal area.

(d) Limited water availability has been identified as a threat to the future socio-economic development of the district.

(e) Future priority issues for the District Municipality include job creation and provision of housing and basic services.

(f) Statistics SA confirms that the Northern Cape's largest economic contributors are mining and agriculture which contribute 32.2%, followed by manufacturing and construction which contributes 7.3%.

1.1.3. Physical and Biophysical Environment

1.1.3.1. Current State

1.1.3.1.1. Climate

The climate information (meteorological data) was obtained from the South African Weather Service (SAWS), Taung weather station.

1.1.3.1.2. Wind Speed and Direction

Table 2: Wind Speed and Direction

Wind Direction and Speed	
Period of data	2007-2011
Dominant wind direction	North-north-west and north
Dominant day time wind direction	North-north-west
Dominant night time wind direction	North and north-east
Maximum wind speed	8.8 m/s Stronger winds are more commonly during the spring and summer seasons, wind speeds between 5.7 and 8.8 m/s occur around 2% and 1% respectively.
Wind calms	18.82% Calm conditions are more abundant during autumn and winter months, 14.9% and 14.13% respectively.
Day time calms	10.08%
Night time calms	21.91%

1.1.3.1.3. Rainfall and Temperature

Maximum rainfall for the 2011 was recorded at 190mm in January with a minimum of 0mm in July and August. Based on the information contained in the Overview of Water Resources Availability and Utilisation Report for the Lower Vaal Management Areas published by the DWA (Report No: P WMA 10/000/00/0203 dated September 2003), the average annual rainfall is reported to be 300-400mm per annum.

The maximum, minimum and average monthly temperatures for Taung for the year 2011 are reflected in the table below:

Table 3: Maximum, Minimum and Average Monthly Temperature: Taung 2011 (°C)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max	27.8	28.9	28.9	23.6	22.1	18.8	19.1	23.8	28.5	29.4	31	30
Min	19.2	18.1	17.3	12.7	7.6	1.8	1.2	5.2	9.4	11.9	13.1	17.2
Ave	23.5	22.9	22.6	17.4	13.9	9.2	9.1	14.1	18.7	20.6	22.4	23.5

1.1.3.1.4. Geology

Regional Geology

Much of the region of the north-eastern Cape Province is underlain by flat-lying Palaeozoic rocks of the Karoo Supergroup and the sub-vertical Proterozoic rocks of the Transvaal Supergroup. The Transvaal Supergroup consists of dolomitic rocks and mafic lavas. Permian Dwyka-Ecca Group tillites, shales and marine sediments form the base of the Karoo

succession and are overlain by arenaceous continental sediments of the Beaufort and Stormberg Groups. The sedimentary rocks are capped by an accumulation of Cretaceous amygdaloidal basalt flows up to 1,700 m thick belonging to the Drakensburg Group. Feeder dykes and sills of basalt are common within the underlying 1,000 m of sediments. Kimberlite intrusions, some of which are diamondiferous, represent the final phase of igneous activity in the region. These were emplaced during the Cretaceous age in several parallel north-northeast and east-west trending structures.

Southern African Kimberlite intrusions are divided into Group I (basaltic) and Group II (micaceous) Kimberlites. This division was originally made along mineralogical grounds. However, the Group I / Group II distinction is better defined by isotopic ratios. Group I Kimberlites have lower 87Sr / 86Sr and higher 143Nd / 144Nd ratios than Group II Kimberlites. Mineralogically the Group I Kimberlites have olivine, monticellite, serpentine-rich groundmass, while the Group II Kimberlites have a phlogopite, tetraferriphlogopite, olivine groundmass.

Spatially, the occurrence of Group I and Group II Kimberlites overlap, though Group II Kimberlites (110 Ma Ð 200 Ma.) are older than the majority of Group 1 Kimberlites (generally less than 90 Ma.). Economically viable Group II Kimberlites occur as both pipes and dykes (fissures), while the only economically viable Group I Kimberlites to date are pipes.

Local Geology and Historic Information

The prospecting area applied for covers an area of 14,730 ha, and is situated approximately 25km south-east of Reivilo and approximately 110km north-west of Kimberly, on the provincial border between the North West Province and the Northern Cape.

The area lies on the Kaapvaal craton, on the eastern edge of the Griqualand West basin, and consists of dolomite, limestone and chert of the Reivilo formation (2567 Ma). These shallow water carbonate deposits form the lower section of the Campbellrand Subgroup of the Ghaap Group, and are overlain in places by recent cover of calcrete and sand which can exceed 30m in thickness. Ghaap Group sediments are underlain by andesitic lavas and rare tuffaceous sediments of the Ventersdorp Supergroup. These lithologies are known to occur at a depth of approximately 400m from surface at Sedibeng Diamond mine 10km to the south-east, and are separated from the overlying Ghaap Group sediments by a major geological unconformity.

Historically, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past (e.g. the Bobbejaan and Bellsbank fissures on the edge of the Ghaap plateau). There have also been various alluvial diamond operations in this region (e.g. Mahura Muthla approximately 5km to the north of the prospecting area being applied for), however, the calcretised nature of these deposits has made them relatively difficult to mine.

The detailed geology and economic potential of the area under application is currently unknown, though the area is perceived to have good potential for hosting economically viable kimberlites due to the proximity of current, or historically producing, hard-rock diamond mines. The regional geology is also conducive to the possibility of alluvial diamonds in palaeochannels.

The Bellsbank and Bobbejaan kimberlite deposit occurrences in the vicinity of the prospecting area being applied for, are Group II ‘fissures’ (kimberlite dykes with an average width of 0.5m to 1m) and occasional blows (irregular shaped enlargements on the fissures, often with large amounts of wall rock included with the kimberlite to form a breccia). Fissures are not continuous intrusions, but systems of discrete, disc-like lenses of kimberlite that pinch and swell along the strike (typical lenses are 70-80m in diameter). Where one lens pinches out and disappears, the next is usually located to the side of the first, offset by several metres. The same offset, or en-echelon, pattern between lenses is evident vertically as well as horizontally.

This system is often repeated at a larger scale with fissure ‘segments’ (made up of groups of individual lenses) of hundreds of metres in length being separated by offsets of more than 100m in places. These larger offsets often coincide with major geological features, e.g. discontinuities in host rock lithologies such as faults and unconformities.

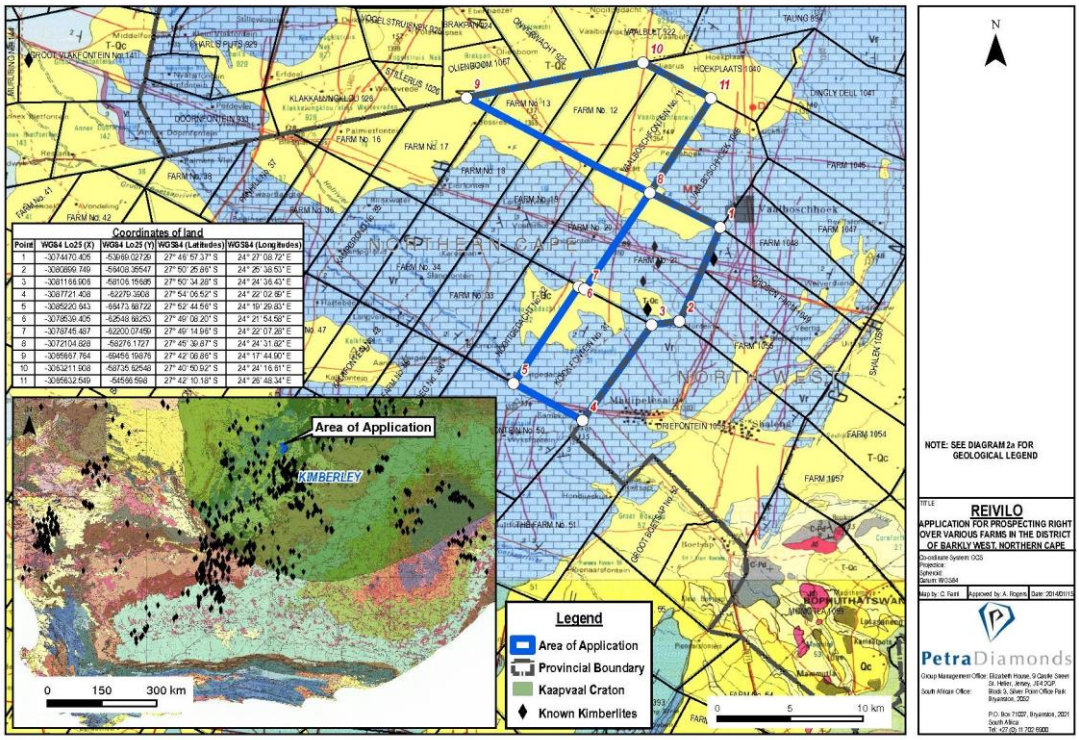


Figure 3: 1: 250 000 Geological Map

1.1.3.1.5. Land Capability and Land Use

According to the Agricultural Geo-Referenced Information System (AGIS) the prospecting site is classified as non-arable land with a moderate to low grazing capacity. As a result, cattle and game farming is the predominant land use in the area.

In accordance with comments received during the stakeholder consultation process undertaken as part of this application process, it was confirmed that both commercial and subsistence cattle farming is the predominant income generating land use activity.

On a regional scale, the Frances Baard District Municipality reports it is a Diamond Fields area, and relies on diamond mining, tourism and agriculture for economic growth and job creation.

1.1.3.1.6. Land Claims

An enquiry was submitted to the Northern Cape: Department of Rural Development and Land Reform on 2 December 2013, to determine whether any current land claims affect the land portions for which prospecting rights are being applied for. It was confirmed by the Department that restitution claims have been lodged against the following land portions (refer to Addendum A):

- The Farm Vaalboschfontein No 11;
- The Remainder and Portions 1, 2, 3 and 4 of Farm 12;
- The Remainder and Portion 1 of Farm No 13;
- Farm No 21; and
- The Remainder and Portion 1 of the Farm Kook Fontein No 31.

Additional information regarding the status of these claims has been requested from the Northern Cape: Department of Rural Development and Land Reform. No response to these queries was received. Kindly refer to Addendum A for copies of the requests made.

1.1.3.1.7. Water Resources

The information contained in this section of the report (Water Resources) is based on the available desktop information as referenced. No specialist studies were undertaken to assess surface or groundwater resources.

The proposed prospecting site falls within the Lower Vaal Water Management Area, and falls within two Quaternary Catchment Areas, C33A and C33B. The Department of Water Affairs (DWA) considers these catchment areas to be of moderate ecological sensitivity. Based on the information contained in the Overview of Water Resources Availability and Utilisation Report for the Lower Vaal Management Areas (DWA Report No: P WMA 10/000/00/0203, September 2003), the primary water use is agricultural irrigation, which comprises more than 80% of water use in the region.

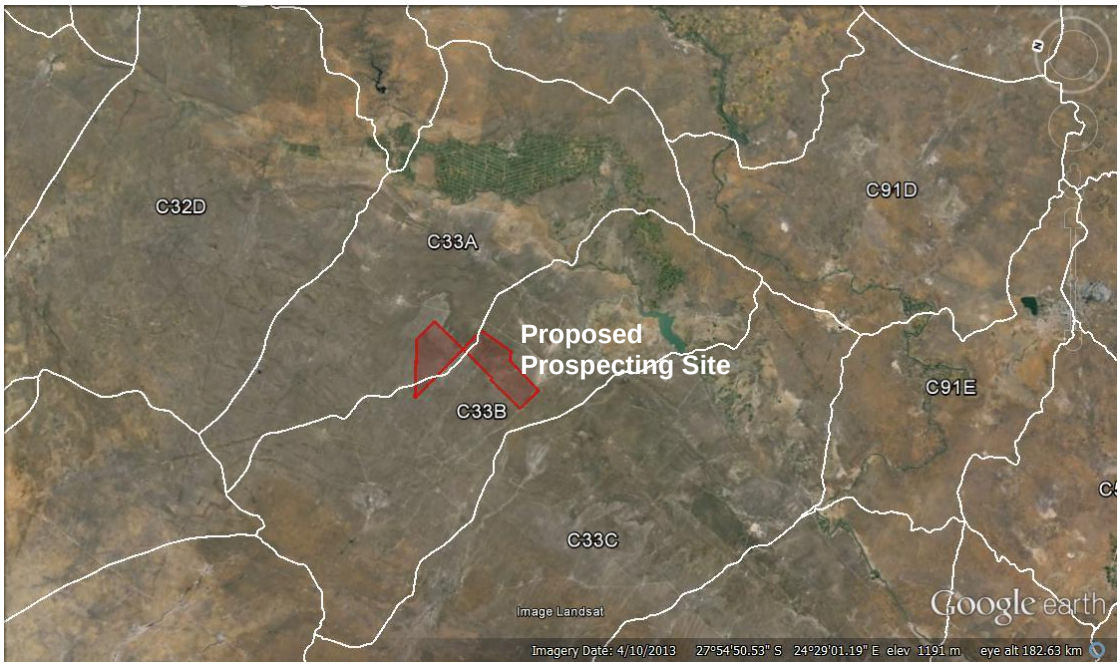


Figure 4: Location of the Proposed Prospecting Site in relation to the Quaternary Catchment Areas C33A and C33B

Surface Water

Based on a review of the1:50 000 Topographical Survey Sheets and Google Earth maps, several non-perennial pans and streams were identified on the proposed prospecting site.

There are two non-perennial rivers to the south west of the site, namely the Holriver and Grootboetsap River. These rivers merge into the Grootboetsap River which flows adjacent to the R371, which forms the south western boundary of the prospecting area. The Grootboetsap River eventually flows into the Spitskop Dam, approximately 30km to the south east.

Figure 6 shows the water bodies on site and adjacent rivers. The surface water on site may provide habitat for water birds and amphibians, discussed in Section 1.1.3.1.8.

Based on information provided by farm owners during the stakeholder consultation process, the pans typically only hold water for limited periods after significant rainfall events.

Groundwater

The DWA (2003) reports groundwater utilisation to be of major importance in the Lower Vaal Water Management Area. Dolomitic aquifers occur in the uppermost reaches of the Harts River and Molopo River and extend north and eastwards into the Crocodile (West) and Marico, Upper Vaal and Middle Vaal Water Management Areas. Significant quantities of groundwater are abstracted in the area, mainly for agricultural irrigation purposes.

The total yield from groundwater in the water management area well exceeds water available from surface water sources. The site is located above two aquifers, one major and one minor, as shown in Figure 5. DWA Vulnerability data shows that these aquifers are considered "Least Vulnerable".

In accordance with feedback received during the stakeholder consultation process, a high dependency on groundwater resources was confirmed. While a hydrocensus was not undertaken as part of this assessment, farm owners reported borehole depths ranging from 8m to 13m.

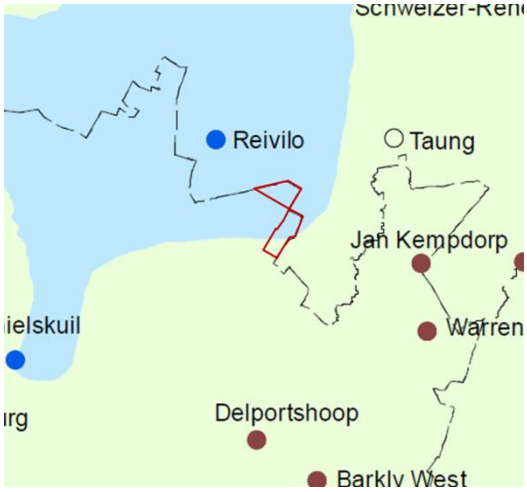


Figure 5: The site is located over two aquifers

Legend:

Major Aquifer

Minor Aquifer

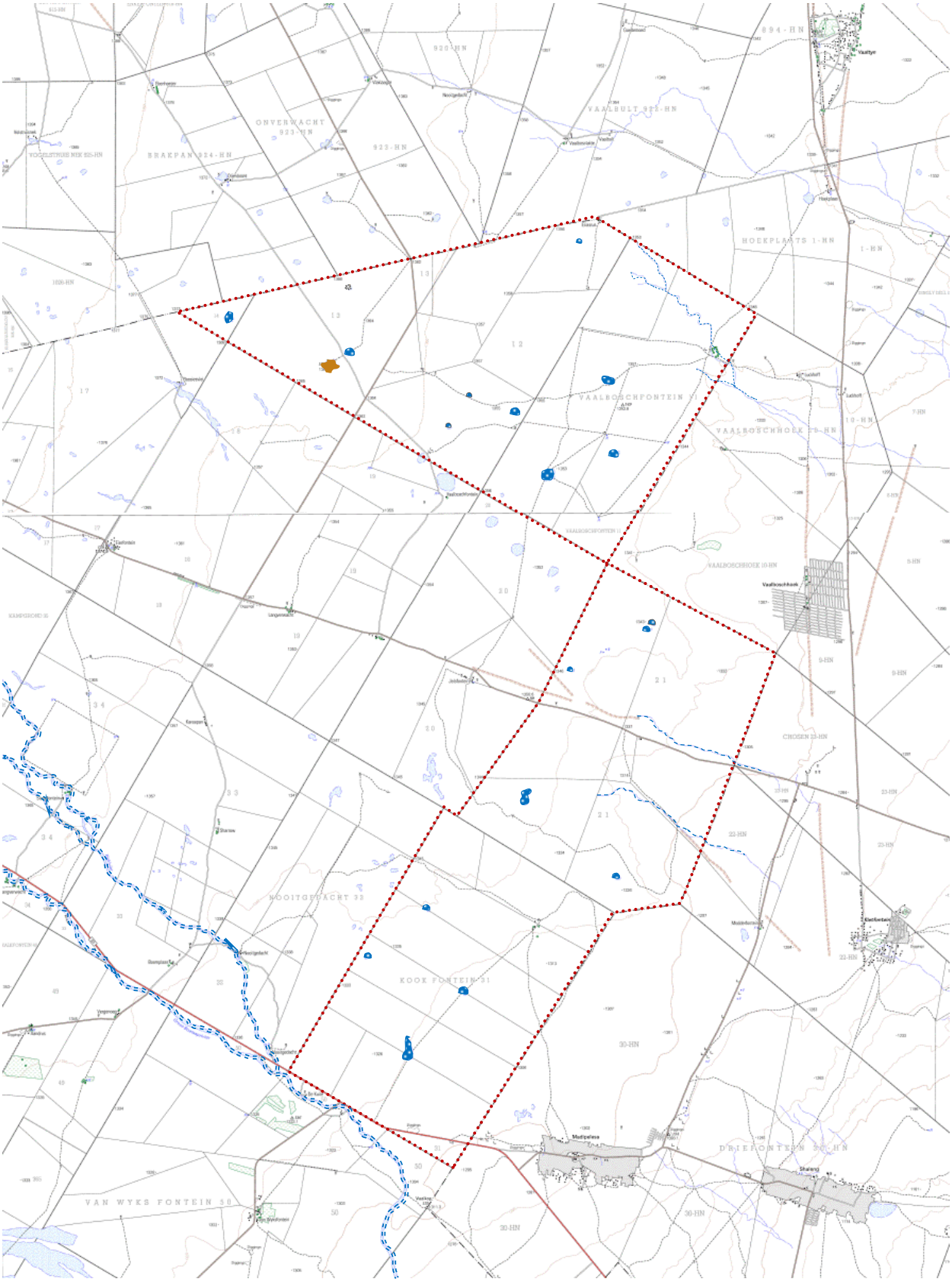


Figure 6: Water bodies adjacent to and on site based on 1:50 000 Topographical Survey Sheets: 2824AB and 2824BA

Legend:

Dry pan


Non-perennial pans


Non-perennial rivers

Non-perennial streams

1.1.3.1.8. Biodiversity

According to the South African National Biodiversity Institute's (SANBI) Biodiversity Geographical Information System (BGIS), the proposed prospecting site is located within the Savanna Biome, Schmidtsdrif Thornveld Vegetation Type (SVk6). The descriptions for the vegetation types were obtained from Vegetation Map of South Africa, Lesotho and Swaziland.

The Schmidtsdrif Thornveld Vegetation Type represents 38.31% of Dikgatlong municipal area and the conservation status of the Schmidtsdrif Thornveld is recorded as "Least Threatened". The vegetation type is described as mostly a closed shrubby thornveld dominated by *Acacia Mellifera* and *Acacia Tortillis*. Grasses, bulbous and annual herbaceous plant species are also prominent. A large percentage of the municipal area remains natural (approximately 90%) though a very small percentage of these areas is statutorily conserved.

According to the Agricultural Geo-Referenced Information System (AGIS), the predominant vegetation types on site include thicket bushland, bush clumps, high fynbos. The database also indicates that there are small areas of scrubland, low fynbos and degraded grassland.

Birdlife South Africa confirmed that the Spitskop Dam is an Important Bird Area (IBA) as part of the Important Bird Area Programme. The Spitskop dam is approximately 27km from the site to the south east. Based on the publically available information obtain from the Birdlife website (http://www.birdlife.org/datazone/site), the Spitskop Dam supports a 10,000 to 18,000 of bird species, some of which are listed in Table 4. The dam is regarded as an important bird area as a permanent waterbody in a low rainfall region. The Spitskop Dam has no protection status and a poaching as well as water pollution has been identified as habitat threats.

Table 4: Birdlife at Spitskop Dam

Commonly Spotted Birdlife		**Rarely Spotted Birdlife**	
White-Fronted Plover	Pink-backed Pelican	Pectoral Sandpiper	Black-Tailed Godwit
Grey Plover	Yellow Wagtail	Red Phalarope	Lesser Black-backed Gull
Caspian Tern	Black Heron	Pacific Golden Plover	Caspian Plover
Black-winged Pratincole	Greater Flamingo	Olive-tree Warbler	
Lesser Flamingo	Osprey		
African Snipe	African Rail		

There are several rocky outcrops on Farm 21. These may provide habitat for small mammals and reptiles, and the non-perennial pans may provide habitat for frogs. Some of the most common fauna species found in the region are included in Table 5.

Table 5: Fauna found in the Dikgatlong Local Municipal Area

Birds	**Small mammals**	**Reptiles**	**Frogs**
Pygmy Falcon	Duiker	Leopard Tortoise	Common Caco
Pale Chanting Goshawk	Steenbok	Cape Cobra	Giant Bullfrog
White Quilled Korhaan	Rock Elephant Shrew	Puff Adder	Karoo Toad
Kori Bustard	Smith's Red Rock Rabbit	Mole Snake	Common Platanna
Rock Martin	Ground Squirrel	Brown House Snake	
Mountain Chat	Suricate / Meerkat	Bibron's Gecko	
Crimson Breasted	Rock Dassie	Southern Rock	

Birds	Small mammals	Reptiles	Frogs
Shrike		Agama	
White Browed Sparrow-weaver	Yellow Mongoose	Ground Agama	
Sociable Weaver		Striped Skink	
Cape Bunting		Cape Skink	

1.1.3.1.9. Heritage Resources

No desktop heritage resource information could be sourced for the affected farm portions. It should be noted that a Heritage Impact Assessment was not undertaken as part of this study.

A number of stone kraals were noted during the site investigation of Portion 2 of Farm 12. These kraals may have heritage and / or archaeological value.

As outlined in Section 2.1.1.1 of this report, prospecting will be undertaken in three (3) phases; the first phase being a desktop assessment (year 1), followed by soil sampling (year 2) - as the first part of the second phase. Based on the outcome of these activities, soil sampling and potential drill sites will be determined. Potential heritage impact will only occur once soil sampling and geophysics have been used to identify sites for drilling, and it is therefore recommended that the Heritage Impact Assessment be undertaken prior to drilling activities, and that the Heritage Impact Assessment will be conducted over identified localised drill sites and access routes, as opposed to the entire exploration area.

A submission in this regard was made to the South African Heritage Resource Agency and in their official response it was stated that:

"due to the limited nature of the proposed prospecting activities, the impact of prospecting on significant heritage resources is determined to be low.

As such, SAHRA has no objection to the granting of right to prospect for alluvial and kimberlite diamonds as proposed on condition that a new application is made to SAHRA for comment in terms of Section 38(8) should mining right be applied for. As mining activities are generally more intrusive than prospecting activities, this process may require additional heritage studies"

Kindly find this response attached as Addendum B.

1.1.3.1.10. Relevance of the information

1.1.3.1.11. Socio-Economic

Socio-economic information detailed in Section 1.1.2 of this report provides an understanding of the need for economic development which will create employment opportunities. The high unemployment rate within the municipal area serves as an indicator of this requirement. Though no local employment opportunities are expected during the prospecting phase, the confirmation of a viable mineral resource and the possible establishment of a mine may aid to address unemployment challenges faced by the project affected communities.

The identified economic development opportunity, which includes nature-related tourism for the Dikgatlong municipal area, highlights the importance of unique faunal and floral habitat conservation initiatives.

1.1.3.1.12. Climate

Meteorological (climate data) is used as baseline input data to develop an understanding of the potential contribution of climatic factors on the identified impacts. The predominant wind direction as measured at the Taung Weather Station, is from the north-north-west and wind speeds are higher during the spring and summer months (between 5.7 and 8.8 m/s occur around 2% and 1% of the time respectively). Any emissions which might emanate from the

prospecting activities are therefore likely to disperse in this direction and the impact will be more significant during the spring and summer months.

The site falls within a semi-arid rainfall region with relative low rainfall which slightly reduced the potential impacts associated with soil erosion.

1.1.3.1.13. Geology

Limited information regarding the local geological conditions is known and the information available is mostly used to determine the possible occurrence of suitable mineral deposits that could potentially be developed.

1.1.3.1.14. Land Capability and Land Use

The determination of the existing site specific and surrounding land use provides input into the process of impact identification and the establishment of closure objectives. Site specific land use has been confirmed as cattle farming and prospecting activities may present a disturbance to the cattle within the fenced property.

Rehabilitation objectives to restore the site to pre-prospecting state must consider safety matters and an effective re-vegetation effort in an attempt to reverse the impacts as far as is practicable.

1.1.3.1.15. Water Resources

The protection of water resources is of key importance. The prospecting site is located in a semi-arid region and the protection of water quality and availability has been identified as aspects of key importance within the municipality and the general region.

Regionally, there is a high dependency on the available surface and ground water sources. Prospecting activities must be undertaken in a manner to ensure that no significant additional contribution is made to water quality deterioration.

The high dependency on ground water resources was confirmed during the stakeholder consultation process, underpinning the importance of the implementation of appropriate management measures during prospecting activities, in order to mitigate impacts on groundwater quantity and / or quality.

1.1.3.1.16. Biodiversity

The majority of the area targeted for the planned prospecting activities is utilized for cattle farming with low levels of habitat transformation. Reportedly, game animals such as (blesbuck, aarvark and porcupine) occur in the region and have been noted to be present on the farm portions where prospecting is proposed.

The identified water courses (including rivers, streams and pans) may be regarded as unique habitats which support regional ecological functioning.

1.1.3.1.17. Heritage Resources

A number of stone kraals were noted during the site investigation of Portion 2 of the Farm 12. Though a Heritage Impact Assessment was not undertaken as part of the development of the Draft Environmental Management Plan, it is anticipated that these features may have heritage and / or archaeological value.

Potential heritage impact will only occur once drill sites have been identified and on-site activities commences and it is therefore recommended that the Heritage Impact Assessment only be undertaken prior to these activities.

The Heritage Impact Assessment will be conducted over identified localised drill sites in order to identify any cultural, heritage and or archaeological features which may be impacted on.

1.2. The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

A number of water courses have been identified to occur within the boundaries of the proposed prospecting site. These should be avoided and where avoidance is not possible, impacts must be appropriately managed and remedied.

Based on the outcomes of the initial prospecting phases (non-site disturbing activities), the location of any on-site sampling and drilling will be determined (site disturbing activities) and the impacts on the identified water courses will subsequently be determined.

The Draft Environmental Management Plan must be amended to include direct and indirect impacts on any water courses in the event that any prospecting activities are undertaken within such areas or within 500m of any water course.

1.3. Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site

Kindly refer to Figure 6, the map illustrating the spatial extent of the water courses which may be affected by the proposed prospecting activities.

A number of stone kraals were noted during the site investigation of Portion 2 of the Farm 12. The cultural and heritage value of these features has not been determined and additional specialist studies will be required prior to the initiation of on-site activities which may affect these features.

1.4. Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties

Interested and affected parties were afforded the opportunity to comment on the description of the state of the environment through the publication and distribution of a Baseline Socio-Economic and Environmental Conditions Report.

The comments with regard to the description of the receiving environment are included in Table 6. Kindly note that this does not include all comments received. Potential impacts identified and objections received are recorded in Table 30.

Table 6: Comments received with regard to the baseline environmental and socio-economic conditions

Stakeholder	Date of comment	Comments received
Mr Francois and Mr Frans van den Berg	11 December 2013	1. Numerous pans exist on the property and only hold water during extreme rainfall events. 2. The borehole depth on Farm 13 is estimated to be approximately 8m.
Mr Gerardus Peter Jacobus te Baerts	11 December 2013	3. Reportedly a kimberlite pipe was previously identified to occur on the property (Kookfontein No. 31 Ptn 1).
Mr and Mrs Wessels	12 December 2013	4. The description of the availability of water included in the Desktop Baseline Socio Economic and Environmental Report must be expanded to state that water which is available, is severely restricted. 5. The reference to crop cultivation (Section 3.2.3 of the Desktop Baseline Socio Economic and Environmental Report) is regarded to be irrelevant to the study. 6. The reference to grazing capacity (Section 3.2.3 of the Desktop Baseline Socio Economic and Environmental Report) must be expanded. The statement included in the report gives the impression that the low gazing capacity signifies that cattle farming is not a viable land-use. This impression is incorrect.
Mr Willem Johannes Potgieter	12 December 2013	7. A water study which is currently being undertaken by Aurecon could potentially provide additional information regarding water resources in the region.

2. REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage.

2.1. Description of the proposed prospecting or mining operation

2.1.1. The main prospecting activities (e.g. access roads, topsoil storage sites and any other basic prospecting design features).

2.1.1.1. Overview of Prospecting Activities

The detailed geology and economic viability of the diamond potential of the area is relatively unknown, and exploration work will commence at a very basic level. Prospecting will be undertaken in three (3) phases, with each phase being conditional on the success of the previous.

2.1.1.1.1. Phase I: Data Acquisition and Desktop Survey

A desktop study of all available data for the area will be undertaken to accumulate as much regional and historical data around the area as possible. This includes published geological reports, infrastructure mapping, satellite imagery and existing geophysical information (if available). Both primary (Kimberlite or Lamproite) and secondary (alluvial) diamond deposits will be targeted.

During this phase, no on-site activities will be undertaken and analysis of the site will be done through the sourcing and analysis of existing information.

2.1.1.1.2. Phase II: Target Generation and Ground Truthing

If the initial results of the desktop study are positive, further data will be generated through airborne or ground geophysics. Targets generated and/or historical information will be investigated on the ground and subjected to more detailed target-specific geophysics and loam sampling for the presence of Kimberlite Indicator Minerals (KIM).

If any of the exploration targets yield a positive result, a drilling programme will be undertaken in order to identify the causative body for the geophysical and geochemical targets.

2.1.1.1.3. Phase III: Scout Drilling and Delineation Drilling

During this phase, targets that have been prioritised through detailed loam sampling and airborne or ground geophysics, will be tested by initial diamond or percussion drilling. If Kimberlite if intersected, one or more 10kg samples will be taken for Heavy Metal Abundance (HMA) sampling to extract KIM such as garnet, chromite, ilmenite and chrome diopside in representative quantities. These will be analysed by electron microprobe for major and selected minor elements and the results will be interpreted to assess diamond potential.

Dependent on HMA results, further delineation drilling and micro-diamond (MiDA) sampling will be undertaken to further define the deposit and provide an improved indication of grade.

Positive results from MiDA will be followed by more detailed delineation diamond drilling and geological modelling to assess potential resource tonnage and diamond content. Information gathered during this phase would be used in the decision making process to embark on additional prospecting and evaluation activities.

Table 7: Prospecting Timeframes and Activities

Phase	Anticipated Timeframe	Activities	Outcomes
Phase I: Data Acquisition and Desktop Survey	1 Year	1. Data Acquisition: acquire historical geological/exploration data over area applied for and surrounds	1. Compile data. 2. Refine exploration strategy
Phase II: Target Generation and Ground-Truthing	2 Years	1. Ground and or aerial magnetic survey over prospecting area 2. Anomaly-specific ground	1. Define and prioritize exploration targets for detailed follow up. 2. Detailed follow up on targets to establish

Phase	Anticipated Timeframe	Activities	Outcomes
		geophysics 3. Anomaly-specific loam sampling and drilling for kimberlite/alluvial deposit identification	which targets warrant scout drilling to test for kimberlite/ alluvials.
Phase III: Scout Drilling and Delineation Drilling	2 Years	1. Scout Drilling 2. KIM Sampling 3. MiDA sampling 4. Initial delineation drilling	1. Confirm which targets are due to the presence of kimberlite. 2. Test diamond potential and estimate potential grade of kimberlite. 3. Delineate orebody. 4. Assess what further work is warranted (e.g. bulk sampling). 5. Amend relevant documents such as Environmental Management Plan and Prospecting Works Program.

2.1.1.2. Access Roads

Access to the site will be required during ground geophysics, soil sampling and drilling activities (Phase II and III). Access requirements can only be determined after Phase I has been concluded. A number of existing roads and tracks already traverse the proposed prospecting site and where practicable, these roads will be used.

During ground geophysics and soil sampling activities, vehicle access will be gained to the site through the veld. The establishment of tracks to gain repeated access will not be required.

Once drill sites have been identified, temporary access roads may be established for repeated access to any particular drill site, if the identified drill site cannot be access via existing roads and tracks.

2.1.1.3. Access Control

Access control to farm land has been raised as a concern during the stakeholder consultation process.

The majority of the farms affected by the prospecting activities are currently utilized for cattle rearing and breeding. The farming method is a typical penstock method and cattle movement for grazing and breeding purposes is restricted / controlled by means of a gate system. During prospecting activities, staff may negatively impact on these farming methods through leaving open and / or closing gates contrary to the farmer's intentions.

2.1.1.4. Water Supply

It is anticipated that water brought onto the site, will be sourced from the Sedibeng Mine, Water will be trucked from the nearby Sedibeng mine to the identified drill sites, water bowsers will be deployed to these sites as and when required.

Continuous water supply will be required during drilling, at an estimated rate of 1 000 litres per hour. On-site water storage tanks with a capacity of 15 000 for water supply to the drill, will be installed.

Additional water requirements relates to the potable water supply for employees and workers. A temporary 260 litre on-site vertical water storage tank for drinking water and general use by persons will be provided at the drill site.

2.1.1.5. Ablution

Ablution facilities at the drill sites will involve the installation of drum or tank type portable toilets.

2.1.1.6. Temporary Office Area

A temporary site office and shaded area will be erected at the drill sites. No on-site electricity generation, though the use of generators will be undertaken.

2.1.1.7. Accommodation

No accommodation for staff and workers will be provided on-site and all persons will be accommodated in nearby towns (i.e. Reivilo). Workers will be transported to and from the prospecting site on a daily basis.

Night security staff will be employed once equipment has been established on site.

2.1.1.8. Storage of Dangerous Goods

During the drilling activities limited quantities of diesel fuel, oil and lubricants (dangerous goods) will be stored on site. The only dangerous good that will be stored in any significant quantity is diesel fuel. A maximum amount of $60m^3$ will be stored in above ground diesel storage tanks.

2.1.2. Plan of the main activities with dimensions

Each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase I assessment, an airborne / ground geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and airborne / ground geophysics will be tested by drilling.

The location and extent of soil sampling and possible drilling sites can therefore not be determined at this stage.

Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, a typical layout of a drill site (refer Figure 7) has been included to provide an understanding of the potential scale and significance of these activities.

Photo of a typical drilling operation (Source: Department of Mines and Petroleum, DRAFT Guidelines for Environmentally Responsible Mineral Exploration & Prospecting in Western Australia, March 2012)

Figure 7: Typical drill site layout (Not to Scale)

2.1.3. Description of construction, operational, and decommissioning phases

As previously stated, Phase I and the airborne geophysics survey undertaken as part of Phase II will not result in any ground disturbance. The description of the construction, operational and decommissioning activities that will be undertaken during prospecting are outlined in Table 8 below.

Table 8: Description of the construction, operational and decommissioning activities that will be undertaken during prospecting

Phase		Activities
Phase I: Data Acquisition and Desktop Study	N/A	Data collection and assessment (desktop only).
Phase II: Target Generation and Ground Truthing	Construction	No construction or site establishment activities will be undertaken.
	Operation	1. Airborne and / or ground geophysics. 2. Soil sampling will be undertaken at identified sites in accordance with the following method: a. Site access will be gained through the use of

Phase		Activities
		existing roads and / or tracks. b. In instances where access cannot be gained to the identified sites via established roads and tracks, vehicle access will be gained to sampling sites through the veld. The establishment of a track to gain repeated access to a soil sample site will not be required. c. A maximum of 30kg per soil sample will be taken.
	Decommissioning	No decommissioning activities will be required.
Phase III: Scout Drilling and Delineation Drilling	Construction	1. Site access will be gained through the use of existing roads and / or tracks. 2. In instances where access cannot be gained to the identified sites via established roads and tracks, vehicle access to drill sites will be gained through the establishment of access tracks. No formal road construction activities will be undertaken. 3. Site establishment will include: a. Vegetation clearing of drill pad area, if required; b. Topsoil stripping and stockpiling, if required; c. Drill pad compaction, if required; d. Excavation and lining of drill water sump; e. Erection of temporary site office and a shaded area, potable ablution faculties and water storage tanks, core bay and dangerous goods storage area; and f. Erection of safety barrier.
	Operation	1. Exploration drilling; and 2. Sample collection and storage.
	Decommissioning	1. Removal of temporary site office and shaded area, potable ablution faculties and water storage tanks and core bay, diesel, oils and lubricants storage; and 2. Drill pad rehabilitation will include, if required: a. Ripping of drill pad; b. Re-spreading of stockpiled topsoil; and c. Re-vegetation.

2.1.4. Listed activities (in terms of the NEMA EIA regulations)

It should be noted that the detailed prospecting works programme as it relates to the location and extent of the soil sampling and drilling sites can only be determined after the preceding phases of the prospecting works programme has been completed.

The activities as listed in terms of the National Environmental Management Act 107 of 1998 (Listing Notices 1 to 3, Government Notice Regulation (GNR) 544, 545 and 546), which may be of relevance is included in Table 9. The table includes a description of the circumstances which will trigger the requirement for authorisation in terms of the National Environmental Management Act 107 of 1998.

In terms of Regulation 544, any activity which requires a prospecting right or renewal thereof in terms of Section 16 and 18 respectively of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) will require a Basic Assessment Process to be undertaken and authorisation to be issues. This specific listed Activity 19 has not yet come into effect and authorisation for this activity is not therefore required.

Table 9: Activities listed in terms of the National Environmental Management Act 107 of 1998

#	Activity Description	Requirements
GNR 544 Activity 11	The construction of: (i) …. (ii) …. (iii) …. (iv) …. (v) …. (vi) …. (vii) …. (viii) …. (ix) …. (x) …. (xi) infrastructure or structures covering 50 square metres or more. where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	A number of water courses have been identified on the proposed prospecting site. It is not currently known whether any activities will be required to be undertaken within and / or within 32 metres of the identified watercourses. The construction of a drill pad (with an estimated footprint of 112.5m^2) or possible future bulk sampling within and / or within 32 metres of the identified watercourses will require authorisation. *It should be noted that a 500m buffer around wetlands and / or pans must be applied in terms of the requirements of the National Water Act.*
GNR 544 Activity 18	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse; (ii) …. (iii) …. (iv) …. but excluding where such infilling, depositing, dredging, excavation, removal or moving is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or occurs behind the development setback line.	A number of water courses have been identified on the proposed prospecting site. It is not currently known whether any activities will be required to be undertaken within and / the identified watercourses. It is expected that prospecting activities which may affect any of the identified watercourses will trigger this activity and would require authorisation.
GNR 544 Activity 28	The expansion of existing facilities for any process or activity where such expansion will result in the need for a new, or amendment of, an existing permit or license in terms of national or provincial legislation governing the release of emissions or pollution, excluding where the facility, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.	In terms of Section 21 of the National Water Act 36 of 1998 (c) impeding or diverting the flow of water in a watercourse; and (i) altering the bed, banks, course or characteristics of a watercourse required a water use license. A number of water courses have been identified on the proposed prospecting site. It is not currently known whether any activities will be required to be undertaken within and / the identified watercourses. In the event that prospecting are undertaken which impedes or diverts the flow of water and / or alters the bed, banks, course or characteristics of a watercourse, a water use license as well as environmental authorisation in terms of the National Environmental

#	Activity Description	Requirements
		Management Act 107 of 1998 will be required.
GNR 546 Activity 10	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. **In Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and Northern Cape provinces:** (i) …. (ii) Outside urban areas, in: a) …. b) …. c) …. d) …. e) …. f) …. g) …. h) …. i) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse where no such setback line has been determined; j) ….	A number of water courses have been identified on the proposed prospecting site. Onsite fuel storage will exceed the specified threshold. In the event that storage is undertaken in within 100m from the edge of a watercourse, authorisation for this activity will be required.
GNR 546 Activity 14	The clearance of an area of 5 hectares or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation **In Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Limpopo, Mpumalanga, Northern Cape, Northwest and Western Cape:** (i) All areas outside urban areas.	The site is regarded to have low level of transformation and that more that 75% or more of the vegetative cover constitutes indigenous vegetation. Pending the outcomes of Phase I of the Prospecting Plan, the extent of vegetation clearance must be determined and authorisation applied for if the specified threshold of 5ha is exceeded.

2.2. Identification of potential impacts

(Refer to the guideline)

The identified potential impacts per phase and activity are included in Table 10.

2.2.1. Potential impacts per activity and listed activities

Table 10: Potential Impacts per Activity

Phase		Activities	Potential Impacts
Phase I: Data Acquisition and Desktop Study			
Phase I: Data Acquisition	N/A	Data collection and assessment (desktop only)	1. None identified.
Phase I: Desktop Study	N/A	Data Assessment	2. None identified.
Phase II: Target Generation and Ground Truthing			
Phase II: Airborne geophysics survey	N/A	Site fly-over (flying height of approximately 25m over a period of approximately 1 week)	3. Noise impacts resulting from site fly-overs affecting cattle and game farm animals. 4. Nuisance noise impacts on communities and landowners and other persons.
Phase II: Ground geophysics survey	N/A	Ground survey	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.
Phase II: Soil Sampling	Construction Phase	No construction or site establishment activities will be undertaken	6. No anticipated impacts.
	Operational Phase	Site access	7. Destruction and / or disturbance of on-site fauna and flora. 8. Poor access control resulting in impacts on cattle movement, breeding and grazing practices. 9. Vehicle traffic noise impact affecting cattle and / or wildlife.
		Soil sampling (30kg of soil per sample)	10. Soil disturbance from soil sampling resulting in soil structure disturbance / destruction and possibly soil erosion.
	Decommissioning Phase	No decommissioning activities will be required	11. No anticipated impacts.
Phase III: Scout Drilling and Delineation Drilling	Construction	Site Access	12. Destruction and / or disturbance of on-site fauna and flora.

Phase		Activities	Potential Impacts
			13. Soil compaction resulting from repeated use of access roads to drill sites.
			14. Vehicle traffic noise impact affecting cattle and / or wildlife.
			15. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.
			16. Potential destruction of heritage resources.
		Site establishment activities including: (a) *Vegetation clearing of drill pad area* (b) *Topsoil stripping and stockpiling* (c) *Drill pad compaction* (d) *Excavation and lining of drill water sump* (e) *Erection of temporary site office shaded area, potable ablution faculties and water storage tanks and core bay* (f) *Erection of fuel storage tank* (g) *Erection of safety barrier* (h) *Waste generation and management*	17. Destruction and / or disturbance of on-site fauna and flora.
			18. Soil disturbance and compaction and topsoil stockpiling resulting in soil erosion.
			19. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).
			20. Visual impact affecting visual character and "sense of place".
			21. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.
			22. Potential destruction of heritage resources.
	Operation	Exploration drilling and core sample collection and storage including: *(a) Scout and delineation drilling* *(b) Drill maintenance and re-fuelling* *(c) Core sample collection and storage* *(d) Drill fluid collection, storage and evaporation* (e) *Waste generation and management*	23. Water and soil pollution resulting from disposal of drill fluids.
			24. Continued soil erosion from topsoil stockpile and compaction from drill pad platform.
			25. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.
			26. Dust emissions from drilling and general site activities (including vehicle entrained dust).

Phase		Activities	Potential Impacts
			27. Visual Impact affecting visual character and "sense of place".
			28. Vehicle traffic and drill noise impact affecting wildlife game farm animals.
			29. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.
			30. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.
	Decommissioning	Removal of temporary infrastructure including: *(a) Removal of temporary site office shaded area, potable ablution faculties, water storage tanks and core bay* *(b) Borehole capping* Drill pad rehabilitation including: *(a) Ripping of drill pad and access road* *(b) Re-spreading of stockpiled topsoil* *(c) Re-vegetation*	31. Dust emissions from decommissioning activities (including vehicle entrained dust).
			32. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.
			33. Potential water and soil pollution resulting from hydrocarbon spills.
			34. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.

2.2.2. Potential cumulative impacts

The identified cumulative impacts are included in Table 11.

Table 11: Identified Cumulative Impacts

Aspect	Impacts	Detailed Description
Climate	Release of greenhouse gas emissions	1. The release of greenhouse gasses and other contaminants to the atmosphere is expected as a result of land based vehicle activity. 2. The clearing of vegetation negatively affects carbon sequestration efficiency and increase emissions resulting from decomposition. These impacts are regarded as insignificant in terms of contribution, however, the risks are recognised as a cumulative impact.
Soils	Loss of natural resource (topsoil)	3. The loss of topsoil as a natural resource, as a result of soil contamination and erosion negatively affecting land capability.
Hydrology	Surface water pollution	4. Surface water quality impacts may extend beyond the boundary of the site if not managed appropriately.
Geohydrology	Groundwater pollution	5. Groundwater contamination, if it occurs, is regarded as a cumulative impact. Regionally there is a high dependency on groundwater resources and all activities which may impact on ground water resources are regarded as significant.
Biodiversity (Flora, Fauna and Avifauna)	Loss of biodiversity and disruption of existing ecosystem functioning	6. The cumulative impacts relate to land transformation resulting in the loss of habitat.
Visual	Visual disturbance and change of landscape character.	7. The cumulative impacts relate to visual disturbance is regarded to impact the regional “sense of place”.
Traffic	Increased traffic	8. The increase in traffic flow may have an impact on local, regional and national roads in the area.

2.2.3. Potential impact on heritage resources

A number of stone kraals were noted during the site investigation of Portion 2 of the Farm 12. Though a Heritage Impact Assessment was not undertaken as part of the development of the Draft Environmental Management Plan, it is anticipated that these features may have heritage and / or archaeological value.

Potential heritage impact will only occur once drill sites have been identified and on-site activities commences and it is therefore recommended that the Heritage Impact Assessment only be undertaken prior to these planned activities.

The Heritage Impact Assessment will be conducted over identified localised drill sites in order to identify any cultural, heritage and or archaeological features which may be impacted on.

2.2.4. Potential impacts on communities, individuals or competing land uses in close proximity

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

The following impacts as included in the impacts identified in Section 2.2.1 are regarded as community impacts:

1. Potential water and soil pollution resulting from hydrocarbon spills and soil erosion;

2. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime; and

3. Visual Impact.

Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

2.2.4.1. Water quality and availability

There are two non-perennial rivers to the south west of the site; the Holriver and Grootboetsap River. The Grootboetsap River flows into the Holriver which flows adjacent to the R371 and forms the south western boundary of the prospecting area. The Holriver eventually flows into the Spitskop Dam, approximately 30km to the south east.

Possible pollution sources include stockpiled soil and all areas cleared of vegetation. The eroded soil particles may be carried by stormwater to these rivers which will result in an increase in the Total Suspended Solids (TSS) and Total Dissolved Solids (TDS) of the water courses. The storage of dangerous goods, temporary ablution facilities and discharge of drill fluids may also lead to surface water pollution is not managed appropriately.

During the stakeholder consultation process, water availability was raised as a major concern. A high dependency on groundwater resources was confirmed by the landowners.

Limited quantities of dangerous goods (fuel, oil and lubricants) will be stored on site. The transportation, handling and storage of such materials may result in spills and further water quality impacts in the events of spills when carried by stormwater to the water courses.

This impact is also regarded as a cumulative impact due to the potential contribution to water quality deterioration of the river systems if not managed appropriately.

2.2.4.2. Influx of persons resulting in increased crime rates

Feedback from stakeholders confirms a potential impact associated with an increased crime rate associated with an influx of unemployed persons travelling to mine sites seeking employment. Landowners commented on non-violent incidences of theft.

2.2.4.3. Visual impact

The general characteristics of the site and that of the surrounding area are regarded to be that of “wilderness” and prospecting activities may result in localised visual impacts.

2.2.5. Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties

The list of impacts has been compiled with the participation of the stakeholders as commented on in Table 30.

Various land portions (as included in Table 12) have been identified to be owned by the state. The Northern Cape: Department of Rural Development and Land Reform was contacted on the 2nd of December 2013 to confirm that these land portions is under the control of the Department and to obtain landowner comment. Feedback in this regard is still being awaited.

Table 12: State Owned Land

Relationship to Prospecting Area	Land Portion	Ownership in accordance with the title deeds
Directly affected landowner	Vaalboschfontein No. 11 Ptn 0	National Government Of The Republic of South Africa
Directly affected	Kookfontein No. 31 Ptn 0	Suid-Afrikaanse Bantoetrust

Relationship to Prospecting Area	Land Portion	Ownership in accordance with the title deeds
landowner		
Adjacent land owner	Vaalboschhoek 1046 Ptn 2	Republic of Bophuthatswana
Adjacent land owner	Vaalboschhoek 1046 Ptn 5	Republic of Bophuthatswana
Adjacent land owner	Farm 1048	Republic of Bophuthatswana
Adjacent land owner	Chosen Farm 1049 Ptn 2	National Government of the Republic of South Africa
Adjacent land owner	Farm 1055 Ptn 3	South African Bantu Trust
Adjacent land owner	Nooitegedacht No. 32 Ptn 0	Suid-Afrikaanse Bantoetrust
Adjacent land owner	Nooitegedacht No. 32 Ptn 1	Suid-Afrikaanse Bantoetrust
Adjacent land owner	Nooitegedacht No. 32 Ptn 4	Suid-Afrikaanse Bantoetrust

2.2.6. Confirmation of specialist report appended.

(Refer to guideline)

No specialist studies have been undertaken as part of the development of the Environmental Management Plan. The information included in the report is based on the available desktop information (as referenced), site observation and consultation with stakeholders.

3. REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts

3.1. Assessment of the significance of the potential impacts

3.1.1. Criteria of assigning significance to potential impacts

The evaluation of impacts is conducted in terms of the criteria detailed in Table 13 to Table 18. The various environmental impacts and benefits of this project are discussed in terms of impact status, extent, duration, probability, and intensity. Impact significance is regarded as the sum of the impact extent, duration, probability and intensity and a numerical rating system has been applied to evaluate impact significance; therefore an impact magnitude and significance rating is applied to rate each identified impact in terms of its overall magnitude and significance (Table 18).

In order to adequately assess and evaluate the impacts and benefits associated with the project it was necessary to develop a methodology that would scientifically achieve this and to reduce the subjectivity involved in making such evaluations. To enable informed decision-making it is necessary to assess all legal requirements and clearly defined criteria in order to accurately determine the significance of the predicted impact or benefit on the surrounding natural and social environment.

3.1.1.1.1. Impact Status

The nature or status of the impact is determined by the conditions of the environment prior to construction and operation. A discussion on the nature of the impact will include a description of what causes the effect, what will be affected and how it will be affected. The nature of the impact can be described as negative, positive or neutral.

Table 13: Status of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Positive	A benefit to the receiving environment.	**P**
Neutral	No cost or benefit to the receiving environment.	**-**
Negative	A cost to the receiving environment.	N

3.1.1.1.2. Impact Extent

The extent of an impact is considered as to whether impacts are either limited in extent of if it affects a wide area or group of people. Impact extent can be site specific (within the boundaries of the development area), local, regional or national and/or international.

Table 14: Extent of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Low	Site Specific; Occurs within the site boundary.	1
Medium	Local; Extends beyond the site boundary; Affects the immediate surrounding environment (i.e. up to 5 km from the Project Site boundary).	2
High	Regional; Extends far beyond the site boundary; Widespread effect (i.e. 5 km and more from the Project Site boundary).	3
Very High	National and/or international; Extends far beyond the site boundary; Widespread effect.	4

3.1.1.2. Impact Duration

The duration of the impact refers to the time scale of the impact or benefit.

Table 15: Duration of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Low	Short term; Quickly reversible; Less than the project lifespan; 0 – 5 years.	1
Medium	Medium term; Reversible over time; Approximate lifespan of the project; 5 – 17 years.	2
High	Long term; Permanent; Extends beyond the decommissioning phase; >17 years.	3

3.1.2. Impact Probability

The probability of the impact describes the likelihood of the impact actually occurring

Table 16: Probability of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Improbable	Possibility of the impact materialising is negligible; Chance of occurrence <10%.	1
Probable	Possibility that the impact will materialise is likely; Chance of occurrence 10 – 49.9%.	2
Highly	It is expected that the impact will occur; Chance of occurrence	3

Probable	50 – 90%.	
Definite	**I**mpact will occur regardless of any prevention measures; Chance of occurrence >90%.	4
Definite and Cumulative	Impact will occur regardless of any prevention measures; Chance of occurrence >90% and is likely to result in in cumulative impacts	5

3.1.3. Impact Intensity

The intensity of the impact is determined to quantify the magnitude of the impacts and benefits associated with the proposed project.

Table 17: Intensity of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Maximum Benefit	Where natural, cultural and / or social functions or processes are positively affected resulting in the maximum possible and permanent benefit.	+ 5
Significant Benefit	Where natural, cultural and / or social functions or processes are altered to the extent that it will result in temporary but significant benefit.	+ 4
Beneficial	Where the affected environment is altered but natural, cultural and / or social functions or processes continue, albeit in a modified, beneficial way.	+ 3
Minor Benefit	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are only marginally benefited.	+ 2
Negligible Benefit	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are negligibly benefited.	+ 1
Neutral	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are not affected.	0
Negligible	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are negligibly affected	- 1
Minor	Where the impact affects the environment in such a way that natural, cultural and / or social functions or processes are only marginally affected.	- 2
Average	Where the affected environment is altered but natural, cultural and / or social functions or processes continue, albeit in a modified way.	- 3
Severe	Where natural, cultural and / or social functions or processes are altered to the extent that it will temporarily cease.	- 4
Very Severe	Where natural, cultural and / or social functions or processes are altered to the extent that it will permanently cease.	- 5

3.1.4. Impact Significance

The impact magnitude and significance rating is utilised to rate each identified impact in terms of its overall magnitude and significance.

Table 18: Impact Magnitude and Significance Rating

IMPACT	RATING	DESCRIPTION	QUANTITATIVE RATING
Positive	High	Of the highest positive order possible within the bounds of impacts that could occur.	+ 12 – 16
	Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. Other means of achieving this benefit are approximately equal in time, cost and effort.	+ 6 – 11
	Low	Impacts is of a low order and therefore likely to have a limited effect. Alternative means of achieving this benefit are likely to be easier, cheaper, more effective and less time-consuming.	+ 1 – 5
No Impact	No Impact	Zero impact.	0
Negative	Low	Impact is of a low order and therefore likely to have little real effect. In the case of adverse impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural, and economic activities of communities can continue unchanged.	- 1 – 5
	Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly possible. Social cultural and economic activities of communities are changed but can be continued (albeit in a different form). Modification of the project design or alternative action may be required.	- 6 – 11
	High	Of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or a combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt.	- 12 - 16

The impacts for each individual phase of the project, namely the construction, operational and decommissioning / closure phases are rated in terms of its significance in Section 3.1.5. The table details the identified / expected impacts of a proposed activity during each project phase before the proposed mitigations measures.

3.1.5. Potential impact of each main activity in each phase, and corresponding significance assessment

Table 19: Potential Impacts and Significance Rating

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
Phase I: Data Acquisition and Desktop Study									
Phase I: Data Acquisition	N/A	Data collection and assessment (desktop only)	1. None identified.	-	N/A	N/A	N/A	N/A	N/A
Phase I: Desktop Study	N/A	Data Assessment	2. None identified.	-	N/A	N/A	N/A	N/A	N/A
Phase II: Target Generation and Ground Truthing									
Phase II: Airborne geophysics survey	N/A	Site fly-over	3. Noise impacts resulting from site fly-overs affecting cattle and game farm animals. 4. Nuisance noise impacts on communities and landowners and other persons.	N	2	1	2	2	7
Phase II: Ground geophysics survey.	N/A	Ground surveys	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	N	2	2	3	3	10
Phase II: Soil Sampling	Construction Phase	No construction or site establishment activities will be undertaken	6. No anticipated impacts.	-	N/A	N/A	N/A	N/A	N/A
	Operational Phase	Site access	7. Destruction and / or disturbance of on-site fauna and flora.	N	1	1	2	2	6
			8. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	N	2	2	3	3	10
			9. Vehicle traffic noise impact affecting cattle and / or wildlife.	N	1	1	2	2	6

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		Soil sampling (30kg of soil per sample)	10. Soil disturbance from soil sampling resulting in soil structure destruction, compaction and erosion.	N	1	2	1	2	6
	Decommissioning Phase	No decommissioning activities will be required	11. No anticipated impacts.	-	N/A	N/A	N/A	N/A	N/A
Phase III: Scout Drilling and Delineation Drilling									
Phase III: Scout Drilling and Delineation Drilling	Construction	Site Access	12. Destruction and / or disturbance of on-site fauna and flora.	N	1	2	4	3	10
			13. Soil compaction resulting from repeated use of access roads to drill sites.	N	1	1	4	2	8
			14. Vehicle traffic noise impact affecting cattle and / or wildlife.	N	1	1	2	2	6
			15. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	N	2	2	3	3	10
			16. Potential destruction of heritage resources.	N	Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented				
		Site establishment activities including: (a) *Vegetation clearing of drill pad area* (b) *Topsoil stripping and stockpiling* (c) *Drill pad compaction* (d) *Excavation and lining*	17. Destruction and / or disturbance of on-site fauna and flora.	N	1	2	4	3	10
			18. Soil disturbance and topsoil stockpiling resulting in soil compaction and erosion.	N	2	1	5	3	11
			19. Dust emission resulting from site clearing, soil stripping and	N	2	1	5	2	10

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		of drill water sump (e) *Erection of temporary site office shaded area, potable ablution faculties and water storage tanks and core bay* (f) *Erection of fuel storage tank* (g) *Erection of safety barrier* (h) *Waste generation and management*	construction activities (including vehicle entrained dust).						
			20. Visual Impact affecting visual character and "sense of place".	N	2	1	2	1	6
			21. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	N	2	1	2	3	8
			22. Potential destruction of heritage resources.	N	Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented				
	Operation	Exploration drilling and core sample collection and storage including: *(a) Scout and delineation drilling* *(b) Drill maintenance and re-fuelling* *(c) Core sample collection and storage* *(d) Drill fluid collection, storage and evaporation* (e) *Waste generation and management*	23. Water and soil pollution resulting from disposal of drill fluids.	N	2	2	5	3	12
			24. Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	N	2	1	5	3	11
			25. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	N	2	2	5	3	12
			26. Dust emissions from drilling and general site activities (including vehicle entrained dust)	N	2	1	5	2	10
			27. Visual Impact affecting visual character and "sense of place"	N	2	1	2	1	6
			28. Vehicle traffic and drill noise impact affecting wildlife game	N	1	1	2	2	6

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
			farm animals.						
			29. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	N	2	2	3	3	10
			30. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	N	2	1	2	3	8
	Decommissioning	Removal of temporary infrastructure including: *(a) Removal of temporary site office shaded area, potable ablution faculties, water storage tanks and core bay* *(b) Borehole capping*	31. Dust emissions from decommissioning activities (including vehicle entrained dust).	N	1	2	3	3	9
			32. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	N	2	2	3	3	10
			33. Potential water and soil pollution resulting from hydrocarbon spills.	N	2	2	5	3	12
		Drill pad rehabilitation including: *(a) Ripping of drill pad and access road* *(b) Re-spreading of stockpiled topsoil* (c) *Re-vegetation*	34. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	N	2	1	5	3	11

3.1.6. Assessment of potential cumulative impacts

Table 20: Potential Cumulative Impact and Significance Rating

Aspect	Impacts	Detailed Description	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
Climate	Release of greenhouse gas emissions	The release of greenhouse gasses and other contaminants to the atmosphere is expected as a result of land based vehicle activity.	N	4	2	2	1	9
		The clearing of vegetation negatively affects carbon sequestration efficiency and increase emissions resulting from decomposition. These impacts are regarded as insignificant in terms of contribution. The risks are recognised as a cumulative impact.	N	4	3	2	1	10
Soils	Loss of natural resource (topsoil)	The loss of topsoil as a natural resource as a result of soil contamination, soil compaction and erosion negatively affecting land capability.	N	2	3	3	2	10
Hydrology	Surface water pollution	Surface water quality impacts will extend beyond the boundary of the site if not managed appropriately.	N	3	3	3	2	11
Geohydrology	Groundwater pollution	Groundwater contamination is regarded as a cumulative impact. Regionally there is a high dependency on groundwater resources and all activities which may impact on ground water resources are regarded as significant.	N	3	3	1	2	9
Biodiversity (Flora, Fauna and Avifauna)	Loss of biodiversity and disruption of existing ecosystem functioning	The cumulative impacts relate to land transformation resulting in the loss of habitat.	N	2	3	2	2	9
Visual	Visual disturbance and change of landscape character.	The cumulative impacts relate to visual disturbance is regarded to impact the regional “sense of place”.	N	2	1	1	1	5
Traffic	Increased traffic	The increase in traffic flow may have an impact on	N	3	1	2	1	7

Aspect	Impacts	Detailed Description	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		local, regional and national roads in the area.						

3.2. Proposed mitigation measures to minimise adverse impacts

3.2.1. List of actions, activities, or processes that have sufficiently significant impacts to require mitigation

The list impacts and the proposed mitigation and / or management measures are included in Table 21.

3.2.2. Concomitant list of appropriate technical or management options

(Chosen to modify, remedy, control or stop any action, activity, or process which will cause significant impacts on the environment, socio-economic conditions and historical and cultural aspects as identified. Attach detail of each technical or management option as appendices)

The list impacts and the proposed mitigation and / or management measures are included in Table 21.

Table 21: Proposed Mitigation Measures

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
Phase I: Data Acquisition and Desktop Study				
Phase I: Data Acquisition	N/A	Data collection and assessment (desktop only)	None identified.	1. No mitigation proposed
Phase I: Desktop Study	N/A	Data Assessment	None identified.	2. No mitigation proposed
Phase II: Target Generation and Ground Truthing				
Phase II: Airborne geophysics survey	N/A	Site fly-over	Noise impacts resulting from site fly-overs affecting cattle and game farm animals.	3. Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms. 4. Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, which may result in injury or damage.
			Nuisance noise impacts affecting communities and landowners and other persons.	5. No mitigation proposed.
Phase II: Ground geophysics survey.	N/A	Ground surveys	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	6. Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
Phase II: Soil Sampling	Construction Phase	No construction or site establishment activities will be undertaken	No anticipated impacts.	7. No mitigation proposed.
	Operational Phase	Site access	Destruction and / or disturbance of on-site fauna and flora.	8. Use existing track and roads in all instances as far as is practicable.

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
				9. As part of the soil sampling programme, no tracks will be cleared for once-off access to sampling sites. 10. Avoid significant vegetation such as trees and large shrubs in the event that driving through the veld is required to access an identified sampling site. 11. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna. 12. Vehicle speed will be reduced, particularly in highly vegetated areas to avoid deaths by vehicle impacts.
			Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	13. Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
			Vehicle traffic noise impact affecting cattle and / or wildlife.	14. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.
		Soil sampling (30kg of soil per sample)	Soil disturbance from soil sampling resulting in soil structure destruction, soil compaction and soil erosion.	15. Soil disturbances are to be limited as far as is practicable.
	Decommissioning Phase	No decommissioning activities will be required	No anticipated impacts.	16. No mitigation proposed.
Phase III: Scout Drilling and Delineation Drilling				
Phase III: Scout Drilling and Delineation Drilling	Construction	Site Access	Destruction and / or disturbance of on-site fauna and flora.	17. Use existing track and roads in all instances as far as is practicable. 18. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided.

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
				19. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna. 20. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.
			Soil compaction resulting from repeated use of access roads to drill sites as well as of the drill pads.	21. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts. 22. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.
			Vehicle traffic noise impact affecting cattle and / or wildlife.	23. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.
			Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	24. Access control procedures must be agreed on with farm owners and staff trained.
			Potential destruction of heritage resources.	25. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented.
		Site establishment activities including: (i) *Vegetation clearing of drill pad area* (j) *Topsoil stripping and stockpiling* (k) *Drill pad compaction* (l) *Excavation and lining of*	Destruction and / or disturbance of on-site fauna and flora.	26. The removal of vegetation within the drill pad area will be minimized. 27. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts. 28. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment.

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
		drill water sump (m) *Erection of temporary site office shaded area, potable ablution faculties and water storage tanks and core bay* (n) *Erection of fuel storage tank* (o) *Erection of safety barrier* (p) *Waste generation and management*		29. An fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire.
			Soil disturbance and topsoil stockpiling resulting in soil erosion.	30. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil. 31. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. 32. Where practicable topsoil will be stripped to a depth of 10cm. 33. Vegetation removed through lower blade clearing will be mixed with topsoil to increase organic content and to preserve the seed bank in order to aid rehabilitation efforts. 34. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3. 35. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.
			Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	36. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. 37. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
				be considered in order to conserve water resources.
			Visual Impact affecting visual character and "sense of place".	38. The shaded office area, portable ablution facilities, vertical water tanks and any other infrastructure should be acquired with a consideration for colour. Natural earth, green and mat black options which will blend in with the surrounding area must be favoured.
			Influx of persons (job seekers) to site as a result of increased activity.	39. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 40. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site. 41. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.
			Potential destruction of heritage resources.	42. Prior to site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented.
	Operation	Exploration drilling and core sample collection and storage including: *(f) Diamond drilling* *(g) Drill maintenance and re-fuelling* *(h) Core sample collection and storage* *(i) Drill fluid collection, storage and evaporation*	Water and soil pollution resulting from disposal of drill fluids.	43. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation. 44. The sump will be constructed to divert stormwater away and / or around the sump to avoid clean stormwater inflow.
			Continued soil erosion from topsoil stockpile and drill pad platform.	45. In the event that raise blade clearing is not undertaken, and the drill pad is cleared, topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3. 46. The topsoil stockpile will be shaped to

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
		(j) *Waste generation and management*		divert stormwater around the drill pad to minimise soil erosion of the pad. 47. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.
			Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	48. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity. 49. Oils and lubricant will be stored within secondary containment structures. 50. Where practicable, vehicle maintenance will be undertaken off-site. 51. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil. 52. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop. 53. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified. 54. A sufficient number of waste receptacles will be provided. 55. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 56. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight. 57. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to an

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
				licensed recycling facility.
			Dust emissions from drilling and general site activities (including vehicle entrained dust)	58. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement. 59. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.
			Visual Impact affecting visual character and "sense of place".	60. Visual impact of structures will be mitigated through measures as included in Item 32. 61. Visual dust dispersion will be mitigated through measures as included in Item 30.
			Vehicle traffic and drill noise impact affecting wildlife game farm animals.	62. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.
			Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	63. Access control procedures must be agreed on with farm owners.
			Influx of persons (job seekers) to site as a result of increased activity.	64. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 65. The landowner (the Department of Rural Development and Land Reform)will be notified of unauthorised persons encountered on site. 66. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
	Decommissioning	Removal of temporary infrastructure including: *(a) Removal of temporary site office shaded area, potable ablution faculties, water storage tanks and core bay* *(b) Borehole capping* Drill pad rehabilitation including: *(d) Ripping of drill pad and access road* *(e) Re-spreading of stockpiled topsoil* (f) *Re-vegetation*	Destruction and / or disturbance of on-site fauna.	67. Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes. 68. Drill holes must be permanently capped as soon as is practicable
			Dust emissions from decommissioning activities (including vehicle entrained dust).	69. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement. 70. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.
			Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	71. Access control procedures must be agreed on with farm owners and all staff trained.
			Potential water and soil pollution resulting from hydrocarbon spills, open boreholes and waste disposal practices.	72. All fuel storage tanks will be emptied prior to removal. 73. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination. 74. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to an licensed recycling facility.
			Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	75. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles. 76. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined

Phase		Activities	Potential Impacts	Proposed Mitigation / Management Practices
				by a suitably qualified ecologist. 77. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. 78. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.

3.2.2.1. Additional detailed description of proposed mitigation and management measures (where required)

3.2.2.1.1. Raised blade clearing

Where site clearing is necessary and where practicable, raised blade clearing should be conducted to minimise disturbance and aid rehabilitation efforts. Raised blade clearing involves setting the blade of the bulldozer above ground level and cutting off vegetation at the stem whilst leaving the root stock and topsoil intact. This approach removes the need to strip, stockpile and re-spread topsoil which can reduce earthmoving costs. The vegetation removed will be stockpiled and reused during the re-vegetation phase as an additional source of seeds, as well as to provide a mulch medium over the affected areas.

3.2.2.2. Soil stockpiles: Mechanical stabilisation of slopes

The use of mechanical erosion control methods must be implemented if required.

This may include the use of geotextiles such as Kaytech SoilSaver ©. An example of such an erosion control textile is provided in Figure 8.

The installation of erosion control blankets should be undertaken in instances where soil erosion is severe and the cost of installation regarded as viable for the effective mitigation of impacts associated with soil erosion.

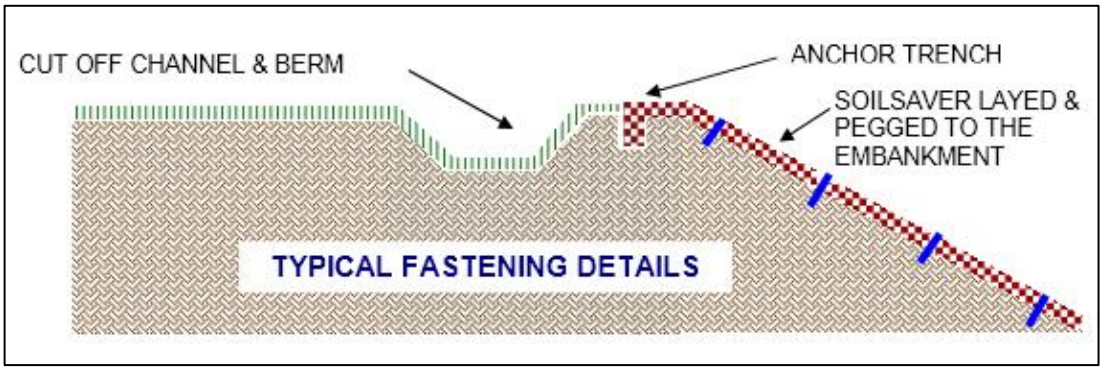


Figure 8: Erosion control textile (Source: Kaytech SoilSaver ©)

3.2.2.3. Borehole capping

Drill holes must be permanently capped as soon as is practicable. Figure 9 below provides the prepared procedure for the secure plugging of exploration drill holes.

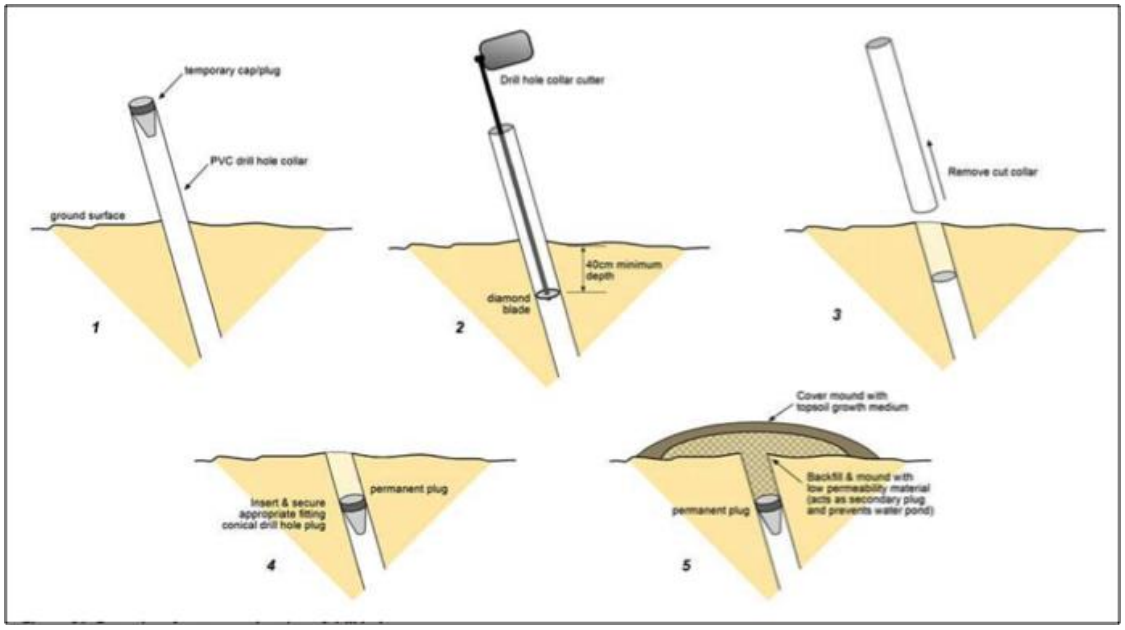


Figure 9: Borehole capping (Source: Department of Mines and Petroleum, DRAFT Guidelines for Environmentally Responsible Mineral Exploration & Prospecting in Western Australia, March 2012)

3.2.2.4. Re-vegetation

It is recommended that a standard commercial fertilizer high in the standard elements is added to the soil before re-vegetation, at a rate of 10-20kg/ha (application rate to be confirmed based on input from a suitably qualified specialist). The fertilizer should be added to the soil in a slow release granular form.

A suitably qualified ecologist will be appointed to determine the appropriate veld grass mix for hand seeding.

Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.

3.2.2.5. Access Control

The final prospecting works programme (once the extent of on-site activities have been determined) must be presented to the land owner / occupier and management measures as it relates access control measures must be agreed on.

Management measures may include the temporary installation of remote control access points and / or cattle grids.

3.2.2.6. Development of procedures and checklists

The following procedures will be developed and all staff and workers will be adequately trained on the content and implementation thereof.

3.2.2.6.1. Emergency Preparedness and Response

The procedure will be developed to specifically include risk identification, preparedness, response measures and reporting. The procedure will specifically include spill and fire risk, preparedness and response measures. The appropriate emergency control centers (fire department, hospitals) will be identified and the contact numbers obtained and made available on site. The procedure must be developed in consultation with all potentially affected landowners.

In the event that risks are identified which may affected adjacent landowners (or other persons), the procedure will include the appropriate communication strategy to inform such persons and provide response measures to minimize the impact.

3.2.2.6.2. Incident Reporting Procedure

Incident reporting will be undertaken in accordance with an established incident reporting procedure to (including but not limited to):

(a) Provide details of the responsible person including any person who: (i) is responsible for the incident; (ii) owns any hazardous substance involved in the incident; or (iii) was in control when the incident occurred;

(b) Provide details of the incident (time, date, location);

(c) The details of the cause of the incident;

(d) Identify the aspects of the environment impacted;

(e) The details corrective action taken, and

(f) The identification of any potential residual or secondary risks that must be monitored and corrected or managed.

3.2.2.6.3. Environmental and Social Audit Checklist

An environmental audit checklist will be established to include the environmental and social mitigation and management measures as developed and approved as part of the Environmental Management Plan. Non-conformances will be identified and corrective action taken where required.

3.2.3. Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration)

Table 22: Significance Rating after Mitigation

Phase		Activities	Potential Impacts	Significance before Mitigation	Status	Extent	Duration	Probability	Intensity	Significance after Mitigation
Phase I: Data Acquisition and Desktop Study										
Phase I: Data Acquisition	N/A	Data collection and assessment (desktop only)	1. None identified.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase I: Desktop Study	N/A	Data Assessment	2. None identified.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase II: Target Generation and Ground Truthing										
Phase II: Airborne geophysics survey	N/A	Site fly-over	3. Noise impacts resulting from site fly-overs affecting cattle and game farm animals. 4. Nuisance noise impacts on communities and landowners and other persons.	7	N	2	1	2	2	7
Phase II: Ground geophysics survey	N/A	Ground surveys	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	10	N	2	2	1	3	8
Phase II: Soil Sampling	Construction Phase	No construction or site establishment activities will be undertaken	6. No anticipated impacts.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Operational Phase	Site access	7. Destruction and / or disturbance of on-site fauna and flora.	6	N	1	1	1	2	5
			8. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	10	N	2	2	1	3	8

Phase		Activities	Potential Impacts	Significance before Mitigation	Status	Extent	Duration	Probability	Intensity	Significance after Mitigation
			9. Vehicle traffic noise impact affecting cattle and / or wildlife.	6	N	1	1	1	1	4
		Soil sampling (30kg of soil per sample)	10. Soil disturbance from soil sampling resulting in soil erosion.	6	N	1	2	1	1	5
	Decommissioning Phase	No decommissioning activities will be required	11. No anticipated impacts.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phase III: Scout Drilling and Delineation Drilling										
Phase III: Scout Drilling and Delineation Drilling	Construction Phase	Site Access	12. Destruction and / or disturbance of on-site fauna and flora.	10	N	1	1	3	1	6
			13. Soil compaction resulting from repeated use of access roads to drill sites.	8	N	1	1	2	1	5
			14. Vehicle traffic noise impact affecting cattle and / or wildlife.	6	N	1	1	1	1	4
			15. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	10						
			16. Potential destruction of heritage resources.	N/A	N	Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented				
		Site establishment activities including: *(a) Vegetation clearing of drill pad area* *(b) Topsoil stripping and stockpiling* *(c) Drill pad compaction* *(d) Excavation and lining of drill water*	17. Destruction and / or disturbance of on-site fauna and flora.	10	N	1	1	3	2	7
			18. Soil disturbance and topsoil stockpiling resulting in soil erosion.	11	N	1	1	3	2	7
			19. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	10	N	1	1	3	1	6

Phase		Activities	Potential Impacts	Significance before Mitigation	Status	Extent	Duration	Probability	Intensity	Significance after Mitigation
		sump *(e) Erection of temporary site office shaded area, potable ablution faculties and water storage tanks and core bay* *(f) Erection of fuel storage tank* *(g) Erection of safety barrier* *(h) Waste generation and management*	20. Visual Impact affecting visual character and "sense of place".	6	N	2	1	1	1	5
			21. Influx of persons (job seekers) to site as a result of increased activity.	8	N	2	1	1	3	7
			22. Potential destruction of heritage resources.	N/A	N	Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented				
	Operation Phase	Exploration drilling and core sample collection and storage including: *(a) Scout and delineation drilling* *(b) Drill maintenance and re-fuelling* *(c) Core sample collection and storage* *(d) Drill fluid collection, storage and evaporation* *(e) Waste generation and management*	23. Water and soil pollution resulting from disposal of drill fluids	12	N	1	1	2	1	5
			24. Continued soil erosion from topsoil stockpile and drill pad platform.	11	N	1	1	3	2	7
			25. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	12	N	1	1	2	1	5
			26. Dust emissions from drilling and general site activities (including vehicle entrained dust)	10	N	1	1	3	1	6
			27. Visual Impact affecting visual character and "sense of place"	6	N	2	1	1	1	5
			28. Vehicle traffic and drill noise impact affecting wildlife game farm animals	6	N	1	1	1	1	4
			29. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	10	N	2	2	1	3	8

Phase		Activities	Potential Impacts	Significance before Mitigation	Status	Extent	Duration	Probability	Intensity	Significance after Mitigation
			30. Influx of persons (job seekers) to site as a result of increased activity	8	N	2	1	1	3	7
	Decommissioning	Removal of temporary infrastructure including: *(c) Removal of temporary site office shaded area, potable ablution faculties, water storage tanks and core bay* *(d) Borehole capping* Drill pad rehabilitation including: *(g) Ripping of drill pad and access road* *(h) Re-spreading of stockpiled topsoil* (i) *Re-vegetation*	31. Dust emissions from decommissioning activities (including vehicle entrained dust).	9	N	1	1	3	1	6
			32. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	10	N	2	2	1	3	8
			33. Potential water and soil pollution resulting from hydrocarbon spills.	12	N	2	1	2	2	7
			34. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	11	N	1	1	3	2	7

4. REGULATION 52 (2) (d): Financial provision.The applicant is required to-

4.1. Plans for quantum calculation purposes

(Show the location and aerial extent of the aforesaid main mining actions, activities, or processes, for each of the construction operational and closure phases of the operation).

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, an airborne / ground geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling will be tested by initial drilling. The location and extent of soil sampling and drilling sites can therefore not be determined at this stage.

Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, a typical layout of a drill site (refer Figure 7) has been included to provide an understanding of the potential scale and significance of these activities.

The quantum calculation is therefore based on the following assumptions:

(a) That five drill sites will be identified and developed in accordance with the typical drill pad layout.

(b) Access roads to drill sites will be via the existing roads and tracks though an estimated 5,000m^2 of road rehabilitation has been provided for.

4.2. Alignment of rehabilitation with the closure objectives

(Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed)

The rehabilitation plan is developed one the premise that the rehabilitated areas must be safe, stable, non-polluting and are able to support a self-sustaining ecosystem similar to surrounding natural environment. To ensure that the rehabilitation plan is aligned with the closure objective, a high level risk assessment of the on-site activities has been undertaken to establish the potential risks associated therewith.

Table 23: High Level Risk Assessment

Components	Risks				Description
	Safety risk	*Instability*	*Pollution potential*	*Ecological functionality risks*	
Access Roads and Tracks				X	Ground disturbance resulting in the transformation of the natural environment, soil compaction and an increased risk of soil erosion.
Soil Sampling				X	
Drill Holes	X	X			Open drill holes pose a risk to fauna and possible contamination of groundwater resources. Water ponding on the location of the hole may cause subsidence.
Drill Pads (including temporary infrastructure)			X	X	Ground disturbance resulting in the transformation of the natural environment, soil compaction and an increased risk of soil erosion. The removal of temporary fuel storage tanks,

Components	Risks				Description
	Safety risk	*Instability*	*Pollution potential*	*Ecological functionality risks*	
					oil and lubricants as well as portable toilets may result in spills causing pollution.
Sumps				X	Open sumps pose a risk to fauna. Ground disturbance resulting in the transformation of the natural environment, compaction and an increased risk of soil erosion.

4.2.1. Rehabilitation Plan

4.2.1.1. Removal of temporary structures (including fuel storage tanks and ablution):

(a) All structures are to be dismantled and where appropriate, material should be recycled, including all steel, glass, prefabricated buildings and others as is appropriate.

(b) All surface pipelines and containers are to be drained of substances and these are to be containerised for appropriate disposal.

(c) All containers / pipes removed from site are to be recycled / disposed of at a suitably registered facility.

(d) All compacted soil areas are to be ripped to a depth of 200mm.

(e) Once all structures have been removed from the site, the affected areas are to be contoured to be free draining and are to blend with the surrounding topography.

(f) Stockpiled topsoil will be re-spread.

(g) The area is to be re-vegetated with the appropriate seed mix.

(h) The area is to be inspected on a monthly basis for a period of 6 months for the following:

- Remove any unwanted plants and weeds.
- Inspect for and repair soil / wind erosion features. Should engineering intervention be required to limit areas of consistent erosion (wind / water), these should be implemented timeously.
- Confirm re-vegetation target of 45%. If the target is not achieved re-seeding will be undertaken.

4.2.1.2. Waste removal:

All waste materials are to be appropriately containerised and removed from the site. The materials can either be recycled, returned to vendor, sold, or disposed of in an approved site.

4.2.1.3. Backfilling of sumps:

(a) Sumps must be backfilled after the fluid has evaporated/infiltrated. Sumps should be rehabilitated by replacing the material (which was originally excavated) in the reverse (i.e. topsoil should be re-spread last).

(b) The areas are to be re-vegetated with the appropriate seed mix and mulch from stripped vegetation

(c) The areas are to be inspected on a monthly basis for a period of 6 months for the following:

- Remove any unwanted plants and weeds.
- Inspect for and repair soil / wind erosion features. Should engineering intervention be required to limit areas of consistent erosion (wind / water), these should be implemented timeously.
- Confirm re-vegetation target of 45%. If the target is not achieved re-seeding will be undertaken.
- Inspect for subsidence, and if required undertake additional backfilling, re-vegetate and monitor.

4.2.1.4. Track rehabilitation:

(a) If topsoil was stripped during construction of the track, this must be re-spread. Compacted areas must also be contour ripped or scarified to relieve compaction and promote re-vegetation.

(b) The areas are to be re-vegetated with the appropriate seed mix.

(c) The areas are to be inspected on a monthly basis for a period of 6 months for the following:

- Remove any unwanted plants and weeds.
- Inspect for and repair soil / wind erosion features. Should engineering intervention be required to limit areas of consistent erosion (wind / water), these should be implemented timeously.
- Confirm re-vegetation target of 45%. If the target is not achieved re-seeding will be undertaken.

4.2.1.5. Drill holes:

(a) Drill hole capping will be undertaken as prescribed in Section 3.2.2.3.

(b) Drill hole subsidence will be monitored for a period of 6 month after permanent capping has been completed.

4.3. Quantum calculations

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases referred to).

Table 24: Environmental Rehabilitation for Closure Quantum Calculation

#	Description	Unit	A	B	C	D	E
			Quantity	Master rate	Multiplication factor	Weighting factor 1	E = A x B x C x D (in ZAR)
1	Dismantling of processing plant(s) and related structures (incl. overland conveyors, power lines, etc.)	m^3		R10.87	1	1.1	R0.00
2(a)	Demolition of steel buildings and structures	m^2		R151.41	1	1.1	R0.00
2(b)	Demolition of reinforced concrete buildings and structures	m^2		R223.13	1	1.1	R0.00
3	Rehabilitation of access roads	m^2	5,000	R27.08	1	1.1	R148 940.00

#	Description	Unit	A	B	C	D	E
			Quantity	Master rate	Multiplication factor	Weighting factor 1	E = A x B x C x D (in ZAR)
4(a)	Demolition and rehabilitation of electrified railway lines	m		R263.09	1	1.1	R0.00
4(b)	Demolition and rehabilitation of non-electrified railway lines	m		R143.45	1	1.1	R0.00
5	Demolition of housing and/or administration facilities	m^2		R302.83	1	1.1	R0.00
6	Opencast rehabilitation including final voids and ramps	ha		R158 747.26	1	0	R0.00
	Backfilling of sample pit	m^3		R5.00	1	1	R0.00
7	Sealing of shafts, adits and inclines	m^3		R81.28	1	1.1	R0.00
8(a)	Rehabilitation of overburden and spoils	ha		R105 831.51			R0.00
8(b)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha		R131 811.23	1	1.1	R0.00
8(c)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha		R382 842.30			R0.00
9	Rehabilitation of subsided areas	ha		R88 617.93			R0.00
10	General surface rehabilitation	ha	0.1	R83 836.41	1	1.1	R9 222.01
10A	Borehole Capping	Sum	5	R2 500.00	1	1.1	R13 750.00
11	River diversions	ha		R83 836.41		1.1	R0.00
12	Fencing	m		R95.62	1	1.1	R0.00
13	Water management	ha		R31 876.96	1	1.1	R0.00
14	2 to 3 years of maintenance and aftercare	ha	0.1	R11 156.92	1	1.1	R1 227.26
15 (a)	Specialist study (specify if required)	Sum					R0.00
15 (b)	Specialist study (specify if required)	Sum					R0.00
Sub Total 1							**R173 139.27**
Preliminary and General (12.5% of Subtotal 1)							R21 642.41
Sub Total 2							**R194 781.67**
Contingency (10% of Subtotal 2)							R19 478.17
Sub Total 3 / Grand Total (ex VAT)							**R214 259.84**
VAT 14%							R29 996.38
GRAND TOTAL (incl VAT)							R244 256.22

4.4. Undertaking to provide financial provision

(Indicate that the required amount will be provided should the right be granted).

The financial provision for rehabilitation will be provided by means of bank guarantees from a reputable financial institution.

5. REGULATION 52(2)(e): Planned monitoring and performance assessment of the environmental management plan.

5.1. List of identified impacts requiring monitoring programmes

As part of the monitoring programme, a grievance mechanism will be established and all potentially affected parties will be identified and notified of the availability of the mechanism.

Monitoring as indicated in Table 25 will be undertaken during the proposed prospecting phases. Additional monitoring activities may be required based on site specific circumstances and / or grievances received from affected parties. Post closure monitoring requirements are outlined in Table 26.

Table 25: Monitoring Requirements

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency	Reporting Requirements
Phase I: Data Acquisition and Desktop Study	N/A	N/A	N/A	N/A	N/A
Phase II: Target Generation and Ground Truthing	Establishing a grievance mechanism and monitoring of noise complaints	Adjacent landowners will be informed of the planned dates of the Airborne geophysics survey and a grievance mechanism will be made available.	Prospecting Manager	Once-off upfront consultation with affected parties As required as grievances are received	1. Consultation to be signed-off by Environmental Management. 2. All grievances to be signed-off by Environmental Management. 3. All corrective action and close out of grievances to be signed-off by Environmental Management. 4. Proof of consultation to be submitted to the Department of Mineral Resources prior to airborne survey is conducted. 5. Record of grievances, corrective action taken and close out to be submitted to the Department of Mineral resources at the end of the project phase.
Phase III: Ground geophysics, Soil Sampling and	All site activities to be undertaken must be	As soon as the extent of site activities are known. These must be communicated with	Prospecting Manager	As required	1. Confirmation of the extent of site activities to be submitted to the

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency	Reporting Requirements
Drilling	communicated with directly affected landowners.	directly affected landowners. The following procedures must developed in conjunction with these landowners: 1. Emergency Preparedness and Response Plan; and 2. Access control procedures and requirements.			Department of Mineral Resources prior to such activities been undertaken. 2. Proof of consultation with directly affected landowners and the outcome of such consultation to be submitted to the Department of Mineral Resources.
Phase III: Scout Drilling and Delineation Drilling	Visual inspection of soil erosion and / or compaction	All exposed areas, access roads, the drill pad and soil stockpiles must be monitored for erosion on a regular basis and specifically after rain events.	Prospecting Manager Contractor	Weekly and after rain events	1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources.
	Dust generated will be assessed through visual observation	If dust outfall is excessive and regarded to affect any sensitive receptors a monitoring programme must be initiated based on the input of a suitably qualified air quality specialist.	Prospecting Manager Contractor	On-going	
	Visual inspection of biodiversity impacts and the occurrence of invader species	Visual inspection of clearing activities and other possible secondary impact on biodiversity will be undertaken. The introduction of alien invasive vegetation species will be determined.	Prospecting Manager Contractor	Once-off during clearing activities Weekly inspection of secondary impacts	
	Visual inspection of pollution incidents, the	All secondary containment structure will be inspected on a regular basis to confirm the	Prospecting Manager Contractor	Daily	

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency	Reporting Requirements
	integrity of secondary containment structures and waste management	integrity thereof and to identify potential leaks. All spill incidents will be identified and corrective action taken in accordance with an established spill response procedure. Waste management practices will be monitored to prevent contamination and littering.			
Reporting: **1.** All monitoring undertaken will be included in a monthly monitoring report **2.** Significant Incidents will be reported immediately					**Incident reporting will be undertaken as required in terms of the relevant legislation including, but not limited to, the:** **(a) Mineral and Petroleum Resources Development Act 28 of 2002; and** **(b) National Water Act 36 of 1998.**

Table 26: Post Closure Monitoring

Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency	Reporting Requirements
Follow up inspections and monitoring of rehabilitation	Inspection of all rehabilitated areas to assess whether any soil erosion is occurring and implement corrective action where required. Confirm that the set target of 45% cover for all re-vegetated areas have been achieved after a period of 6 months and re-seed where required	Prospecting Manager	Monthly for a period of 6 months after rehabilitation activities are concluded	1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and

Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency	Reporting Requirements
	Identify any areas of subsidence around drill holes and undertake additional backfilling if required.			signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources
Reporting: Monthly Corrective Action Report and Final Close-Out Report				**Final impact and risk assessment report for site closure to be submitted to the Department of Mineral Resources for approval.**

5.2. Functional requirements for monitoring programmes

Kindly refer to Table 25

5.3. Roles and responsibilities for the execution of monitoring programmes

Kindly refer to Table 25

5.4. Committed timeframes for monitoring and reporting

Kindly refer to Table 25

6. REGULATION 52 (2) (f): Closure and environmental objectives

6.1. Rehabilitation plan

(Show the areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure)

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, an airborne / ground geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling will be tested by initial drilling.

The location and extent of soil sampling and drill sites can therefore not be determined at this stage.

Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, a typical layout of a drill site (refer Figure 7) has been included to provide an understanding of the potential scale and significance of these activities.

6.2. Closure objectives and their extent of alignment to the pre-mining environment

The rehabilitation plan is developed on the basis that the rehabilitated areas are safe, stable, non-polluting and are able to support a self-sustaining ecosystem similar to surrounding natural environment. To ensure that the rehabilitation plan is aligned with the closure objective, a high level risk assessment of the prospecting components has been undertaken to establish the potential risks associated therewith.

The closure objectives are to:

(a) Eliminate any safety risk associated with drill holes and sumps though adequate drill hole capping and backfilling.

(b) Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;

(c) To establish rehabilitated area which is not subject to soil erosion which may result in the loss of soil, degradation of the environment and cause pollution of surface water resources; and

(d) Restore disturbed area and re-vegetate these areas with grass species naturally occurring in the area to restore the ecological function of such areas as far as is practicable.

6.3. Confirmation of consultation

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

The landowners and stakeholders were afforded the opportunity to review the objectives as included in the Draft Environmental Management Plan. The comment period for the review and comment on the Draft Environmental Management Plan was from the 21st to the 31th of January 2014.

During telephonic communications with the Department of Rural Development and Land Reform, represented by Ms Kele Majila, held on the 27 of January 2014; a concern was raised regarding the impact of prospecting activities on the grazing capacity of the affected land portion. Ms Majila stated that in some instances the Department is leasing the land to private persons and these agreements may be impacted on if prospecting activities result in the loss of grazing land.

No other feedback from stakeholders was received.

7. REGULATION 52(2)(g): Record of the public participation and the results thereof

7.1. Identification of interested and affected parties

(Provide the information referred to in the guideline)

The communities located in close proximity to the site include:

1. Madipelesa: 4.5km towards the south east
2. Shaleng: 9km towards the south east
3. Rietfontein: 6km towards the south east
4. Seoding: 15.5km towards the south east
5. Sekhing: 18km towards the south east
6. Upper Majeakgoro: 17km towards the east
7. Pampierstad: 24km towards the east
8. Motsweding: 22km towards the east

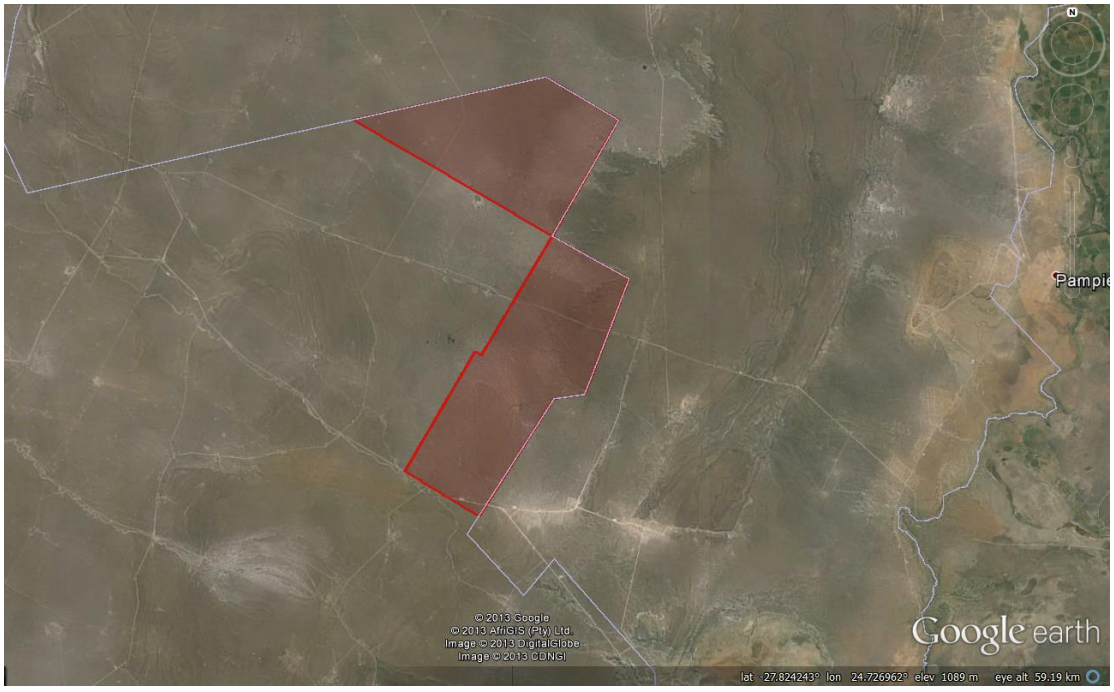


Figure 10: Communities (towns) in close proximity to the proposed prospecting site

These settlements were identified through the use of the 1:50 000 topographical map, aerial imagery and through consultation.

Other interested and affected parties identified include Organs of State who have jurisdiction over or might have an interest in the proposed protecting activities, adjacent and other landowners, non-governmental organisations and other organisations and / private persons. A

list of the stakeholders (interested and affected parties) identified is included in Table 27 below.

Adjacent and non-adjacent landowners were identified through the review of property databases and deed searches, natural person(s) contact databases, and expanded through queries and recommendations made by identified stakeholders and general internet based searches.

The following should be noted as it relates to the stakeholder consultation process and key stakeholder meetings:

a. Key Stakeholder Meetings was conducted with the registered parties (refer to Table 28).

b. Mr Bruce Edward Hunt (directly affected landowner, Farm 21) requested a meeting subsequent to the Key Stakeholder Meeting Schedule being finalised. Unfortunately a meeting could not be held with Mr Hunt during the 11th and 12th of December 2013 due to scheduling challenges. Mr Hunt was requested to indicate a time and date at any time until the end of January 2014 for a key stakeholder meeting. Mr Hunt did not respond to any subsequent requests to meet and / or further discuss the application. Please refer to Addendum F.

c. Due to a miscommunication a meeting was not held with the Department of Rural Development and Land Reform. Further consultation via telephonic discussions and email correspondence were undertaken. Kindly refer to Addendum F.

d. BirdLife SA has been identified a s a key stakeholder due to study area's relative close proximity to the Spitskop Dam which is regarded as an Important Bird Area. BirdLife SA declined the invitation to being consulted.

e. The contact person for the Swanepoel Trust (adjacent landowner) could not be identified.

f. The landowners of the farms Hoekplaats 1040 (adjacent landowner) and Driefontein 1056 (adjacent landowner) are still unknown. These landowners could not be identified.

g. Additional stakeholder have been identified including:

   (i) Ms Linda de Klerk (Director Mon Desire Family Trust and Vaalbosvlakte Family Trust;

   (ii) Ms Wilma Bester (Director Mon Desire Family Trust and Vaalbosvlakte Family Trust), and

   (iii) Mr Japie Smit (De Kuile Farmers Association).

   Ms de Klerk and Bester were provided with the Draft Environmental Management Plan for review and comment.

h. The South African Heritage Resource Agency has been informed of the stakeholder consultation process by means of their online submission system. Their response is attached as Addendum B.

Table 27: Identified Stakeholders

Organisation	*Contact Person*	*Relation*	*Farm*	*Owner*
Frances Baard District Municipality	Mr Kenneth Lucas	Affected District Municipality	N/A	N/A
	Ms Mamikie Bogatsu Contact: Segametsi Mocumi(PA) Contact: Natasha April		N/A	N/A
	Mr Frank Mdee (Head of Department) Contact: Cathy Hoffmann (Secretary)		N/A	N/A
Dikgatlong Local Municipality	Mr Robertson	Affected Local Municipality	N/A	N/A
Dikgatlong Ward 6	Mr Kagisho Rifles	Affected Ward	N/A	N/A
Magareng Local Municipality	Mr JTS Leeuw Correspond: Tshego Moshane	Adjacent Municipality	N/A	N/A
Magareng Ward 5	Mr Willem Johannes Potgieter	Adjacent Affected Ward	N/A	N/A
Phokwane Local Municipality	Mr MP Dichaba	Adjacent Municipality	N/A	N/A
	Mr George De Villiers	Adjacent Municipality	N/A	N/A
Phokwane Ward 6	Mr Petro Johan Nel	Adjacent Affected Ward	N/A	N/A
Greater Taung Local Municipality	The Municipal Manager	Adjacent Municipality	N/A	N/A
Northern Cape Department of Water Affairs	Mr A Abrahams	Affected Provincial Department	N/A	N/A
	Ms Nosie Mazwi	Affected Provincial Department	N/A	N/A
Northern Cape Department of Environment and Nature Conservation	Mr Thato Molese	Affected Provincial Department	N/A	N/A
Northern Cape Department of Labour	TBD	Affected Provincial Department	N/A	N/A
Northern Cape Department of Rural Development and Land Reform	Mr Ryan Oliver	Affected Provincial Department	N/A	N/A
Northern Cape Department of Agriculture	Dr. Phemelo Kegakilwe Acting Chief Director - Northern Cape - Kimberley	Affected Provincial Department	N/A	N/A

Organisation	*Contact Person*	*Relation*	*Farm*	*Owner*
Northern Cape - South African Heritage Resources Agency	Ms Kathryn Smuts	Affected Agency	N/A	N/A
Company	Mattheus JF van den Berg	Directly affected landowner	Farm No. 13 Ptn 0	ANNASPAN PTY LTD
Company	Gerri Te Baerts	Directly affected landowner	Kookfontein No. 31 Ptn 1	MONTCORNA PTY LTD
Private	Katlego Gaoraelwe	Directly affected landowner	Farm No. 12 Ptn 2	GAORAELWE KATLEGO
Private	Bruce Edward Hunt	Directly affected landowner	Farm No. 21	HUNT BRUCE EDWARD
Private	Johannes Daniel Van Romburgh	Adjacent land owner	Olienboom 1067	ROMBURGH JOHANNES DANIEL VAN
Private	Jan Abraham Jordaan	Adjacent land owner	Vaalbult 922 Ptn 0	JORDAAN JAN ABRAHAM & JORDAAN ANNA JOHANNA
Private	Anna Johanna Jordaan			
Private	Francois Johannes Wessels	Adjacent landowner	Van Wys Fontein 50 Ptn 1	WESSELS FRANCOIS JOHANNES
Private	Bruce Edward Hunt	Adjacent land owner	Farm No. 20	HUNT BRUCE EDWARD
Private	Stephanus Johannes Boschoff	Adjacent land owner	Farm No. 19 Ptn 0	BOSHOFF STEPHANUS JOHANNES
Private			Farm No. 19 Ptn 2	BOSHOFF STEPHANUS JOHANNES
Private	Roelof Alwyn Jooste	Adjacent landowner	Farm No. 18	JOOSTE ROELOF ALWYN
Private	Christina Catharina Stander (Represented by At Stander)	Directly affected and adjacent landowner	Farm No. 14	CHRISTINA CATHARINA STANDER
Private			Farm No. 17 Ptn 0	STANDER CHRISTINA CATHARINA
Private	Barend JJ van den Berg	Adjacent land owner	Nooitgedacht 920 Ptn 4	BERG BAREND JACOBUS JOHANNES VAN DEN
Trust	Mattheus JF van den Berg on behalf of Vaalbosvlakte Family Trust	Directly affected landowner	Farm No. 13 Ptn 1	VAALBOSVLAKTE FAMILIETRUST
Trust	Mattheus JF van den Berg on behalf of Mon Desir Family Trust	Directly affected landowner	Farm No. 12 Ptn 0	MON DESIR FAMILIETRUST
Trust	Mattheus JF van den Berg on behalf of Mon Desir Family Trust	Directly affected landowner	Farm No. 12 Ptn 1	MON DESIR FAMILIETRUST
Trust	Mattheus JF van den Berg on behalf of Vaalbosvlakte Family Trust	Directly affected landowner	Farm No. 12 Ptn 3	VAALBOSVLAKTE FAMILIETRUST
Trust	Mattheus JF van den Berg on behalf of Vaalbosvlakte Family Trust	Directly affected landowner	Farm No. 12 Ptn 4	VAALBOSVLAKTE FAMILIETRUST
Trust	Mattheus JF van den Berg on behalf of Vaalbosvlakte Family Trust	Directly affected landowner	Vaalbult 922 Ptn 2	VAALBOSVLAKTE FAMILIETRUST
Trust	TBD	Adjacent landowner	Van Wys Fontein 50 Ptn 3	SWANEPOEL TRUST

Organisation	*Contact Person*	*Relation*	*Farm*	*Owner*
Unknown	TBD	Adjacent landowner	Hoekplaats 1040	No information available
Unknown	TBD	Adjacent landowner	Driefontein 1056	No information available
State/community	Ms Kele Majila	Directly affected landowner	Vaalboschfontein No. 11 Ptn 0	NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA
State/community		Directly affected landowner	Kookfontein No. 31 Ptn 0	SUID-AFRIKAANSE BANTOETRUST
State/community		Adjacent land owner	Vaalboschhoek 1046 Ptn 2	REPUBLIC OF BOPHUTHATSWANA
State/community		Adjacent land owner	Vaalboschhoek 1046 Ptn 5	REPUBLIC OF BOPHUTHATSWANA
State/community		Adjacent land owner	Farm 1048	REPUBLIC OF BOPHUTHATSWANA
State/community		Adjacent land owner	Chosen Farm 1049 Ptn 2	NATIONAL GOVERNMENT OF THE REPUBLIC OF SOUTH AFRICA
State/community		Adjacent land owner	Farm 1055 Ptn 3	SOUTH AFRICAN BANTU TRUST
State/community		Adjacent land owner	Nooitegedacht No. 32 Ptn 0	SUID-AFRIKAANSE BANTOETRUST
State/community		Adjacent land owner	Nooitegedacht No. 32 Ptn 1	SUID-AFRIKAANSE BANTOETRUST
State/community		Adjacent land owner	Nooitegedacht No. 32 Ptn 4	SUID-AFRIKAANSE BANTOETRUST
State/community		Adjacent land owner	Van Wys Fontein 50 Ptn 2	FRANCES BAARD DISTRIKSMUNISIPALITEIT
Agri Northern Cape	Mr P.J.J. van Rensburg	Agriculture	N/A	N/A
BirdLife SA	CEO	NGO	N/A	N/A

Table 28: Registered Stakeholders

Organisation	*Contact Person*	*Relation*
Dikgatlong Ward 6	Mr Kagisho Rifles	Affected Ward
Magareng Ward 5	Mr Willem Johannes Potgieter	Adjacent Affected Ward
Northern Cape - South African Heritage Resources Agency	Ms Kathryn Smuts	Affected Agency
Company / Private	Mattheus JF van den Berg (JF van den Berg on behalf of Vaalbosvlakte Family Trust and Mon Desir Family Trust as well as Barend JJ van den Berg)	Directly affected and adjacent landowner
Company	Gerri Te Baerts	Directly affected landowner
Private	Katlego Gaoraelwe	Directly affected landowner
Private	Bruce Edward Hunt	Directly affected and adjacent landowner
Private	Francois Johannes Wessels	Adjacent landowner
Private	Christina Catharina Stander (Represented by At Stander)	Directly affected and adjacent landowner
Private		
State/community	Ms Kele Majila	Directly affected and adjacent landowner

7.2. The details of the engagement process

Table 29 provides a detailed account of the activities and the associated timeframes of the stakeholder consultation process.

Table 29: Details of the Stakeholder Engagement Process

Action	On or Before	Comment
Request for registration as a stakeholder and / or to attend a stakeholder meeting	6 December 2013	While care has been taken to identify all affected parties and interested stakeholders, all parties where requested to identify any additional persons they feel may be interested and / or affected by the proposed prospecting activities.
Stakeholder Meetings	11 and 12 December 2013	Key stakeholder meetings were held with a all registered parties.
Submit comments and concerns	16 December 2013	All comments and concerns submitted were accepted, responded to and included in the Report on Results of Consultation.
Report on Results of Consultation submitted to the Department	19 December 2013	N/A
Review of Environmental Management Plan	21 to 31 January 2014	All registered stakeholders were afforded the opportunity to review and comment on the Draft Environmental Management Plan.

7.2.1. Description of the information provided to the community, landowners, and interested and affected parties.

The following documents were made available for comment:

(a) A background information document which provided stakeholders with an overview of the proposed prospecting activities, the objectives and details of the stakeholder consultation process (attached as Addendum C).

(b) An overview of the baseline socio-economic and environmental conditions report was distributed and stakeholders were requested to provide further information and feedback on the information contained therein (attached as Addendum D).

(c) Minutes of the meetings held including the impacts identified by stakeholders (refer to Addendum E).

(d) A copy of the Draft Environmental Management Plan was made available for review and comment. Kindly refer to Addendum F for proof of notification of the availability of the draft report.

7.2.2. List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.

Identified stakeholder were informed and provided with a Background Information Document, the Overview of the Socio-Economic and Environmental Conditions Report and the Draft Environmental Management Plan. A limited number of stakeholders chose to participate in the process. Parties not consulted include:

a. Unknown: The contact person for the Swanepoel Trust (adjacent landowner) could not be identified.

b. Unknown: The landowners of the farms Hoekplaats 1040 (adjacent landowner) and Driefontein 1056 (adjacent landowner) are still unknown. These landowners could not be identified.

7.2.3. List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

All comments received are included in Table 30 and Table 31 below.

Table 30: List of comments received from Stakeholder during Key Stakeholder Meetings

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
Mr Mattheus JF van den Berg	11 December 2013 @ 9h00 – 12h00 @ Reivilo	Directly Affected and Adjacent Landowner 1. Farm No. 12 Ptn 0 - Mon Desir Familietrust 2. Farm No. 12 Ptn 1 - Mon Desir Familietrust 3. Farm No. 12 Ptn 3 - Vaalbosvlakte Familietrust 4. Farm No. 12 Ptn 4 - Vaalbosvlakte Familietrust 5. Farm No. 13 Ptn 0 - Annaspan Pty Ltd 6. Farm No. 13 Ptn 1 - Vaalbosvlakte Familietrust 7. Nooitgedacht 920 Ptn 4	***Meeting with Mr Francois and Mr Frans van den Berg***	
			The following concerns were raised:	
			1. Veld fires may be caused by on-site prospecting activities. Farmers have a legal responsibility and liability to prevent and control fires. Fire risk of prospecting activities must be determined and the appropriate mitigation strategies developed in consultation with land owners and / or occupiers.	The environmental management plan will be developed to include prevention and emergency preparedness and response plans to address the risk.
			2. Prospecting activities may result in the influx of unemployed persons into the area. Such unemployed persons may regard to on-site activities as an opportunity to seek casual employment and incidents of crime (theft) may increase as a result. Management measures must be proposed.	Management measures will be included in the environmental management plan.
			3. Access control during on-site prospecting activities is regard as a risk if not managed appropriately. Gates between camps (established for grazing	These risks and impact will be included in the environmental management plan. Access control measures will be proposed.

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			and breeding programmes) may be left open and / or close when the gates should remain open. Access control measures, management and requirements for effective communication processes between the land owner and the prospecting staff must be developed.	
			The following requests were made:	
			1. That the final prospecting works programme (once drill sites have been determined) must be presented to the land owner / occupier and management measures as it relates to the above-mentioned concerns discussed and agreed on.	The environmental management plan will be made available for review and comment during January 2014. Additionally, based on the identification of drill and / sampling sites, a requirement for additional consultation will be included in the environmental management plan.
			2. Farms owners should be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pans resulting in injury of animals or damage.	This requirement will be included in the environmental management plan.
			The following additional comments and site observations regarding the state of the environment were made:	

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			1. Numerous pans exist on the property and only hold water during extreme rainfall events. 2. The borehole depth on Farm 13 is estimated to be approximately 8m.	Noted
			The following additional stakeholder have been identified:	
			1. Ms Linda de Klerk 2. Ms Wilma Bester	Noted
Mr Gaoraelwe Katlego	11 December 2013 @ 13h00 – 14h00 @ Farm 12 Ptn 2	Mr Katlego Gaoraelwe	***Mr Gaoraelwe was not available for the meeting. A site visit was done with Mr Sparks (Foreman and Driver). Telephonic communications on the 13th of December 2013 served to identify issues and concerns.***	
			The following concerns were raised:	
			1. Based on the feedback provided on comments made by Mr Francois and Mr Frans van den Berg, Mr Gaoraelwe indicated his agreement with the concerns raised.	Noted
			2. Any potential impacts on water quality and availability must be clearly described in the environmental management plan. Monitoring and management measures must be developed to mitigate such impacts.	All anticipated impacts on water resources will be identified and included in the environmental management plan. Monitoring and management measures will be developed to mitigate such impacts.
			The following requests were made:	

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			1. That the final prospecting works programme (once drill sites have been determined) must be presented to the land owner / occupier and management measures as it relates to the above-mentioned concerns discussed and agreed on.	The environmental management plan will be made available for review and comment during January 2014. Additionally, based on the identification of drill and / sampling sites, a requirement for additional consultation will be included in the environmental management plan.
			2. Farms owners should be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens resulting in injury of damage.	This requirement will be included in the environmental management plan.
			The following additional comments and site observations regarding the state of the environment were made:	
			1. Numerous old rock kraals were noted to occur on the farm, these may be regarded as heritage features.	Additional studies regarding the potential impact will be undertaken
			The following additional stakeholder have been identified:	
			1. None	N/A
Mr Gerardus Peter Jacobus te Baerts	11 December 2013 @ 15h30 – 16h30 @ Vryburg	Directly Affected Landowner 1. Kookfontein No. 31 Ptn 1 - Montcorna Pty Ltd	***Meeting with Mr te Baerts***	
			The following concerns were raised:	
			1. None	N/A
			The following requests were made:	
			1. None	N/A

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			The following additional comments and site observations regarding the state of the environment were made:	
			1. Reportedly a kimberlite pipe was previously identified to affect the property	Noted
			The following additional stakeholder have been identified:	
			1. None	N/A
Mr Francois Johannes Wessels	12 December 2013 @ 8h00 – 9h00 @ Hartswater	Mr Francois Johannes Wessels	***Meeting with Mr and Mrs Wessels***	
			The following concerns were raised:	
			1. Roads may further be negatively impacted on by vehicle movement during prospecting activities. Roads are already in a degraded state.	As part of the development of the environmental management plan, the impact on roads infrastructure will be assessed, impact will be identified and management measures developed as it relates to road infrastructure. The environmental management plan and this plan will be made available for review during January 2014.
			2. The extent of rehabilitation must be determined, rehabilitation activities must be described and guarantees be provided that rehabilitation will be undertaken to restore disturbed sites.	A rehabilitation plan will be developed as part of the environmental management plan and this plan will be made available for review during January 2014.

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			3. Water availability is a significant concern. The high dependency of the framers on groundwater resources to continue with cattle farming cannot be overstated.	All anticipated impacts on water resources will be identified and included in the environmental management plan. Monitoring and management measures will be developed to mitigate such impacts.
			4. Mining is not regarded necessarily as a compatible land use.	Noted.
			5. Increased movement of people and influx of job seekers may result in increased crime and cattle theft.	The impact and proposed mitigation measures will be included in the environmental management plan.
			6. In the event that mine right is applied for, electricity demand and source must be well understood and provided for.	Noted.
			7. The impact on persons leasing land from state property (directly affected by the proposed prospecting and future mining activities) must be determined. Many of these persons are unemployed and dependent on small herds of cattle grazing on the land. The relocation of such persons will result in negative socio-economic	No persons will be required to relocate during the execution of the prospecting activities. Additional consultation with the state will be conducted to determine the current extent of and leased and the potential impacts on lessees.

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			impact of high significance.	
			The following requests were made:	
			1. A consolidated map showing ALL planned prospecting activities in the region should be compiled and distributed to all stakeholders. This will enable stakeholders to fully understand the potential cumulative impacts.	This request has been submitted to Petra Diamonds and all parties will be informed whether this information can be made available.
			The following additional comments and site observations regarding the state of the environment were made:	
			1. The description of the availability of water included in the Desktop Baseline Socio Economic and Environmental Report must be expanded to state that water is availability is severely restricted.	The environmental management plan will be amended to include this comment.
			2. The reference to crop cultivation (Section 3.2.3 Desktop Baseline Socio Economic and Environmental Report) is regarded to be irrelevant to the study.	The environmental management plan will be amended to include this comment.

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			3. The reference to grazing capacity (Section 3.2.3 Desktop Baseline Socio Economic and Environmental Report) must be expanded. The statement included in the report gives the impression that the low gazing capacity signifies that cattle farming is not a viable land-use. This impression is incorrect.	The environmental management plan will be amended to include this comment.
			The following additional stakeholder have been identified:	
			1. Mr Japie Smit (De Kuile Farmers Association)	Noted.
Mr Willem Johannes Potgieter	12 December 2013 @ 10h00 – 11h00 @Warrenton	Magareng Ward 5 – Ward Councillor	***Meeting with Mr Potgieter***	
			The following concerns were raised:	
			1. All stakeholders should be informed of their rights and in terms of the applicable legislation and the process which will be followed.	The enquiry has been forwarded to Petra Diamonds and all parties will be informed regarding the process.
			The following requests were made:	
			1. None	N/A
			The following additional comments and site observations regarding the state of the environment were made:	
			1. A water study currently undertaken by Aurecon could potentially provide additional information regarding water resources	Noted.

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
			in the region.	
			The following additional stakeholder have been identified:	
			2. None	N/A
Ms Kele Majila (Department of Rural Development and Land Reform)	12 December 2013 @ 12h00 – 13h00 @ Kimberley	Directly Affected and Adjacent Landowner 1. Vaalboschfontein No. 11 Ptn 0 2. Kookfontein No. 31 Ptn 0 3. Vaalboschhoek 1046 Ptn 2 4. Vaalboschhoek 1046 Ptn 5 5. Farm 1048 6. Chosen Farm 1049 Ptn 2 7. Farm 1055 Ptn 3 8. Nooitegedacht No. 32 Ptn 0 9. Nooitegedacht No. 32 Ptn 1 10. Nooitegedacht No. 32 Ptn 4	***Due to a miscommunication the meeting was not held. It is suggested that a meeting be scheduled in January 2014.***	
Mr At Stander	12 December 2013 @ 15h30 – 16h30 @	Directly Affected and Adjacent Landowner	***Meeting with Mr Stander***	
			The following concerns were raised:	

Registered Stakeholder	Meeting date, time and location	Designation	Comments	Responses
	Petrusburg	1. Farm No. 14 2. Farm No. 17 Ptn 0	1. Mr Stander is currently leasing all owned land to the van den Berg Family and agrees with the comments, issues and concerns raised. 2. The income from leased land serves as a retirement provision for Ms CC Stander. Any loss in this income is unacceptable. 3. Any prospecting activities on Farm 14 will have a severe negative impact due to the small property size.	Noted
			The following requests were made:	
			1. None	N/A
			The following additional comments and site observations regarding the state of the environment were made:	
			1. None	N/A
			The following additional stakeholder have been identified:	
			1. None	N/A

Table 31: List of comments received from Stakeholder based on the review of the Draft Environmental Management Plan

Registered Stakeholder	Date and method of comments received	Designation	Comments	Responses
Ms Kele Majila (Department of Rural Development and Land Reform)	27 January 2014 Telephonic communication	Representing the Department of Department of Rural Development and Land Reform as directly affected landowner	During telephonic communications with the Department of Rural Development and Land Reform, represented my Ms Kele Majila, held on the 27 of January 2014; a concern was raised regarding the impact of prospecting activities on the grazing capacity of the affected land portion. Ms Majila stated that in some instances the Department is leasing the land to private persons and these agreements may be impacted on if prospecting activities result in the loss of grazing land.	The extent of land transformation expected from prospecting activities is limited and not expected to impact on grazing capacity. Disturbances that do occur must be rehabilitated in accordance with the stated objectives, including: 1. To establish rehabilitated area which is not subject to soil erosion which may result in the loss of soil, degradation of the environment and cause pollution of surface water resources; and 2. Restore disturbed area and re-vegetate these areas with grass species naturally occurring in the area to restore the ecological function of such areas as far as is practicable.

7.2.4. List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation

Kindly refer to Table 30 and Table 31.

7.2.5. Other concerns raised by the aforesaid parties

Kindly refer to Table 30 and Table 31.

7.2.6. Confirmation that minutes and records of the consultations are appended

Refer to Addendum E & F

7.2.7. Information regarding objections received

Kindly refer to Table 30 and Table 31.

7.3. The manner in which the issues raised were addressed

Kindly refer to Table 30 and Table 31.

8. SECTION 39(3)(c) of the Act: Environmental awareness plan

8.1. Employee communication process

(Describe how the applicant intends to inform his or her employees of any environmental risk which may result from their work).

An Environmental Awareness and Risk Assessment Schedule have been developed and is outline in Table 32. The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re-enforced.

Table 32: Environmental Training and Awareness Schedule

Frequency	Time allocation	Objective
Induction (all staff and workers)	1 hour training on environmental awareness training as part of site induction	1. Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety and community aspects. 2. Establish a basic knowledge of the environmental legal framework and consequences of non-compliance. 3. Clarify the content and required actions for the implementation of the Environmental Management Plan. 4. Confirm the spatial extent of areas regarded as sensitive and clarify restrictions. 5. Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents.
Monthly Awareness Talks (all staff and workers)	30 minute awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and

Frequency	Time allocation	Objective
		measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	Daily task based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily tool box talks.

8.2. Description of solutions to risks

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment)

As prescribed in Table 32, Task / Issue Based Risk Assessments must be undertaken with all worker involved in the specific task in order to establish an understanding of the risks associated with a specific task and the required mitigation and management measures.

8.3. Environmental awareness training

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

8.3.1. Environmental Awareness Training Content – Induction Training

The following environmental awareness training will be provided to all staff and workers who will be involved in prospecting activities.

8.3.1.1. Overview of the applicable Environmental, Health, Safety and Community Legal Framework

- Description of the approved prospecting activities and content of the prospecting right;
- An overview of the applicable legislation and regulations as it relates to environmental, health, safety and community including (but not limited to):
  - General Environmental Legal Principles and Requirements
  - Air Quality Management
  - Water and Wastewater Management
  - Hazardous Substances
  - Non-Mining-Related Waste Management
  - The Appropriate Remediation Strategies & Deteriorated Water Resources
  - Biodiversity
  - Weeds and Invader Plants
  - Rehabilitation
  - Contractors and Tenants
  - Energy & Conservation
  - Heritage Resources
  - General Health and Safety Matters
  - Basic Conditions of Employment
  - Compensation for Occupational Injuries and Diseases
  - General Mine Health and Safety Matters
  - Smoking in the Workplace

- Noise & Hearing Conservation
- Handling, Storage and use of Hazardous Substances
- Weapons and Firearms

8.3.1.2. Content and implementation of the approved Environmental Management Plan

- Allocated responsibilities and functions
- Management and Mitigation Measures
- Identification of risks and requirements adaptation

8.3.1.3. Sensitive environments and features

- Description of environmentally sensitive areas and features
- Prohibitions as it relates to activities in or in proximity to such areas

8.3.1.4. Emergency Situations and Remediation

- Methodology for the identify areas where accidents and emergency situations may occur, communities and individuals that may be impacted
- An overview of the response procedures,
- Equipment and resources
- Designate of responsibilities
- Communication, including communication with potentially Affected Communities
- Training schedule to ensure effective response.

9. SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.

9.1. The annual amount required to manage and rehabilitate the environment

(Provide a detailed explanation as to how the amount was derived)

A total estimated amount of **R 263,640.00** has been calculated for the implementation of the Environmental Management Plan over the 5 year planned prospecting programme. The detailed costing is included in Table 33. The table highlights any assumptions and notes regarding the calculations.

It should be noted that only mitigation and management measures that is to which a capital cost can be attached is included in the aforementioned calculation. Costs related to the appointment and / or training of an Environmental Management Officer, who will oversee the implementation of the Environmental Management Plan is not included in the costing.

Table 33: Calculation of annual amount required for the implementation of the Environmental Management Plan

Aspect and Impact	Phase	Management and Mitigation Measures	Assumptions and costing notes	Period	Area (m^2)	Rate per m^2	Operational Cost			Total
							Initial Costs	Monthly Costs	No of Months	
Stakeholder Consultation regarding noise impact	Phase II: Airborne geophysics survey	Adjacent landowners will be informed of the planned dates of the Airborne geophysics survey and a grievance mechanism will be made available Mitigation alternatives are limited to timing of the flyovers.	**Assumptions:** Use of external facilitator **Costing notes:** One day initial consultation Two hours consulting time during week to receive and manage feedback and grievances	Year 2: Initial cost and management over 1 week	N/A	N/A	R 8 000.00	R 8 000.00	0.25	R 10 000.00
Site Clearing	Phase III: Scout and Delineation Drilling	Raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided	**Assumptions:** Raised blade will be undertaken for all drill pads Five drill sites (area will be identified and developed in accordance with the typical drill pad layout Access roads to drill sites will be via the existing roads and tracks.	Year 3: 3 x Drill pads	337.5	17	R 5 737.50	R 1 000.00	12	R 12 000.00
				Year 4: 2 x Drill Pads	225	17	R 3 825.00	R 800.00	12	R 9 600.00
Fire protection	Phase III: Scout and Delineation Drilling	An fire emergency procedure will be developed to contain and minimise the destruction of	Five drill sites will be identified and developed in accordance with the typical drill pad layout.	Year 3: 3 x Drill pads	N/A	N/A	R 32 000.00	R 1 000.00	12	R 44 000.00

Aspect and Impact	Phase	Management and Mitigation Measures	Assumptions and costing notes	Period	Area (m^2)	Rate per m^2	Operational Cost			Total
							Initial Costs	Monthly Costs	No of Months	
	Phase III: Scout and Delineation Drilling	flora and faunal habitat which may result from fire	**Costing notes:** Drill pad area of 112.5m^2	Year 4: 2 x Drill Pads	N/A	N/A		R 1 000.00	12	R 12 000.00
Wet dust suppression	Phase III: Scout and Delineation Drilling	Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources	**Assumptions:** Only wet suppression would be required **Costing notes:** Rate per km not m^2 Assuming a distance of road wet suppression of 20km Initial cost for water car not included	Year 3: 3 x Drill pads and roads	1320	3	N/A	R 3 960.00	12	R 47 520.00
				Year 4: 2 x Drill Pads and roads	1320	3	N/A	R 3 960.00	12	R 47 520.00
Spill control	Phase III: Scout and Delineation Drilling	In the event that vehicle maintenance is undertaken on-site, drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil	**Assumptions:** None **Costing notes:** Drill sites: 3 spill kits per site and one replacement kit per month	Year 3: 3 x Drill pads and roads	N/A	N/A	R 6 000.00	R 2 000.00	12	R 30 000.00
				Year 4: 2 x Drill Pads and roads	N/A	N/A	R 6 000.00	R 2 000.00	12	R 30 000.00

Aspect and Impact	Phase	Management and Mitigation Measures	Assumptions and costing notes	Period	Area (m^2)	Rate per m^2	Operational Cost			Total
							Initial Costs	Monthly Costs	No of Months	
Waste management	Phase III: Scout and Delineation Drilling	Waste bins (waste separation at source) Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight	**Assumptions:** Five drill sites will be identified and developed in accordance with the typical drill pad layout. **Costing notes:** Waste receptacles will be moved to sites closed to new active sites	Year 3-5	N/A	N/A	R 6 000.00	N/A	N/A	R 6 000.00
Waste Disposal	Phase III: Scout and Delineation Drilling	Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to an licensed recycling facility	Not priced depending service provider and landfill sites charges	Year 3-5	N/A	N/A	N/A	N/A	N/A	N/A
Drill hole plugs (temporary)	Phase III: Scout and Delineation Drilling	Drill holes must be temporarily plugged immediately after drilling is completed and remain plugged until they are permanently plugged below ground to eliminate the risk posed to fauna by open drill holes	**Assumptions:** Five drill sites will be identified and developed in accordance with the typical drill pad layout. **Costing notes:** Permanent plugs to be allowed for as part of closure (general site rehabilitation)	Year 3-5	N/A	N/A	R 5 000.00	N/A	N/A	R 5 000.00

Aspect and Impact	Phase	Management and Mitigation Measures	Assumptions and costing notes	Period	Area (m^2)	Rate per m^2	Operational Cost			Total
							Initial Costs	Monthly Costs	No of Months	
Erosion Control	Phase III: Scout and Delineation Drilling	Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles	**Assumption:** In the event that raised blade clearing is undertaken, no topsoil stockpiles will be undertaken. **Costing note:** Lump sum estimate	Year 3-5	N/A	N/A	N/A	N/A	N/A	R 10 000.00

9.2. Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required

The amount calculated for the implementation of the Environmental Management Plan as it relates to the mitigation and management measures, as well as the required monitoring programmes will be included in the financial model developed for the prospecting activities (as part of the prospecting work programme).

10. REGULATION 52 (2) (h): Undertaking to execute the environmental management plan

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.	
Full Names and Surname	Clive Fanti
Identity Number	7701085712087