Farms 87 and 88 Barkly West – Draft Environmental Management Plan for Prospecting for Stakeholder Review

Prepared By:

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Registration Number: 2013/020535/07

27 September 2013

Draft Environmental Management Plan in the application for a Prospecting Right

Farms 87 and 88, Barkly West

Applicant: Finsch Diamond Mine (Pty) Ltd (owned by Petra Diamonds)

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

27 September 2013

Table of Changes – Final Environmental Management Plan (TO BE COMPLETED BASED ON STAKEHOLDER FEEDBACK)			
Motivation for Revision		**STAKEHOLDER FEEDBACK BASED ON THE REVIEW OF THE F=DRAFT ENVIRONMENTAL MANAGEMENT PLAN**	
Summary of Changes			
#	**Area of change**	**Description**	**Comment**
1.			

Introduction

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 24th of July 2013.

As part of this application this Draft Environmental Management Plan has been developed in accordance with the requirements of the Mineral and Petroleum Resources Development Act of 28 of 2002 as well as the DMR's published guideline and templates. .

A stakeholder engagement process has been initiated in terms of the abovementioned and the applicable guideline documents and templates, and is on-going. The publication of this Draft Environmental Management Plan for review and comment by stakeholders is part of aforementioned stakeholder engagement process.

The final Environmental Management Plan is due for submission to the DMR on or before the 13th of October 2013.

We would like to thank all stakeholders for their inputs into this report which informed the Draft Environmental Management Plan, the baseline environmental conditions, the impacts identified and the development of the mitigation and management measures.

Stakeholders are invited to review this report and provide further comments and inputs and / or raise any concerns regarding the effective management of the identified environmental impact.

The comment period will close on the 10th of October 2013.

Summary of the Draft Environmental Management Plan

Planned prospecting is proposed to undertaken in three phases:

- Phase I: Desktop assessment;
- Phase II: Aerial survey and possible diamond drilling; and
- Phase III: Bulk sampling.

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. drilling and bulk sampling) is therefore not yet known. The Draft 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 environmental conditions and potential impacts were highlighted by stakeholders including:

1. The poor water quality in the Harts River which imposes limitation of the use of the water resource for crop irrigation as well as impacts on ecological habitat quality. The potential direct and cumulative impacts of the planned prospecting activities have thus been highlighted and these concerns resulted in a high impacts significance rating being awarded to water quality impacts. Extensive mitigation and management measures for these impacts have been proposed.
2. The Important Bird Area associated with the Spitskop Dam (located directly to the south-east of the farms where prospecting is proposed) and the impacts of activities on avifauna (birds) and the habitat they rely on. Based on the feedback received in this regard, it is recommended in the Draft Environmental Management Plan that additional ecological and avifaunal assessments must be undertaken in the event that ground activities is proposed to be undertaken within or in close proximity (100m) for the identified area.
3. A number of landowners highlighted their concerns with regard to the potential influx of job seekers once site activities starts. These employed persons are perceived to have an incentive (unemployment and poverty) to engage in criminal activities (i.e. theft) which will affect adjacent landowners. Mitigation measures in this regard have been specifically included in the management plan.
4. The potential visual impacts of project activities may affect the general sense of place of the area and may impact on visually sensitive surrounding land uses such as game farms where visitors value the undisturbed / untransformed characteristics of the general region. Specific mitigation measures for the potential impact have been included. The short duration of and limited extent of site activities resulted in a relatively low impact significance rating, though the concerns are not regarded to be important.

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 Draft Environmental Management Plan and can be reviewed and further commented on by stakeholders.

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 525 160.00 (excluding VAT) and a closure cost of R 481,234.19 (including contingencies and VAT) has been allocated.

Additionally, a full record of the consultation process undertaken to date has been provided and stakeholder are invited to confirm that their issues and concerns are correctly recorded and adequately addressed.

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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

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
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Fax no	011 706 3071
Cellular no	083 779 5573
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Postal address	Post Office Box 71007, Bryanston, 2021

ITEM	CONSULTANT CONTACT DETAILS (If applicable)
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E-mail address	lizellepro@gmail.com
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	**Farms 87 and 88, Barkly West**

The farms where prospecting will take place are located towards the north-west of the Spitskop Dam, north of the Harts River (refer to Figure 1 and Figure 2). The planned prospecting area (Farms 87 and 88) is approximately 7,366ha in extent, and is situated approximately 70Km south-east of Reivilo and approximately 80km north-west of Kimberly.

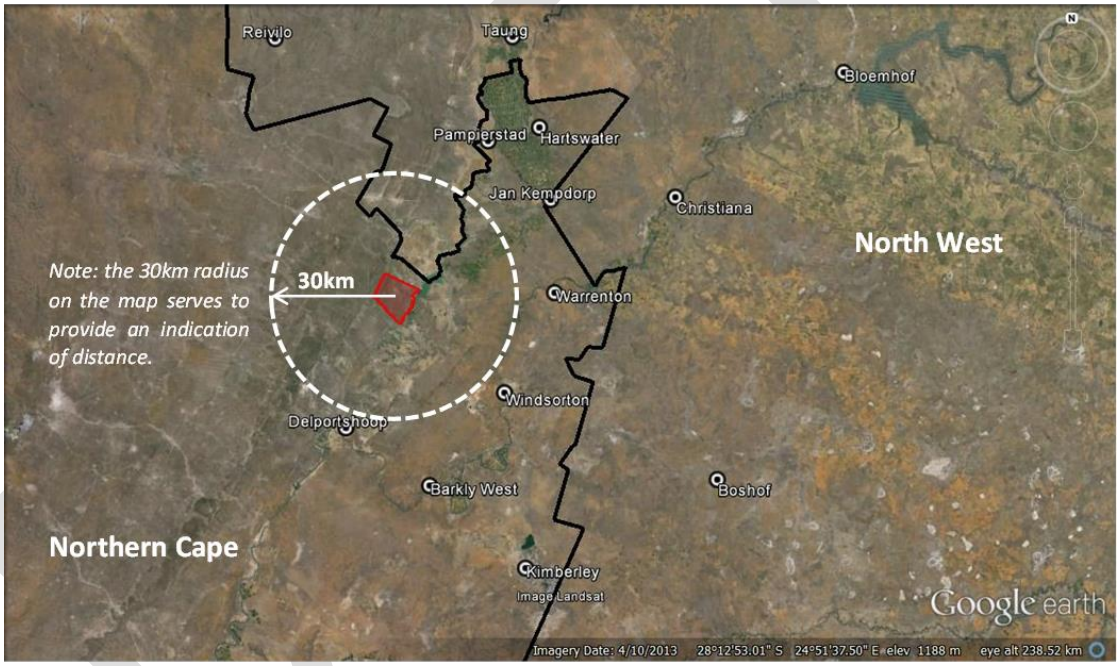
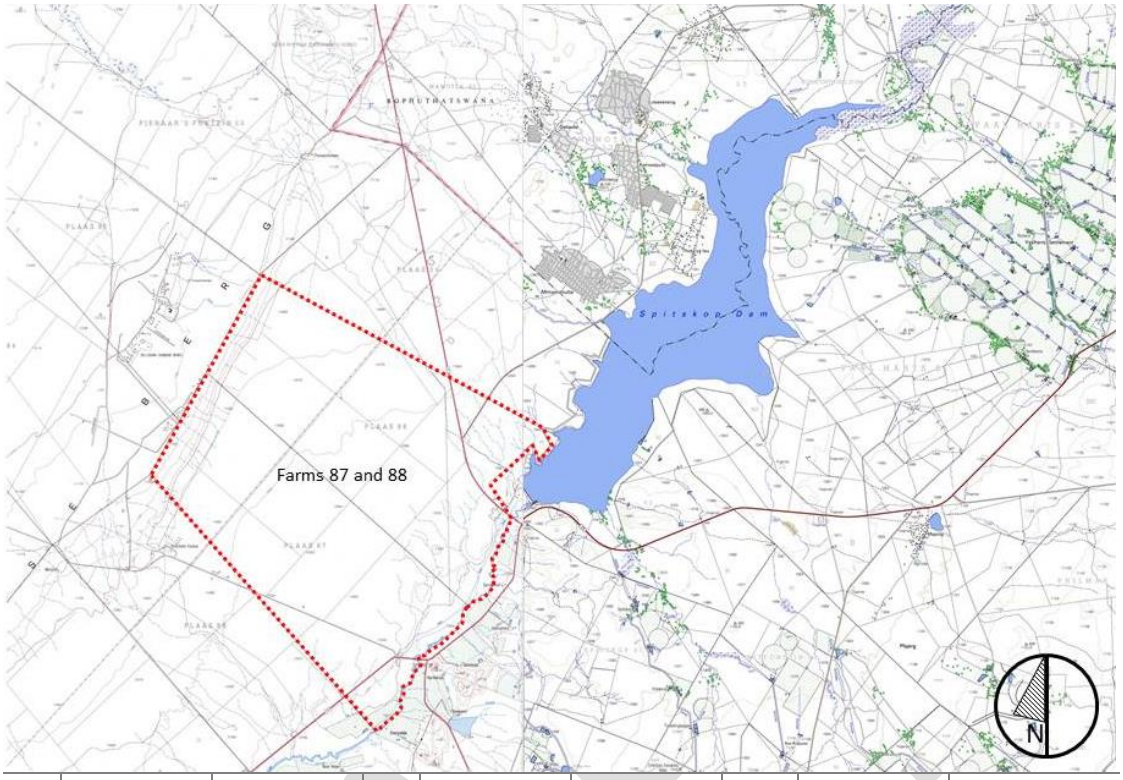


Figure 1: Farms 87 and 88 in Relation to Major Towns (Google Earth Image. Imagery Date – 04.10.2013)



1.	-28.1070	24.5080	5.	-28.1109	24.5030	9.	-28.1180	24.3943
2.	-28.1064	24.5052	6.	-28.1195	24.4898	10.	-28.1052	24.4028
3.	-28.1110	24.5081	7.	-28.1271	24.4968	11.	-28.0920	24.4107
4.	-28.1151	24.5047	8.	-28.1817	24.4567	12.	-28.0687	24.4248

Figure 2: Farms 87 and 88 in relation other townships, Spitskop Dam and the Harts River (1:50 000 Topographical Survey Sheets: 2824AB and 2824BA) and Site Coordinates

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%

In accordance with the information obtained from the Frances Baard District Municipality Integrated Development Plan (IDP) 2012/13 – 2016/17.

- The Dikgatlong municipal area is confirmed to have an unemployment rate of 39.7% and unemployment is attributed to low levels of education.
- Due to low levels of transformation, economic development opportunities, including wildlife-related activities, tourism or livestock farming have been identified for the Frances Baard District. Nature-related tourism opportunities have been identified for the Dikgatlong municipal area.
- Limited water availability has been identified as a threat to the future socio-economic development of the district.

Municipal information published by Statistic South Africa confirms that the municipality's economy is driven by livestock, irrigation farming and commercial mining.

1.1.2.2. Relevance of the information

The information 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 limited employment opportunities are expected during the prospecting phase, the confirmation of a viable reserve and the possible establishment of a mine may partially address unemployment challenges.

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. The impacts on such areas are further discussed in Section 1.1.3.1.9.

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 as well as climate monitoring data sources published by the Department of Water Affairs (DWA).

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	North and north-east

Wind Direction and Speed	
direction	
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.

Localised monthly rainfall data (Spitskop Dam) was obtained from climate monitoring data sources published by the DWA (www.dwa.gov.za/iwqs/wms/data/E_his.kmz) and in included in Table 3 below.

Table 3: Rainfall: Spitskop Dam

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
mm	50	105.5	36.5	10.5	0.0	15.0	2.5	0.0	1.5	17.5	4	139.5

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

Table 4: 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. They were emplaced during the Cretaceous in several parallel north-northeast and east-west trending structures.

Southern African kimberlites 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 $^{87}Sr/^{86}Sr$ and higher $^{143}Nd/^{144}Nd$ 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 (110Ma – 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 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 (2567Ma). These shallow water carbonate deposits form the lower section of the Campbellrand Subgroup of the Ghaap Group, and are overlain by recent cover of calcrete and sand. Ghaap Group sediments are known to be underlain by lithologies of the Ventersdorp Supergroup. These are known to occur at a depth of approximately 400m from Sedibeng Diamond mine located 30km to the north west of the proposed prospecting site.

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 5km to the west). There have also been various alluvial diamond operations within the vicinity of the exploration area (e.g. Mahura Muthla 90km to the north west), however the calcretised nature of the deposits has made them relatively difficult to mine. The GCS 1:250 000 geological maps report 2 kimberlites to the east of the exploration area.

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 known kimberlite occurrences in the immediate vicinity 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 strike (typical lenses are 70-80m in diameter). If 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.

Known kimberlite occurrences adjacent to the area under application are sub-parallel to the Ghaap Plateau escarpment, and only outcrop on surface in the immediate vicinity of the escarpment edge. To the east of the escarpment underlying rock types (especially kimberlite) are masked by overburden. Host lithologies in this area are Ghaap Group sediments (dolomites, shales and quartzites) which continue to a depth of approximately 500m below surface. These sediments are separated from underlying Ventersdorp lavas by a major geological unconformity. At the Sedibeng Diamond Mine this unconformity separates 2 segments of the Bobbejaan fissure by a distance of 70m, the lower fissure segment having absolutely no surface expression. Other mines in the have not been extended deep enough to expose kimberlite below this unconformity.

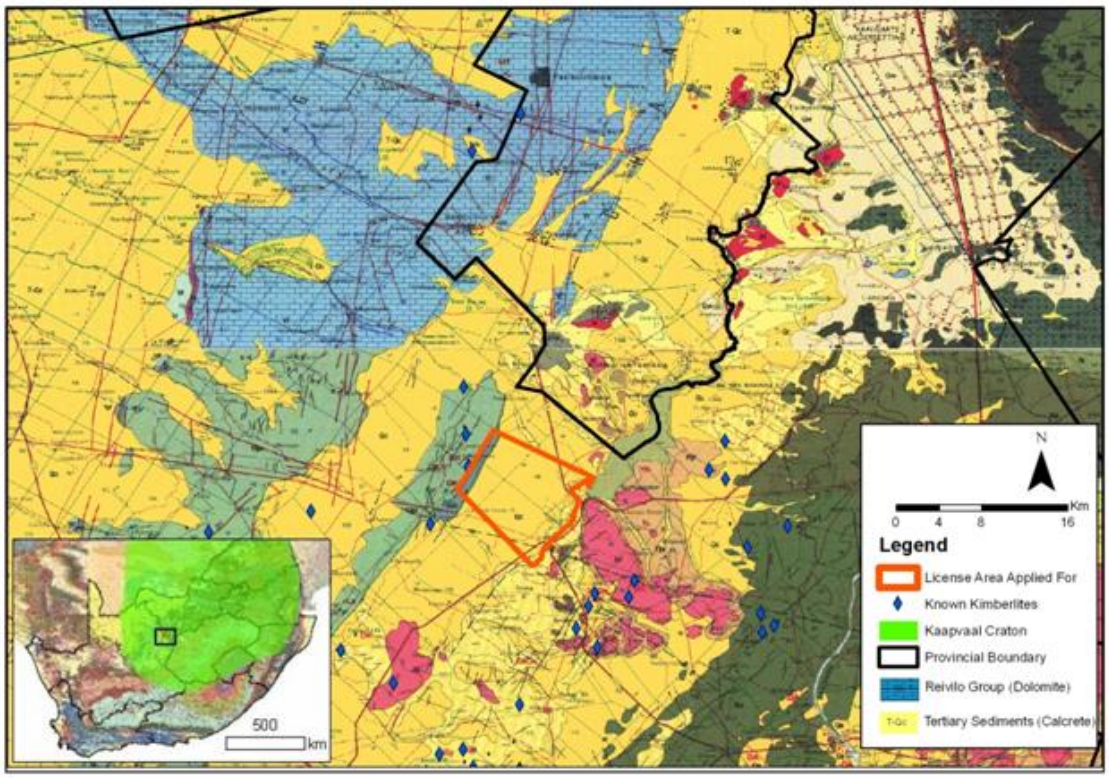


Figure 3: 1: 250 000 Geological Map

1.1.3.1.5. Land Capability and Land Use

According to the Agricultural Geo-Referenced Information System (AGIS), the prospecting site is indicated to be non-arable with a moderate to low grazing capacity.

The title deeds list that Farm 87 and 88 of Barkly West (the proposed prospecting site) are owned by the National Government of the Republic of South Africa. The Department of Land Affairs as well as the Northern Cape Department of Rural Development and Land Reform were contacted to confirm ownership and determine any lease and / or other use agreements.

Verbal telephonic confirmation of ownership from the Northern Cape Department of Rural Development and Land Reform was received on 10 September 2013 (Ms Majila). No further information regarding current and future land use has been forthcoming. The Northern Cape Department of Rural Development and Land Reform did not provide any information regarding existing lease or consent use agreements.

Additional consultation is on-going and it is expected that this information will be made available by the Northern Cape Department of Rural Development and Land Reform.

1.1.3.1.6. Surrounding Land Use

While cattle and game farming is the predominant land use in the area, crop cultivation is a significant land use enabled through large scale irrigation schemes and abstraction from the Harts River.

The Vaalharts Agricultural Valley is located in relative close proximity to the proposed prospecting site and has been developed through the establishment of the Vaalharts Irrigation Scheme. The Vaalharts Agricultural Valley is regarded as important exporting agricultural region. The Vaalharts agricultural union, through their website, reports that the Vaalharts agricultural area amounts to approximately 164,000 hectares, consisting of 1,260 irrigation farms and approximately 45 stock-farms (www.vaalharts.com).

Based on information obtained during key stakeholder meetings held in August 2013, crop cultivation is severely impacted on by poor water quality. A large number of farmers are

dependent on the Harts River as a water resource for irrigation purposes and poor water quality is placing limitation of crop types that can be cultivated. It was reported that as a result of poor water quality crops such as wheat and maize has been phased out in some instances.

The existing Sedibeng Diamond Mine is situated directly north east of the proposed prospecting site.

1.1.3.1.7. Land Claims

In response to an enquiry lodged with the Northern Cape Department of Rural Development and Land Reform, confirmation of an existing restitution claim applicable to Farm 88 was received.

A request for additional information with regard to this claim has been requested. No additional information has been forthcoming and the details of the relevant case officer are awaited.

It is expected that the information will be made available by the Northern Cape Department of Rural Development and Land Reform prior to the finalisation and submission of the Environmental Management Plan due on the 13th of October 2013.

1.1.3.1.8. 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 to assess surface or groundwater resources were undertaken.

The proposed prospecting site falls within the Lower Vaal Water Management Area, within Quaternary Catchment C33C, the Harts sub-area. 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 main water requirement in Harts sub-area is for irrigation and is in excess of 85%.

Surface Water

The Harts River forms the south eastern boundary of the planned prospecting site. The Klein Boetsap River traverses the site toward the eastern corner of the proposed prospecting area. A number of non-perennial drainage channels, which originates on the planned prospecting site, flows towards the Harts River. The Spitskop Dam is located towards the south east of the proposed prospecting site.

It should be noted that the site was not assessed by a specialist to determine the occurrence of wetlands, watercourses and or other water features. The identification of water courses is based on the 1:50 000 Topographical Sheets and other available aerial and desktop information.

DWA (2003) reported that the water in the Harts River downstream of the Vaalharts irrigation scheme is of exceptional high salinity resulting from saline leachate from irrigated fields.

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 Harts sub-areas. The total yield from groundwater in the overall water management area well exceeds water available from surface water sources.

Currently it is not known whether there is any water boreholes located on the site.

1.1.3.1.9. 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 description for the vegetation type was also obtained from the above-mentioned source.

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 the areas is statutorily conserved.

As part of the stakeholder consultation process, Birdlife South Africa confirmed that the Spitskop Dam has been identified as an Important Bird Area (IBA) as part of the Important Bird Area Programme.

Based on the publically available information obtained from the Birdlife website (http://www.birdlife.org/datazone/site), the Spitskop Dam supports a significant number of bird species (over 10,000 and occasionally up to 18,000 species). The dam is regarded as an important bird area as a permanent water body in a low rainfall region. Reportedly the dam supports a number of important bird species including Pinkbacked Pelican (*Pelecanus rufescens*), Caspian Tern (*Hydroprogne caspia*), Greater Phoenicopterus Ruber and Lesser Phoeniconaias minor flamingos.

The Spitskop Dam has no protection status and identified threats to the habitat are poaching and water pollution.

Additional baseline information provided by BirdLife SA confirms that the north-eastern extent of the proposed prospecting site area falls within the south-west section of the Spitskop Dam IBA. This IBA is regarded as important for the conservation of significant numbers of waterbirds in an arid region, which include Greater and Lesser Flamingo, Pink-backed Pelican, Little Grebe, Cape Shoveler, White-winged Tern, South African Shelduck, Little Stint and other waders. According to the information provided by BirdLife SA, over 27,000 water birds have been recorded at the Spitskop Dam, including over 5,000 Lesser Flamingos, a threatened species.

BirdLife SA further commented that the Spitskop Dam IBA is an important moulting site for the Egyptian Goose, the Spur-winged Goose and the South African Shelduck. During this moulting period these species are vulnerable and sensitive to disturbance, as are many of the other water bird species present at Spitskop Dam.

BirdLife SA also indicated that the Harts River corridor may be regarded as an important ecological area.

1.1.3.1.10. Heritage Resources

To date, 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.

1.1.3.1.11. Relevance of the information

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 deposits for mining purposes.

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 game farming and prospecting activities may present a disturbance to the game 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. The proposed prospecting site is directly adjacent to the Harts River and the site drains towards the river. The Spitskop Dam (an important surface water resource) is located directly to the south-east of the site.

Regionally, there is a high dependency on the available surface and ground water sources. Surface water quality in the Spitskop Dam and the Harts River is reported to be of poor quality as a result of agricultural related impacts. Groundwater quality is regarded to be of good quality.

Prospecting activities must be undertaken in a manner to ensure that no significant further contribution is made to water quality deterioration.

1.1.3.1.16. Biodiversity

The proposed prospecting site is regarded to be untransformed and is currently used for game farming. The BirdLife SA identified IBA affects the south-eastern portion of the site and is regarded as a sensitive environmental / ecological feature.

1.1.3.1.17. Heritage Resources

A Heritage Impact Assessment was not undertaken as part of the development of the Environmental Management Plan.

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 include the Klein Boetsap River, a non-perennial watercourse traversing the north-eastern corner of the site as well as a number of drainage lines draining towards the Harts River which forms the south-eastern boundary of the site (refer to Figure 4). A number of drainage lines also occur towards the south-western extent of the site. These watercourses and the associated riparian habitat may be regarded as sensitive ecological environments due to the expected unique characteristics thereof when compared to the general habitat characteristics of the remainder of the proposed prospecting site.

Based on the comments received from BirdLife South Africa (“BirdLife SA”), a portion of the proposed prospecting site has been identified as an Important Bird Area (IBA). The extent of the identified IBA is illustrated in Figure 5. Based on the information provided by BirdLife SA, this demarcated area must be regarded as a sensitive avifaunal habitat.

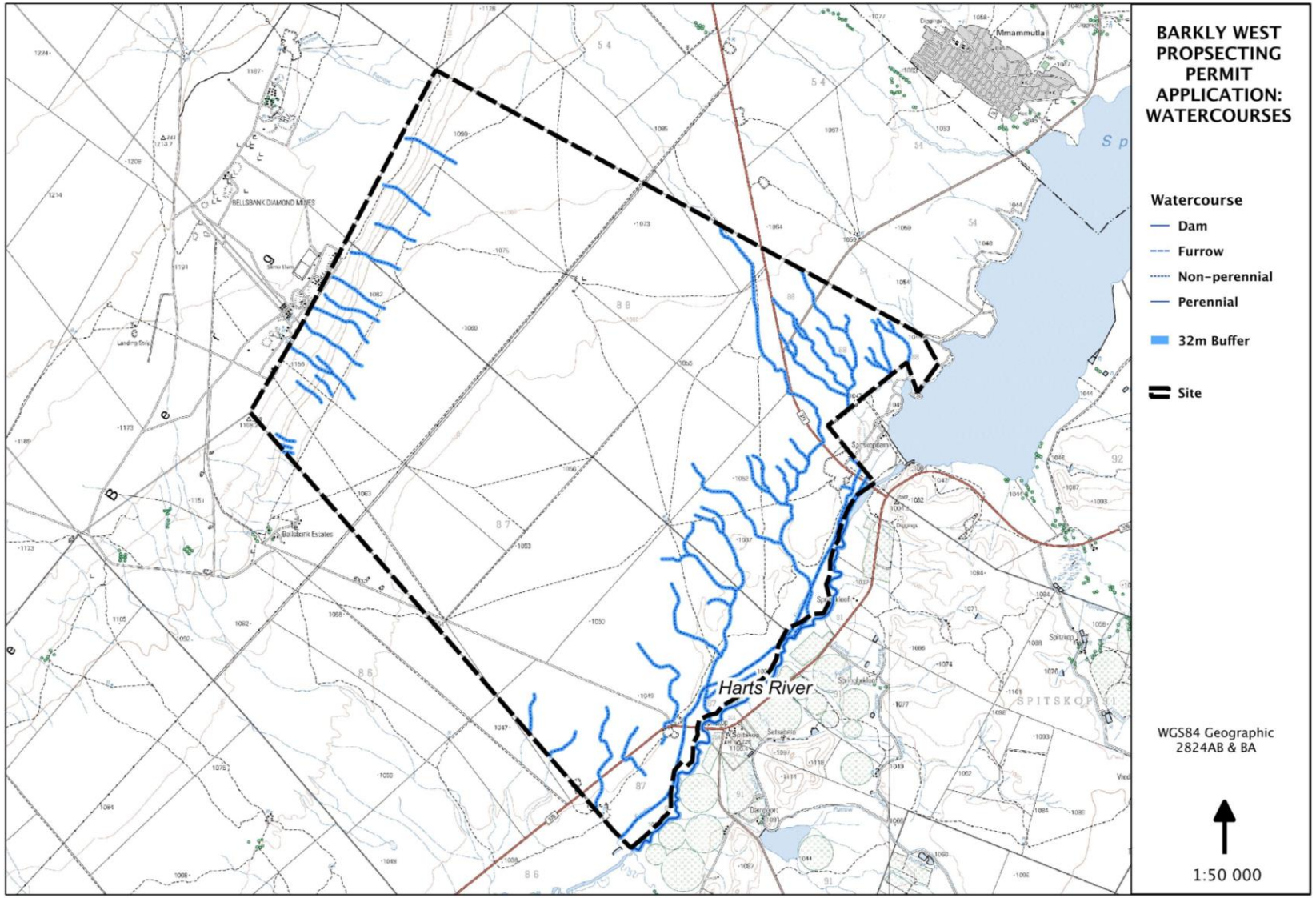


Figure 4: Watercourses identified on the proposed prospecting site

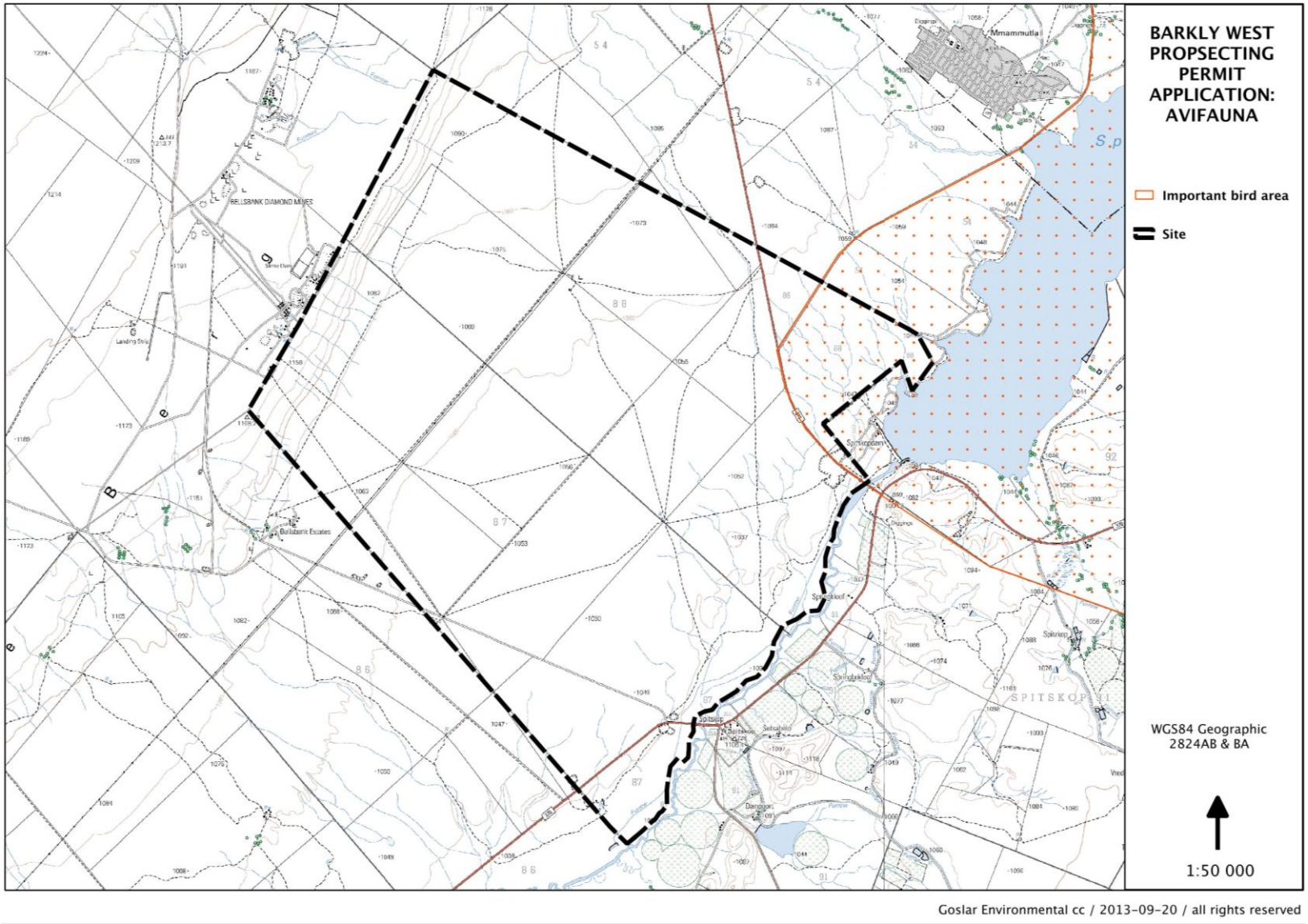


Figure 5: Important Bird Area as identified by BirdLife SA

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

Kindly refer to Figure 4 and Figure 5 for maps illustrating the spatial extent of environmental 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 5. Kindly note that this does not include all comments received impacts identified is recorded in Section 2.2.5 and objections received is recorded in Section 7.2.7 of this report.

Table 5: Comments received with regard to the baseline environmental and socio-economic conditions

Stakeholder	Date of comment	Comments received
Ms Tania Anderson	18 August 2013	Part of the farm identified for prospecting falls within an Important Bird Area (IBA). Mining is not an appropriate activity within an IBA which is there for the conservation of important habitat of threatened, range restricted and other protected bird species.
Mr van der Merwe	27 August 2013	Prospecting activities has been undertaken on various farm portions in the area, including farm portion owned by Van der Merwe and Sons. Water quality in the Harts River is imposing limitation of the crops that can be cultivated on farms dependent on this water resource.
Mr Fourie	27 August 2013	Confirmed that prospecting have been undertaken on land portions owned by him. Some of this information could possibly be made available to Petra Diamonds.
Mr Potgieter	27 August 2013	Clarified that Farms 87 & 88 is in relative close proximity to the Communal Property Association (CPA) owned land which is located towards the east of the Spitskop Dam. New employment opportunities would be beneficial to the communities located in the region. High employments rates are prevalent.
Mr Rifles	28 August 2013	The communities in Magareng has been benefiting from mining related job opportunities in which falls within Dikgatlong. Any future mine development within the municipality should be to the benefit of the communities within Dikgatlong. The unemployment rate in Dikgatlong is exceptionally high.
Mr Vorster	30 August 2013	Stated that the prospecting activities and the associated activities will further negatively impact on the water quality of the Harts River which is already of poor quality and impose further limits on the use of this water resource for farming purposes.
Mr Carolyn Ah Shene-Verdoorn	6 September 2013	The north-east section of the proposed prospecting study area falls within the south-west section of the Spitskop Dam IBA. This IBA is important for the conservation of significant numbers of water birds in this arid region, which include

Stakeholder	Date of comment	Comments received
		Greater and Lesser Flamingo, Pink-backed Pelican, Little Grebe, Cape Shoveler, White-winged Tern, South African Shelduck, Little Stint and other waders. Over 27 000 water birds have been recorded at Spitskop Dam during water bird counts, including over 5 000 Lesser Flamingos, one of the threatened species recorded at Spitskop. It is an important moulting site for Egyptian Goose, Spur-winged Goose and South African Shelduck. During this period they are vulnerable and sensitive to disturbance, as are many of the other water bird species present at Spitskop Dam.

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 diamond potential of the area is relatively unknown, and exploration work will commence at a very basic level. The prospecting will be undertaken in three (3) phases, each phase will be 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 collect 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.

2.1.1.1.2. Phase II: Target Generation, ground truthing and delineation

If the initial results of the desktop study are encouraging, further data will be generated through wide spaced grid loam sampling and ground work (or possibly an airborne geophysical survey) in order to determine if there are positive indications of the existence of either a primary or secondary diamondiferous deposit on the exploration area.

If any of the exploration targets give a positive result, a drilling program will be undertaken in order to delineate and give a preliminary assessment of the diamond potential of the deposit identified.

2.1.1.1.3. Phase III: Bulk Sampling and Feasibility Assessment

Should delineation and initial evaluation of the deposit indicate a sufficient size and grade to warrant further evaluation, an appropriate bulk sampling program will be undertaken in order to establish grade and confirm the viability of mining.

Table 6: Prospecting Timeframes and Activities

Phase	Anticipated Timeframe	Activities
Phase I: Desktop	1 Year	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.
Phase II: Airborne geophysics, sampling and drilling	3 Years	Depending on the outcome of the Phase 1 assessment, an airborne geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling. If kimberlite is intersected, one or more 10kg samples will be taken for Heavy Mineral Abundance (HMA) sampling to extract Kimberlite Indicator Minerals (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. Dependant on HMA results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling (geological facies and densities).
Phase III: Bulk Sampling	1 Year	Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution. The exact position of a bulk sample is currently unknown and will be determined by the preceding phases. The typical bulk sample pit may have an 80 x 50m surface dimension, a 20 x 50 floor dimension and will be approximately 15m deep. The sample will be treated at the existing reduction and treatment facilities at Sedibeng Diamond Mine.

2.1.1.2. Access Roads

Access to the site will be required during loam sampling, diamond drilling and bulk sampling activities (Phase II and III). Access requirements can only be determined after Phase I has been concluded. A number of existing roads and tracks (refer Figure 6) already traverse the proposed prospecting site and where practicable, these roads will be used.

During soil sampling activities, vehicle access will be gained to sampling site through the veld and the establishment of a track to gain repeated access to a soil sample site will not be required.

Once diamond drill site have been identified, temporary access roads may be established for repeated access to the drill site if the identified drill site cannot be access via existing roads and tracks. Similarly, in the event that a bulk sampling site is identified, temporary access roads may have to be established.

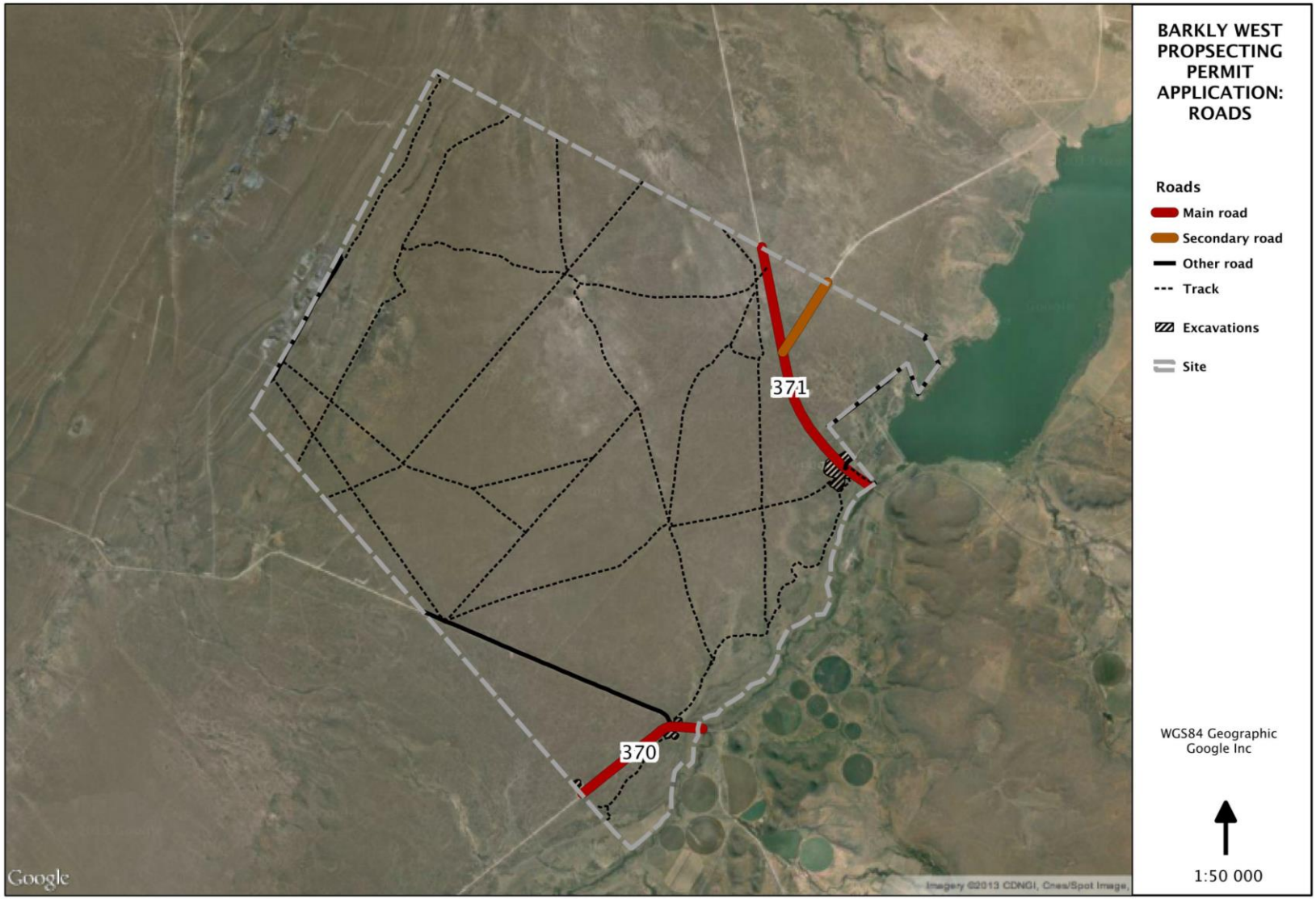


Figure 6: Existing Roads and Tracks

2.1.1.3. Water Supply

It is anticipated that water brought onto the site with from the Sedibeng Mine. Currently it is not known whether there are any water boreholes located on the site and whether access and supply will be granted by the landowner (the Department of Rural Development and Land Reform).

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 provided at the drill site.

During bulk sampling activities, water supply for potable and general use will be provided and two temporary 260 litre vertical water storage tanks will be installed.

2.1.1.4. Ablution

Ablution facilities at the drill site and bulk sampling will involve the installation of drum or tank type portable toilets.

2.1.1.5. Temporary Office Area

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

A temporary prefabricated office will be established during the bulk sampling phase of prospecting. The temporary office will include a small meeting room and office. No on-site electricity generation will be undertaken and no cooking facilities will be provided. Meals will be provided to the staff and workers as no heating and / or cold storage facilities will be available. A shaded eating area will be provided.

2.1.1.6. Accommodation

No accommodation for staff and workers will be provided on-site and all persons will be accommodated in nearby towns (i.e. Warrenton, Barkly West and / or Delportshoop). 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.

2.1.1.7. Blasting

Bulk sampling activities may require minimal blasting to be undertaken if an indurated calcrete layer is encountered above the kimberlite. All of the hard-rock sampling will be drilled and blasted using conventional open pit drilling equipment and explosives.

Working on a hypothetical 80m x 50m x 2m calcrete layer, 89mm holes on a 2m x 2m burden spacing will be drilled, which will amount to 1,066 holes with a volume of 190m^3.

If the top 500mm of the holes are stemmed, as much as 9.95m^3 or 11.4 tonnes of pumpable explosives could be used. The timing of detonation however will be such that only one hole should detonate at a point in time.

The density of sensitised emulsion is between 1.0 and 1.15g/cc and a hole of 2m of which 1.5m is filled will contain less than 11kg of pumpable sensitised emulsion.

On the recommendation of the supplier and based on the United States Bureau of Mines Guideline, a peak particle velocity (PPV) of less than 10mm/s is expected.

The blasting parameters of the PPV is not anticipated to surpass an outside a radius of 250m. The area within a 500m radius around the blast will have to be evacuated for potential fly rock.

The risk assessment at the time of a blast would take cognisance of prevailing weather condition for example overcast conditions which may accentuate the perceived shockwave and wind direction and wind speed to limit exposure to dust.

No contamination of water or water pollution is foreseen to originate from these potential blasting activities.

2.1.1.8. Storage of Dangerous Goods

During the diamond drilling and bulk sampling activities limited quantities of diesel fuel, oil and lubricants 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 1 assessment, an airborne geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling.

If kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential.

Dependant on results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling.

Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution.

The location and extent of soil smapling, possible diamond drilling and bulk sampling 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) and size of a typical bulk sample pit (refer Figure 8) 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)

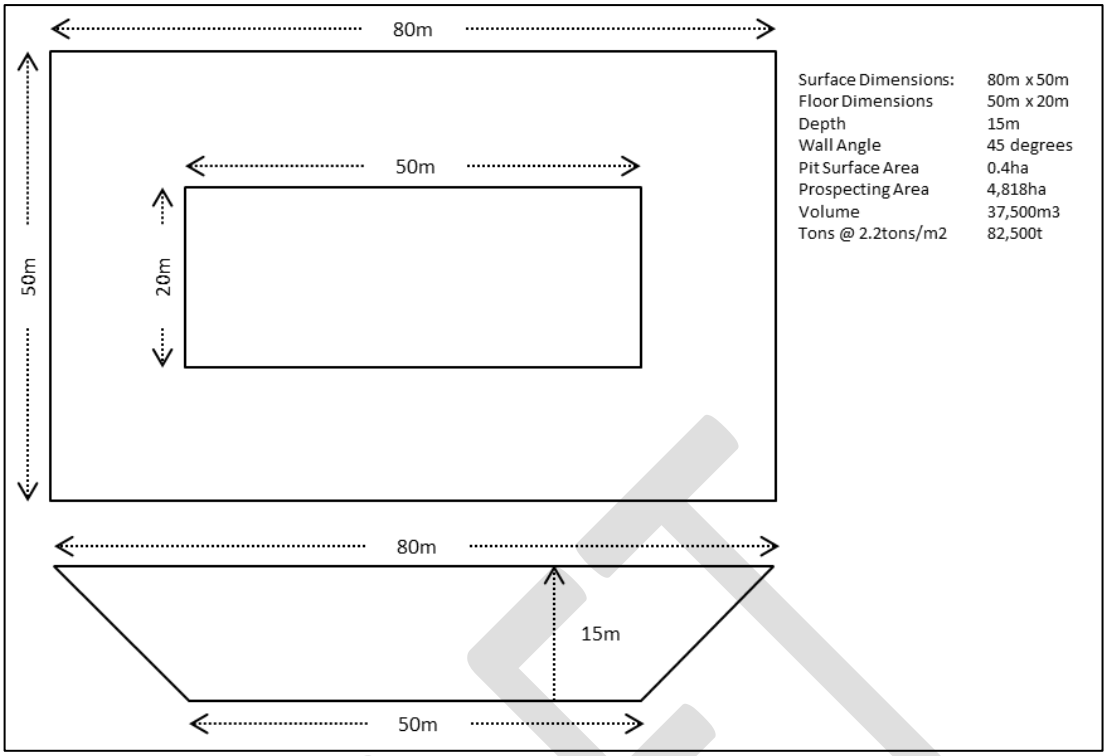


Figure 8: Hypothetical Bulk Sample Box Cut (Not to Scale)

2.1.3. Description of construction, operational, and decommissioning phases

As previously stated, during 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 the remainder of Phase II and Phase III are outlined in Table 7 below.

Table 7: Description of the construction, operational and decommissioning activities that will be undertaken during the remainder of Phase II and Phase III

Phase		Activities
Phase II: Soil sampling	Construction	No construction or site establishment activities will be undertaken
	Operation	Soil sampling will be undertaken at identified sites in accordance with the following method: 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 will be gained to sampling sites through the veld and the establishment of a tracks to gain repeated access to a soil sample site will not be required. 3. A maximum of 30kg soil samples will be taken.
	Decommission	No decommissioning activities will be required.
Phase II: Diamond drilling	Construction	4. Site access will be gained through the use of existing roads and / or tracks. 5. 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.

Phase		Activities
		6. Site establishment will include: 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; and f. Erection of safety barrier.
	Operation	7. Exploration drilling; and 8. Core sample collection and storage.
	Decommission	9. Removal of temporary site office shaded area, potable ablution faculties and water storage tanks and core bay; and 10. Drill pad rehabilitation will include: a. Ripping of drill pad; b. Re-spreading of stockpiled topsoil; and c. Re-vegetation.
Phase 3: Bulk sampling	Construction	11. Site access will be gained through the use of existing roads and / or tracks. 12. In instances where access cannot be gained to the identified sites via established roads and tracks, vehicle access to bulk sample site will be gained through the establishment of access tracks. No formal road construction activities will be undertaken. 13. Site establishment will include: a. Vegetation clearing of sample pit area; b. Topsoil stripping and subsoil excavation and stockpiling; c. Erection of temporary site office, potable ablution faculties and water storage tanks.
	Operation	14. Bulk sampling will be drilled and blasted if necessary using conventional open pit drilling equipment and explosives.
	Decommission	15. Removal of temporary site office, potable ablution faculties and water storage tanks. 16. Sample pit backfilling. 17. Site rehabilitation will include: a. Ripping of compacted areas; 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, drilling and bulk sampling phases 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 8. 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 8: Activities listed in terms of the National Environmental Management Act 107 of 1998

Activity #	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 bulk sampling within and / or within 32 metres of the identified watercourses will require authorisation.
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 bulk sampling 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	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

Activity #	Activity Description	Requirements
	Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case that Act will apply.	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 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 9.

2.2.1. Potential impacts per activity and listed activities

Table 9: Potential Impacts per Activity

Phase		Activities	Potential Impacts
Phase II: Airborne geophysics	N/A	Airborne geophysics survey	1. Noise impacts resulting from site fly-overs affecting game farm animals and nuisance noise impacts on communities and landowners and other persons
Phase II: Soil sampling	Construction	No construction or site establishment activities will be undertaken	2. No anticipated impacts
	Operation	Site access	3. Destruction and / or disturbance of on-site fauna and flora
			4. Vehicle traffic noise impact affecting wildlife game farm animals
		30kg of soil per sample	5. Soil disturbance from soil sampling resulting in soil erosion.
	Decommissioning	No decommissioning activities will be required	6. No anticipated impacts
Phase II: Diamond drilling	Construction	Site Access	7. Destruction and / or disturbance of on-site fauna and flora
			8. Soil compaction resulting from repeated use of access roads to drill sites
			9. Vehicle traffic noise impact affecting wildlife game farm animals
		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*	10. Destruction and / or disturbance of on-site fauna and flora
			11. Destruction and / or disturbance of IBA habitat and avifauna
			12. Soil disturbance and topsoil stockpiling resulting in soil erosion.
			13. Dust emission resulting from site clearing, soil stripping and construction activities (including

Phase		Activities	Potential Impacts
		(f) *Erection of fuel storage tank* (g) *Erection of safety barrier* (h) *Waste generation and management*	vehicle entrained dust). 14. Visual Impact affecting visual character and "sense of place" 15. Influx of persons (job seekers) to site as a result of increased activity
	Operation	Exploration drilling and core sample collection and storage including: *(a) Diamond 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*	16. Water and soil pollution resulting from disposal of drill fluids 17. Continued soil erosion from topsoil stockpile and drill pad platform. 18. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities. 19. Dust emissions from drilling and general site activities (including vehicle entrained dust) 20. Visual Impact affecting visual character and "sense of place" 21. Vehicle traffic and drill noise impact affecting wildlife game farm animals 22. Influx of persons (job seekers) to site as a result of increased activity
	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*	23. Dust emissions from decommissioning activities (including vehicle entrained dust). 24. Potential water and soil pollution resulting from hydrocarbon spills. 25. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.

Phase		Activities	Potential Impacts
		(b) Re-spreading of stockpiled topsoil (c) *Re-vegetation*	
Phase 3: Bulk sampling	Construction	Site Access	26. Destruction and / or disturbance of on-site fauna and flora.
			27. Soil compaction resulting from repeated use of access roads to bulk sample site.
		Site establishment including: *(a) Vegetation clearing of sample pit area;* *(b) Topsoil stripping and subsoil excavation and stockpiling;* *(c) Erection of temporary site office, portable ablution faculties and water storage tank* *(d) Erection of fuel storage tank* (e) *Waste generation and management*	28. Destruction and / or disturbance of on-site fauna and flora.
			29. Soil disturbance and topsoil and subsoil stockpiling resulting in soil erosion.
			30. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).
			31. Visual Impact affecting visual character and "sense of place"
			32. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
	Operation	Hard-rock sampling will be drilled and blasted using conventional open pit drilling equipment and explosives including: *(a) Drilling and blasting* *(b) Hard rock excavation and transportation* *(c) Vehicle maintenance and re-fuelling* (d) *Waste generation and management*	33. Destruction and / or disturbance of on-site fauna and flora
			34. Destruction and / or disturbance of IBA habitat and avifauna
			35. Dust emission resulting from excavation and blasting activities (including vehicle entrained dust).
			36. Continued soil compaction resulting from repeated use of access roads to bulk sample site.
			37. Continued soil erosion from soil stockpiles and other cleared areas.
			38. Potential water and soil pollution resulting from hydrocarbon spills and use of explosives.

Phase		Activities	Potential Impacts
			39. Vehicle traffic and blasting noise impact affecting game farm animals and resulting in nuisance impacts affecting adjacent landowners
			40. Visual Impact affecting visual character and "sense of place"
			41. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
	Decommissioning	Removal of temporary site office, potable ablution faculties and water storage tanks	42. Dust emissions from decommissioning activities (including vehicle entrained dust)
			43. Potential water and soil pollution resulting from hydrocarbon spills
		Sample pit backfilling	44. Dust emissions from decommissioning activities (including vehicle entrained dust)
			45. Potential water and soil pollution resulting from hydrocarbon spills
		Site rehabilitation including: *(a) Ripping of compacted areas* *(b) Re-spreading of stockpiled topsoil* (c) *Re-vegetation*	46. 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 10.

Table 10: 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. 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 will extend beyond the boundary of the site if not managed appropriately. The Harts River drains the majority of the property and this river is already regarded to have poor water quality which in turn affects the agricultural sector highly dependent on this surface water resource.
Geohydrology	Groundwater pollution	5. 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.
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 Heritage Impact Assessment was not undertaken as part of the development of the Environmental Management Plan and no archaeological or heritage features have been identified and therefore no impacts have been identified.

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.

These impacts have also been highlighted as a concern by adjacent and non-adjacent landowners consulted during the stakeholder engagement process. The detailed descriptions of these impacts are included in the section below.

2.2.4.1. Water pollution

As the Harts River forms the south-eastern boundary of the proposed prospecting site, the potential risk that planned prospecting activities will result in the release of pollutants to this river is emphasised.

Possible pollution sources include stockpiled soil and all areas cleared of vegetation. The eroded soil particles may be carried by stormwater to the Harts River which will result in an increase in the Total Suspended Solids (TSS) and Total Dissolved Solids (TDS) of the water body.

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 Harts River.

This impact is also regarded as a cumulative impact due to the potential contribution to water quality deterioration of the Harts River which has been reported to be significantly negatively affected by other pollution sources.

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. Two landowners commented on non-violent incidences of theft, which is perceived to have resulted from an influx of persons seeking employment.

2.2.4.3. Visual impact

A number of game farms have been identified in relative close proximity to the targeted prospecting site. The owner of the Makhulu Safari Lodge specifically commented on the negative visual impact of the planned prospecting operations which will affect the safari experience currently enjoyed by his guests.

The general characteristics of the site and that of the surrounding area are regarded to be that of “wilderness” and farming (crop cultivation) and prospecting activities may result in 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 Section 2.2.4.

In accordance with the title deeds, the Farm Portion 87 and 88 is owned by the National Government of the Republic of South Africa. The Department of Land Affairs as well as the Northern Cape Department of Rural Development and Land Reform have been contacted to confirm ownership and determine any lease and / or other use agreements. Verbal confirmation of ownership from the Northern Cape Department of Rural Development and Land Reform was received on 10 September 2013.

Based on a telephonic discussion with the current landowner (the Department of Rural Development and Land Reform, represented by Ms Majila), concerns regarding the impact on game animals kept on Farm 88 has been raised. Ms Majila requested that a meeting be scheduled to further discuss the application.

Additional consultation will be undertaken and information included in the final Environmental Management Plan.

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 11 to Table 16. The various environmental impacts and benefits of this project are discussed in terms of impact status, extent, duration, probability, and intensity. Impact significant is regarded as the sum of the impact extent, duration, probability and intensity and a numerical rating system will be 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 16).

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 11: 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 12: Extent of Impact

RATING	DESCRIPTION	QUANTITATIVE RATING
Low	Site Specific; Occurs within the site boundary.	1

RATING	DESCRIPTION	QUANTITATIVE RATING
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 13: 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 14: 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 Probable	It is expected that the impact will occur; Chance of occurrence 50 – 90%.	3
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 15: 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	+ 5

RATING	DESCRIPTION	QUANTITATIVE RATING
	permanent benefit.	
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 16: 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	- 1 – 5

IMPACT	RATING	DESCRIPTION	QUANTITATIVE RATING
		impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural, and economic activities of communities can continue unchanged.	
	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 both before and after the proposed mitigations measures. A description of the terms used in the table is detailed below:

Aspect: Refers to the physical, biophysical or socio-economic environmental components as investigated.

General Impact: Refers to the broad-spectrum or category of the expected impact being pollution, degradation, loss; etc.

Specific Impact: Refers to the actual activity that will cause the expected impact.

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

Table 17: Potential Impacts and Significance Rating

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
Phase II: Airborne geophysics	N/A	Airborne geophysics survey	1. Noise impacts resulting from site fly-overs affecting game farm animals and nuisance noise impacts on communities and landowners and other persons	N	2	1	2	2	7
Phase II: Soil sampling	Construction	No construction or site establishment activities will be undertaken	2. No anticipated impacts	_	N/A	N/A	N/A	N/A	N/A
	Operation	Site access	3. Destruction and / or disturbance of on-site fauna and flora.	N	1	1	2	2	6
			4. Vehicle traffic noise impact affecting game farm animals	N	1	1	2	2	6
		30kg of soil per sample	5. Soil disturbance from soil sampling resulting in soil erosion.	N	1	2	1	2	6
	Decommissioning	No decommissioning activities will be required	6. No anticipated impacts	_	N/A	N/A	N/A	N/A	N/A
Phase II: Diamond drilling	Construction	Site Access	7. Destruction and / or disturbance of on-site fauna and flora	N	1	2	4	3	10
			8. Soil compaction resulting from repeated use of access roads to drill sites	N	1	1	4	2	8
			9. Vehicle traffic noise impact affecting wildlife game farm animals	N	1	1	2	2	6

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		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*	10. Destruction and / or disturbance of on-site fauna and flora	N	1	2	4	3	10
			11. Destruction and / or disturbance of IBA habitat and avifauna	N	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*				
			12. Soil disturbance and topsoil stockpiling resulting in soil erosion	N	2	1	5	3	11
			13. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	N	2	1	5	2	10
			14. Visual Impact affecting visual character and "sense of place"	N	2	1	2	1	6
			15. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	N	2	1	2	3	8
	Operation	Exploration drilling and core sample collection and storage including: *(a) Diamond drilling* *(b) Drill maintenance and*	16. Water and soil pollution resulting from disposal of drill fluids	N	2	2	5	3	12
			17. Continued soil erosion from topsoil stockpile and drill pad platform.	N	2	1	5	3	11

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		re-fuelling *(c) Core sample collection and storage* *(d) Drill fluid collection, storage and evaporation* (e) *Waste generation and management*	18. Potential water and soil pollution resulting from hydrocarbon spills, drill maintenance activities and waste disposal	N	2	2	5	3	12
			19. Dust emissions from drilling and general site activities (including vehicle entrained dust)	N	2	1	5	2	10
			20. Visual Impact affecting visual character and "sense of place"	N	2	1	2	1	6
			21. Vehicle traffic and drill noise impact affecting game farm animals	N	1	1	2	2	6
			22. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in 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* Drill pad rehabilitation including: *(a) Ripping of drill pad and access road* *(b) Re-spreading of*	23. Destruction and / or disturbance of on-site fauna	N	1	2	3	3	
			24. Dust emissions from decommissioning activities (including vehicle entrained dust).	N	2	1	5	2	10
			25. Potential water and soil pollution resulting from hydrocarbon spills and waste disposal	N	2	2	5	3	12
			26. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	N	2	1	5	3	11

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		stockpiled topsoil (c) *Re-vegetation*							
Phase 3: Bulk sampling	Construction	Site Access	27. Destruction and / or disturbance of on-site fauna and flora.	N	1	2	4	3	10
			28. Destruction and / or disturbance of IBA habitat and avifauna	N	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*				
			29. Soil compaction resulting from repeated use of access roads to bulk sample site.	N	1	1	4	2	8
		Site establishment including: *(a) Vegetation clearing of sample pit area* *(b) Topsoil stripping and subsoil excavation and stockpiling* *(c) Erection of temporary site office, portable ablution faculties and water storage tank* *(d) Erection of fuel storage tank* (e) *Waste generation and management*	30. Destruction and / or disturbance of on-site fauna and flora.	N	1	2	4	3	10
			31. Destruction and / or disturbance of IBA habitat and avifauna	N	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*				
			32. Soil disturbance and topsoil and subsoil stockpiling resulting in soil erosion.	N	2	1	5	3	11

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
			33. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	N	2	1	5	2	10
			34. Visual Impact affecting visual character and "sense of place"	N	2	1	2	1	6
			35. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	N	2	1	2	3	8
	Operation	Hard-rock sampling will be drilled and blasted using conventional open pit drilling equipment and explosives including: *(a) Drilling and blasting* *(b) Hard rock excavation and transportation* *(c) Vehicle maintenance and re-fuelling* (d) *Waste generation and management*	36. Destruction and / or disturbance of on-site fauna and flora	N	1	1	4	3	9
			37. Destruction and / or disturbance of IBA habitat and avifauna	N	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*				
			38. Dust emission resulting from excavation and blasting activities (including vehicle entrained dust).	N	2	1	5	3	11
			39. Continued soil compaction resulting from repeated use of access roads to bulk sample site.	N	1	1	4	3	9
			40. Continued soil erosion from soil stockpiles and other cleared areas.	N	2	1	5	3	11

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
			41. Potential water and soil pollution resulting from hydrocarbon spills, use of explosives and waste disposal	N	2	2	5	3	12
			42. Vehicle traffic and blasting noise impact affecting game farm animals and resulting in nuisance impacts affecting adjacent landowners	N	2	1	4	3	10
			43. Visual Impact affecting visual character and "sense of place"	N	2	1	2	1	6
			44. Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	N	2	1	2	3	8
	Decommissioning	Removal of temporary site office, potable ablution faculties and water storage tanks	45. Dust emissions from decommissioning activities (including vehicle entrained dust)	N	2	1	5	3	11
			46. Potential water and soil pollution resulting from hydrocarbon spills	N	2	2	5	3	12
		Sample pit backfilling	47. Dust emissions from decommissioning activities (including vehicle entrained dust)	N	2	1	5	2	10
			48. Potential water and soil pollution resulting from hydrocarbon spills and waste disposal	N	2	2	5	3	12
		Site rehabilitation including: *(a) Ripping of compacted areas*	49. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established	N	2	1	5	3	11

Phase		Activities	Potential Impacts	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
		(b) Re-spreading of stockpiled topsoil (c) *Re-vegetation*							

3.1.6. Assessment of potential cumulative impacts

Table 18: 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 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. The Harts River drains the majority of the property and this river is already regarded to have poor water quality which in turn affects the agricultural sector highly dependent on this surface water resource.	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

Aspect	Impacts	Detailed Description	Status	Extent	Duration	Probability	Intensity	Significance before Mitigation
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 local, regional and national roads in the area.	N	3	1	2	1	7

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 19.

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 19.

Table 19: Proposed Mitigation Measures

Phase		Activities	Potential Impacts	Proposed Mitigation
Phase II: Airborne geophysics	N/A	Airborne geophysics survey	Noise impacts resulting from site fly-overs affecting game farm animals and nuisance noise impacts on communities and landowners and other persons	1. No mitigation
Phase II: Soil sampling	Construction	No construction or site establishment activities will be undertaken	No anticipated impacts	2. No mitigation
	Operation	Site access	Destruction and / or disturbance of on-site fauna and flora	3. Use existing track and roads in all instances as far as is practicable 4. As part of the soil sampling programme no tracks will be cleared for once-off access to sampling sites 5. 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 6. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances 7. Vehicle speed will be reduced, particularly in highly vegetated areas to avoid deaths by vehicle impacts
			Vehicle traffic noise impact affecting game farm animals	8. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances
		30kg of soil per sample	Soil disturbance from soil sampling resulting in soil erosion	9. Soil disturbances is to be limited as far as is practicable
	Decommissioning	No decommissioning activities will be required	No anticipated impacts	10. No mitigation
Phase II: Diamond drilling	Construction	Site Access	Destruction and / or disturbance of on-site fauna and flora	11. Use existing track and roads in all instances as far as is practicable 12. Where track clearing is necessary, raised blade clearing will be conducted to minimise

Phase		Activities	Potential Impacts	Proposed Mitigation
				disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided 13. Site activities will be conducted during daytime hours 17h00 – 17h30 to avoid night time noise disturbances 14. 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	15. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts 16. As part of rehabilitation, all compacted roads will be ripped and re-vegetated
			Vehicle traffic noise impact affecting game farm animals	17. Site activities will be conducted during daytime hours 17h00 – 17h30 to avoid night time noise disturbances
		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*	Destruction and / or disturbance of on-site fauna and flora	18. The removal of vegetation within the drill pad area will be minimized 19. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts 20. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment 21. An fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire
			Destruction and / or disturbance of IBA habitat and avifauna	22. In the event that drill site is identified in close proximity (100m) or within the IBA, a avifaunal assessment will be undertaken and additional mitigation measures included in the Environmental Management Plan
			Soil disturbance and topsoil stockpiling resulting in soil erosion	23. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil

Phase		Activities	Potential Impacts	Proposed Mitigation
		(f) Erection of fuel storage tank *(g) Erection of safety barrier* *(h) Waste generation and management*		24. Topsoil including remaining the vegetation and 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 25. Where practicable topsoil will be stripped to a depth of 10cm. 26. 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 27. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3 28. 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).	29. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities 30. 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 landscape character and "sense of place"	31. 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	32. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment 33. The landowner (the Department of Rural Development and Land Reform) will be notified of unauthorised persons encountered on site 34. If deemed necessary, the South African Police

Phase		Activities	Potential Impacts	Proposed Mitigation
				Service will be informed of unauthorised persons encountered on site
	Operation	Exploration drilling and core sample collection and storage including: *(a) Diamond 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*	Water and soil pollution resulting from disposal of drill fluids	35. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation 36. 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	37. 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 38. The topsoil stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad 39. 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 rig maintenance and waste disposal activities	40. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity 41. Oils and lubricant will be stored within secondary containment structures 42. Where practicable, vehicle maintenance will be undertaken off-site 43. 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 44. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop 45. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified

Phase		Activities	Potential Impacts	Proposed Mitigation
				46. A sufficient number of waste receptacles will be provided 47. Waste separation will be undertaken as source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste) 48. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight 49. 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
			Dust emissions from drilling and general site activities (including vehicle entrained dust)	50. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement 51. 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 landscape character and "sense of place"	52. Visual impact of structures will be mitigated through measures as included in Item 31 53. Visual dust dispersion will be mitigated through measures as included in Item 29
			Vehicle traffic and drill noise impact affecting game farm animals	54. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances
			Influx of persons (job seekers) to site as a result of increased activity	55. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment 56. The landowner (the Department of Rural Development and Land Reform)will be notified of unauthorised persons encountered on site 57. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site

Phase		Activities	Potential Impacts	Proposed Mitigation
	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*	Destruction and / or disturbance of on-site fauna	58. 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 59. Drill holes must be permanently capped as soon as is practicable
			Dust emissions from decommissioning activities (including vehicle entrained dust)	60. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement 61. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources
			Potential water and soil pollution resulting from hydrocarbon spills, open boreholes and waste disposal practices	62. All fuel storage tanks will be emptied prior to removal 63. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination 64. 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	65. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles 66. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist 67. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding 68. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months

Phase		Activities	Potential Impacts	Proposed Mitigation
Phase 3: Bulk sampling	Construction	Site Access	Destruction and / or disturbance of on-site fauna and flora.	69. Use existing track and roads in all instances as far as is practicable 70. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts 71. Avoid significant vegetation such as trees and large shrubs in the event that track clearing is required 72. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances 73. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts
			Destruction and / or disturbance of IBA habitat and avifauna	74. In the event that a bulk sample site access is required in close proximity (100m) or within the IBA, an avifaunal assessment will be undertaken and additional mitigation measures included in the Environmental Management Plan
			Soil compaction resulting from repeated use of access roads to bulk sample site.	75. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts 76. As part of rehabilitation, all compacted roads will be ripped and re-vegetated
		Site establishment including: *(a) Vegetation clearing of sample pit area* *(b) Topsoil stripping and subsoil excavation and stockpiling* *(c) Erection of temporary site office, portable*	Destruction and / or disturbance of on-site fauna and flora.	77. The removal of vegetation will be minimized as far as is practicable 78. Where practicable, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts (i.e. around site offices) 79. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat
			Destruction and / or disturbance of IBA habitat and avifauna	80. In the event that a bulk sample site is identified in close proximity (100m) or within the IBA, an avifaunal assessment will be undertaken and additional mitigation measures included in the

Phase		Activities	Potential Impacts	Proposed Mitigation
		ablution faculties and water storage tank *(d) Erection of fuel storage tank* *(e) Waste generation and management*		Environmental Management Plan
			Soil disturbance and topsoil and subsoil stockpiling resulting in soil erosion	81. Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3 82. Topsoil will be used as part of rehabilitation 83. Subsoil will be stockpiled to a maximum height of 3m with a side slope of not more than 1:3 84. Subsoil will be used as backfill pit material 85. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.
			Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust)	86. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement 87. 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"	88. The temporary site office, 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 and the possible resultant increase in opportunistic crime.	89. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment 90. The landowner (the Department of Rural Development and Land Reform)will be notified of unauthorised persons encountered on site 91. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site
	Operation	Hard-rock sampling will be drilled and blasted using conventional open	Destruction and / or disturbance of on-site fauna and flora	92. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances

Phase		Activities	Potential Impacts	Proposed Mitigation
		pit drilling equipment and explosives including: *(a) Drilling and blasting* *(b) Hard rock excavation and transportation* *(c) Vehicle maintenance and re-fuelling* *(d) Waste generation and management*		93. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts
			Destruction and / or disturbance of IBA habitat and avifauna	94. In the event that a bulk sample site is identified in close proximity (100m) or within the IBA, an avifaunal assessment will be undertaken and additional mitigation measures included in the Environmental Management Plan
			Dust emission resulting from excavation and blasting activities (including vehicle entrained dust)	95. Blasts will be designed and executed by a suitably qualified engineering specialist 96. Blasts will not be undertaken during high wind occurrences (wind speeds at or more than 8.8 m/s) 97. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement 98. Depending on the need and quantity of water used for wet suppression, chemical suppression alternative must be considered in order to conserve water resources
			Continued soil compaction resulting from repeated use of access roads to bulk sample site	99. Use existing track and roads in all instances as far as is practicable 100. As part of rehabilitation, all compacted roads will be ripped and re-vegetated
			Continued soil erosion from soil stockpiles and other cleared areas.	101. Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3 102. Subsoil will be stockpiled to a maximum height of 3m with a side slope of not more than 1:3 103. 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, the use of explosives and waste management and disposal	104. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity 105. Oils and lubricant will be stored within

Phase		Activities	Potential Impacts	Proposed Mitigation
				secondary containment structures 106. Where practicable, vehicle maintenance will be undertaken off-site 107. 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 108. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop 109. Regular inspections of all vehicles will be carried out to ensure that all leaks are identified early and rectified 110. A sufficient number of waste receptacles will be provided. 111. Waste separation will be undertaken as source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste 112. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals over night 113. 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 114. Groundwater contamination from blasting activities is not expected. In the event that groundwater is encountered additional monitoring and mitigation measures must be developed and implemented.
			Vehicle traffic and blasting noise impact affecting game farm animals and resulting in nuisance impacts affecting adjacent landowners	115. Blasts will be designed and executed by a suitably qualified engineering specialist 116. Blasts will not be undertaken during high wind occurrences (wind speeds at or more than 8.8 m/s) 117. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise

Phase		Activities	Potential Impacts	Proposed Mitigation
				disturbances
			Visual Impact affecting visual character and "sense of place"	118. Visual impact of structures will be mitigated through measures as included in Item 88 119. Visual dust dispersion will be mitigated through measures as included in Item 97
			Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.	120. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment 121. The landowner (the Department of Rural Development and Land Reform)will be notified of unauthorised persons encountered on site 122. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site
	Decommissioning	Removal of temporary site office, potable ablution faculties and water storage tanks	Dust emissions from decommissioning activities (including vehicle entrained dust)	123. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement 124. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.
			Potential water and soil pollution resulting from hydrocarbon spills	125. All fuel storage tanks will be emptied prior to removal 126. 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
		Sample pit backfilling	Dust emissions from decommissioning activities (including vehicle entrained dust)	127. Suitable material for backfilling will be sources off-site. The establishment of on-site borrow pits will not be allowed
			Potential water and soil pollution resulting from hydrocarbon spills	128. Regular inspections of all vehicles will be carried out to ensure that all leaks are identified early and rectified

Phase		Activities	Potential Impacts	Proposed Mitigation
		Site rehabilitation including: *(a) Ripping of compacted areas* *(b) Re-spreading of stockpiled topsoil* *(c) Re-vegetation*	Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established	129. The use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles. 130. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist 131. 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.

3.2.2.1. 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 also removes the need to strip, stockpile and re-spread topsoil which can reduce earthmoving costs.

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 9.

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.

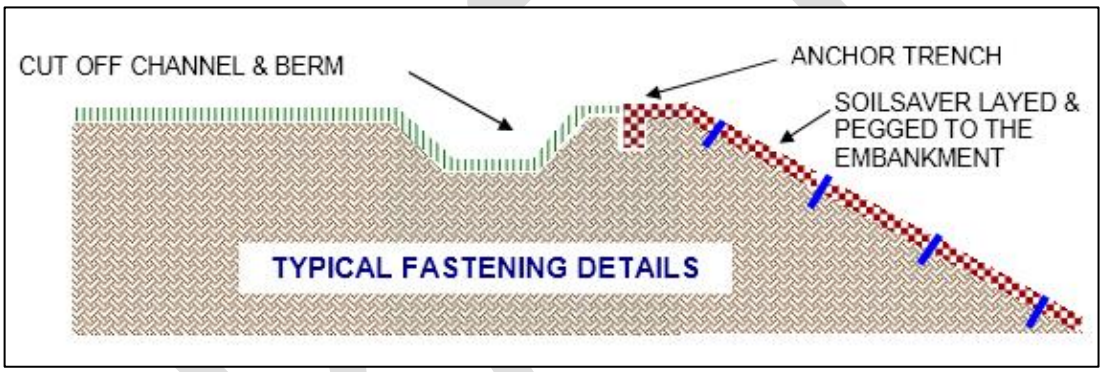


Figure 9: Erosion control textile (Source: Kaytech SoilSaver ©)

3.2.2.3. Borehole capping

Drill holes must be permanently capped as soon as is practicable. Figure 10 below provides the prepared procedure for the secure plugging of exploration drill holes.

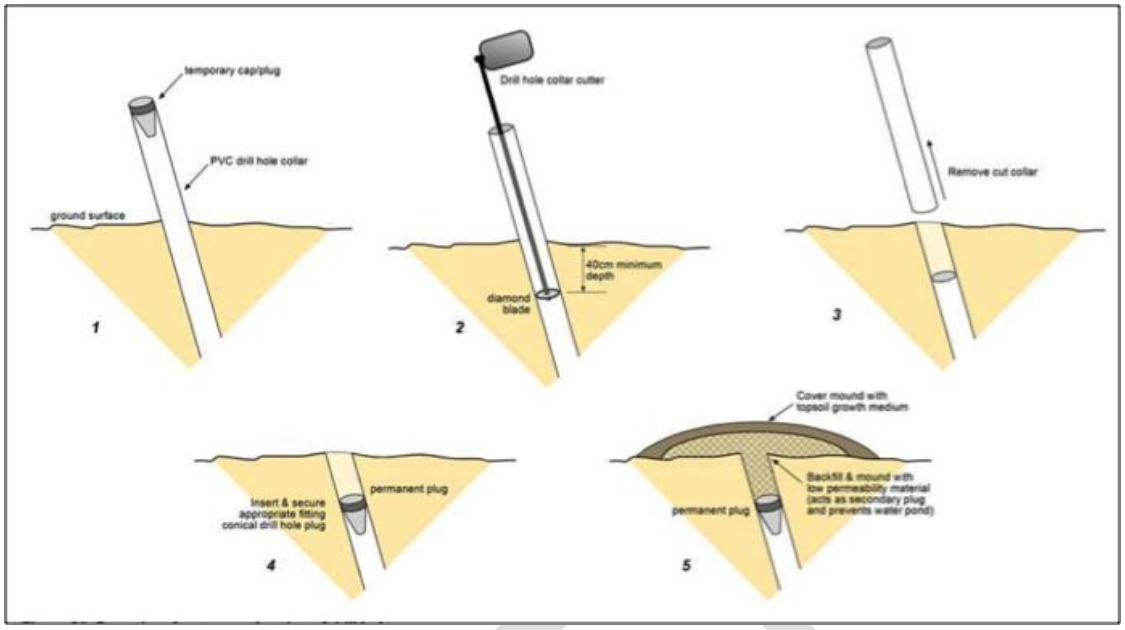


Figure 10: Borehole capping (Source: Department of Mines and Petroleum, DRAFT Guidelines for Environmentally Responsible Mineral Exploration & Prospecting in Western Australia, March 2012)

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. 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.

3.2.2.5.1. 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.

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.

3.2.2.5.2. 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

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

3.2.2.5.3. 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 20: Significance Rating after Mitigation

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
Phase II: Airborne geophysics	N/A	Airborne geophysics survey	Noise impacts resulting from site fly-overs affecting game farm animals and nuisance noise impacts on communities and landowners and other persons	7	2	1	2	2	7
Phase II: Soil sampling	Construction	No construction or site establishment activities will be undertaken	No anticipated impacts						
	Operation	Site access	Destruction and / or disturbance of on-site fauna and flora.	6	1	1	1	2	5
			Vehicle traffic noise impact affecting game farm animals	6	1	1	1	1	4
		30kg of soil per sample	Soil disturbance from soil sampling resulting in soil erosion.	6	1	2	1	1	5
	Decommissioning	No decommissioning activities will be required	No anticipated impacts						
Phase II: Diamond drilling	Construction	Site Access	Destruction and / or disturbance of on-site fauna and flora	10	1	1	3	1	6
			Soil compaction resulting from repeated use of access roads to drill sites	8	1	1	2	1	5

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
			Vehicle traffic noise impact affecting wildlife game farm animals	6	1	1	1	1	4
		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*	Destruction and / or disturbance of on-site fauna and flora	10	1	1	3	2	7
			Destruction and / or disturbance of IBA habitat and avifauna	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*					
			Soil disturbance and topsoil stockpiling resulting in soil erosion.	11	1	1	3	2	7
			Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust)	10	1	1	3	1	6
			Visual Impact affecting visual character and "sense of place"	6	2	1	1	1	5
			Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	8	2	1	1	3	7

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
	Operation	Exploration drilling and core sample collection and storage including: (a) *Diamond 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*	Water and soil pollution resulting from disposal of drill fluids	12	1	1	2	1	5
			Continued soil erosion from topsoil stockpile and drill pad platform.	11	1	1	3	2	7
			Potential water and soil pollution resulting from hydrocarbon spills, drill maintenance activities and waste disposal	12	1	1	2	1	5
			Dust emissions from drilling and general site activities (including vehicle entrained dust)	10	1	1	3	1	6
			Visual Impact affecting visual character and "sense of place"	6	2	1	1	1	5
			Vehicle traffic and drill noise impact affecting game farm animals	6	1	1	1	1	4
			Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	8	2	1	1	3	7
	Decommissioning	Removal of temporary infrastructure including: (a) *Removal of temporary site office shaded area, potable*	Destruction and / or disturbance of on-site fauna	6	1	1	1	1	4
			Dust emissions from decommissioning activities (including vehicle entrained dust).	10	1	1	3	1	6

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
		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*	Potential water and soil pollution resulting from hydrocarbon spills and waste disposal	12	2	1	2	2	7
			Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	11	1	1	3	2	7
Phase 3: Bulk sampling	Construction	Site Access	Destruction and / or disturbance of on-site fauna and flora.	10	1	2	4	2	9
			Destruction and / or disturbance of IBA habitat and avifauna	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*						
			Soil compaction resulting from repeated use of access roads to bulk sample site.	8	1	1	2	1	5
		Site establishment including: *(a) Vegetation clearing of sample pit area*	Destruction and / or disturbance of on-site fauna and flora.	10	1	1	3	2	7
			Destruction and / or disturbance of IBA habitat and avifauna	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be*					

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
		(b) Topsoil stripping and subsoil excavation and stockpiling *(c) Erection of temporary site office, portable ablution faculties and water storage tank* *(d) Erection of fuel storage tank* *(e) Waste generation and management*		*mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*					
			Soil disturbance and topsoil and subsoil stockpiling resulting in soil erosion.	11	1	1	3	2	7
			Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	10	1	1	3	1	6
			Visual Impact affecting visual character and "sense of place"	6	2	1	1	1	5
			Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	8	2	1	1	3	7
	Operation	Hard-rock sampling will be drilled and blasted using conventional open pit drilling equipment and explosives including: *(a) Drilling and blasting* *(b) Hard rock excavation and transportation* *(c) Vehicle maintenance and re-fuelling* *(d) Waste generation and management*	Destruction and / or disturbance of on-site fauna and flora	9	1	1	3	2	7
			Destruction and / or disturbance of IBA habitat and avifauna	*In the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.* *This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.*					
			Dust emission resulting from excavation and blasting activities (including vehicle entrained dust).	11	2	1	3	2	8

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
			Continued soil compaction resulting from repeated use of access roads to bulk sample site.	9	1	1	3	2	7
			Continued soil erosion from soil stockpiles and other cleared areas.	11	1	1	3	2	7
			Potential water and soil pollution resulting from hydrocarbon spills, use of explosives and waste disposal	12	1	1	2	2	6
			Vehicle traffic and blasting noise impact affecting game farm animals and resulting in nuisance impacts affecting adjacent landowners	10	2	1	3	2	8
			Visual Impact affecting visual character and "sense of place"	6	2	1	1	1	5
			Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime	8	2	1	1	3	7
	Decommissioning	Removal of temporary site office, potable ablution faculties and water storage tanks	Dust emissions from decommissioning activities (including vehicle entrained dust)	11	2	1	3	2	8
			Potential water and soil pollution resulting from hydrocarbon spills	12	1	1	3	2	7

Phase		Activities	Potential Impacts	Significance before Mitigation	Extent	Duration	Probability	Intensity	Significance after Mitigation
		Sample pit backfilling	Dust emissions from decommissioning activities (including vehicle entrained dust)	10	2	1	3	2	8
			Potential water and soil pollution resulting from hydrocarbon spills and waste disposal	12	1	1	3	2	7
		Site rehabilitation including: *(d) Ripping of compacted areas* *(e) Re-spreading of stockpiled topsoil*	Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established	11	2	1	3	2	8

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 geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling.

If kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential.

Dependant on results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling.

Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution.

The location and extent of soil sampling, possible diamond drilling and bulk sampling 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) and size of a typical bulk sample pit (refer Figure 8) has been included to provide an understanding of the potential scale and significance of these activities.

The quantum calculation is based on the following assumptions:

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

(b) One bulk sampling site will be established and developed in accordance with the hypothetical Bulk Sample Box Cut.

(c) In most instances access roads to drill sites and the bulk sample site will be via the existing roads and tracks an estimated 2,000m^2 of raod 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 prospecting components has been undertaken to establish the potential risks associated therewith.

Table 21: High Level Risk Assessment

Components	Risks				Description
	Safety risk	*Instability*	*Pollution potential*	*Ecological functionality risks*	
Phase II: Diamond Drilling					
Access Roads and Tracks				X	Ground disturbance resulting in the transformation of the natural environment and an increased risk of soil erosion
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 and an increased risk of soil erosion The removal of temporary fuel storage tanks, 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 and an increased risk of soil erosion
Phase III: Bulk Sampling					
Access Roads and Tracks				X	Ground disturbance resulting in the transformation of the natural environment and an increased risk of soil erosion
Bulk Sample Pit	X	X		X	The sample pit pose a risk to fauna Ground disturbance resulting in the transformation of the natural environment and an increased risk of soil erosion Water ponding on the location of the backfilled pit may cause subsidence
Temporary Infrastructure			X	X	Ground disturbance resulting in the transformation of the natural environment and an increased risk of soil erosion The removal of temporary fuel storage tanks, oil and lubricants as well as portable toilets may result in spills causing pollution

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 sand areas are to be ripped.

(e) Once all structures have been removed from the site, the area is to be contoured to be free draining and is 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 and sample pit

(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 sample pit will be backfilled with suitable material sources off site. Borrow pits to source such material will not be established on-site. The area is to be lined with subsoils, followed with the laying down of topsoil.

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

(d) 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 22: Environmental Rehabilitation for Closure Quantum Calculation

#	Description	Unit	A	B	C	D	E
			Quantity	Master rate	Multi-plication factor	Weigh-ting 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	2000	R27.08	1	1.1	R59 576.00
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	37500	R5.00*	1	1	R187 500.00
7	Sealing of shafts, adits and inclines	m^3		R81.28	1	1.1	R0.00

#	Description	Unit	A	B	C	D	E
			Quantity	Master rate	Multi-plication factor	Weigh-ting factor 1	E = A x B x C x D (in ZAR)
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	0.9	R83 836.41	1	1.1	R82 998.05
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	0.9	R11 156.92	1	1.1	R11 045.35
15 (a)	Specialist study (specify if required)	Sum					R0.00
15 (b)	Specialist study (specify if required)	Sum					R0.00
Sub Total 1							**R341 119.40**
Preliminary and General (12.5% of Subtotal 1)							R42 639.92
Sub Total 2							**R383 759.32**
Contingency (10% of Subtotal 2)							R38 375.93
Sub Total 3 / Grand Total (excluding VAT)							**R422 135.25**
VAT 14%							R59 098.94
GRAND TOTAL (including VAT)							R481 234.19

** Assuming that backfill material will be supplied by the Sedibeng Mine at no charge*

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 23 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.

Monitoring requirements for activities within the IBA has not been determined. In the event that activities is undertaken within close proximity (100m) or within the identified IBA an

avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements.

Post closure monitoring requirements are outlined in Table 24.

Table 23: Monitoring Requirements

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency
Phase I	N/A	N/A	N/A	N/A
Phase II: Airborne geophysics survey	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 Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms.	Prospecting Manager	Once-off upfront consultation with affected parties As required as grievance is received
Phase II: Diamond Drilling	Visual inspection of soil erosion	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
	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 integrity of secondary containment structures and waste management	All secondary containment structure will be inspected on a regular basis to confirm the integrity thereof and to identify potential leaks. All spill incidents will be identified and corrective action taken in accordance with an established spill response	Prospecting Manager Contractor	Daily

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency
		procedure. Waste management practices will be monitored to prevent contamination and littering.		
Phase III: Bulk Sampling	Visual inspection of soil erosion	All exposed areas, access roads, the sample pit area 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
	Dust fallout	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 integrity of secondary containment structures and waste management	All secondary containment structure will be inspected on a regular basis to confirm the 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.	Prospecting Manager Contractor	Daily
Reporting: 1. All monitoring undertaken will be included in a monthly monitoring report				

Phase	Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency
2. Significant Incidents will be reported immediately				

Table 24: Post Closure Monitoring

Programme	Description and Functional Requirements	Roles and Responsibilities	Monitoring Frequency
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 Identify any areas of subsidence (drill holes and backfilled sample pit) and undertake additional backfilling if required.	Prospecting Manager	Monthly for a period of 6 months after rehabilitation activities are concluded
Reporting: Monthly Corrective Action Report and Final Close-Out Report			

5.2. Functional requirements for monitoring programmes

Kindly refer to Table 23

5.3. Roles and responsibilities for the execution of monitoring programmes

Kindly refer to Table 23

5.4. Committed timeframes for monitoring and reporting

Kindly refer to Table 23

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 geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling.

If kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential.

Dependant on results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling.

Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution.

The location and extent of soil sampling, possible diamond drilling and bulk sampling 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) and size of a typical bulk sample pit (refer Figure 8) 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 one the bases 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, sumps and the sample pit 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)

Stakeholders are herewith invited to review and provide feedback on the environmental objectives.

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 (refer Figure 11):

(a) Mammutla: 3.8km towards the north east;

(b) Kameelputs: 6.9km towards the north east, and

(c) Gataote: 7km towards the north east.

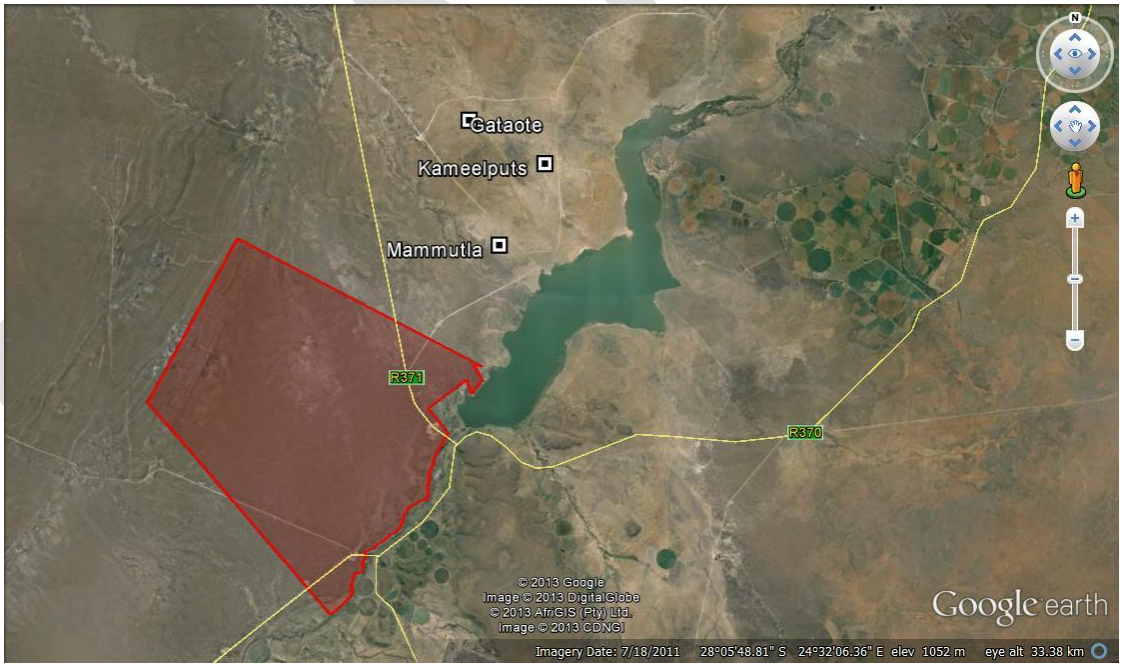


Figure 11: Communities (towns) in close proximity to the proposed prospecting site

These settlements were identified through the use of the 1:50 000 topographical map, aerial imagery and through consultation with the ward councillors of the directly affected and adjacent wards, including:

(a) Mr. K Rifles: Digatlong Ward 6 - Directly Affected Ward, and

(b) Mr. W Potgieter: Magareng Ward 5 - Adjacent Ward.

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 25.

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.

Newspaper Advertisements were placed in the Northern Cape Volksblad and the Khatu Gazette on 13 and 14 September 2013 respectively (refer to Figure 12 and Figure 13) inviting comments by interested and affected parties and calling for registration to be included in the list of stakeholders who will receive a copy of the Environmental Management Plan for review and comment.

Based on the notification of identified stakeholders and in response to the advertisements, stakeholders identified in Table 26 registered to receive, review and comment on the Draft Environmental Management Plan.

Government departments (organs of state) are provided with a copy (via email) of the Environmental Management Plan regardless of registration.

8 14 September / Lwêtse 2013 • KATHU GAZETTE

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KIMBERLEY

Culpable Homicide

A 21 year-old Kimberley man was fatally injured while five other people sustained serious injuries in an accident on Friday 6 September 2013. According to police information the driver of a Fiat Polo, Benita Lotter (19) lost control of her vehicle and crashed into a brick wall in Anderson Road Kimberley. Hilton Kock (19) a back seated passenger died on impact. The other five passengers are still in Kimberley Provincial Hospital and are in a stable condition. Police are investigating a case of culpable homicide.

GAMAGARA LOCAL MUNICIPALITY

NOTICE OF THE RETRACTION OF ADVERTISEMENT

Please let this stand as a formal retraction of the following advertised position:

1 SENIOR TRAFFIC OFFICER

The above-mentioned positions were erroneously published and we as Management of Gamagara Municipality extend our apologies for the inconvenience we may have caused.

Regards

TC ITUMELENG - MUNICIPAL MANAGER
TEL: 053 723 2281
Date: 11/09/2013
Notice no: 56/2013

SAPS

KURUMAN

Head of Visible Policing Reinstated

Victor Mulanglsi

The Head of Visible Policing in Kuruman, Lieutenant Colonel Goitsemodimo Charles Moreeing's suspension has been lifted. His reinstatement comes after an internal investigation into a matter was conducted by Lieutenant Colonel Goosen from Upington. The hearing was held in Kuruman SAPS Boardroom where Colonel Moreeing was represented by Advocate Taolo Mokgwabone. He was suspended early in April this year on allegations of swindling informers' allowances. The lift of the suspension stated that there were no corroborating facts that could convince the tribunal to come to a conclusion of possible prosecution. The legal representative of Colonel Moreeing said that there were no satisfactory reasons to qualify the suspension of his client and ordered the immediate withdrawal of the case. This however, according to sources, does not stop the court proceedings. In most circumstances if the internal adjudication process (employer) has exonerated the suspect it also simplifies dropping of the matter in the courts. Colonel Moreeing expressed his gratitude on the outcome of the adjudication process, saying the allegations were null and void. He also thanked his wife, family members and Pastor Mosepele from Botsabelo from Bloemfontein who supported him during his suspension period.

Lieutenant Colonel Goitsemodimo Charles Moreeing.

Loslitdag Vieringe Gaan Groot!

Berig op bladsy 1

Nog foto's op bladsye 16 en 17

Capitec, Shoprite Sentrum Kathu lyk alle vrolik op Loslitdag. Foto: Hettie du Plessis

Mary Potso & Florence Mokhosi of Legit in Kathu. Photo: Chantal Schroeder

Christopher Abrahams of Musica in Kathu had the vibe, too. Photo: Chantal Schroeder

Die personeel van Kuruman Landboudiensle lyk sgylvol in rooi uitrustings en pruike. Foto: Hettie du Plessis

The staff of Edgars in Kathu Village Mall are Keolebogile Maroro in front and Vivian Mashome, Keobakile Magabe, Madhogonolo Moiswadira & Audrey Henricks at the back. Photo: Chantal Schroeder

PetraDiamonds

Finsch Diamond Mine (Pty) Ltd (owned by Petra Diamonds) submitted an application for the prospecting of diamonds (alluvial and kimberlite) in terms of Sections 16 of the Mineral and Petroleum Resources Development Act 28 of 2002 ("MPRDA" or "the Act"). The Prospecting Right Application is in respect of farms in the Barkly West District, Northern Cape. The farms being applied for include Farm 87 and Farm 88.

The applicant is now required to prepare and submit an Environmental Management Plan and undertake Stakeholder Consultation in accordance with the Act.

Interested and Affected Parties (Stakeholders) are invited to submit written comments, issues and concerns regarding the expected impacts of the planned prospecting activities to:

Lizelle Prosch
Cell: 082 804 4024
Email: barkly.west@lizelleproschconsulting.com
Fax: 086 718 1895

For additional background information and / or to register to review the Environmental Management Plan please contact Lizelle Prosch via the contact details provided.

Comments, issues and concerns must be submitted on or before 4 October 2013.

Registration to review the Environmental Management Plan must be submitted by 23 September 2013. The review period for the Environmental Management Plan will be communicated to all parties who registered.

Figure 12: Newspaper Advertisement in the Khatu Gazette


Vrydag 13 September 2013 Volksblad

Geklassifiseerd 3

111 Betrekkings aangebied

100 Te koop: meenthuise

101 Te koop: plase

103 Te koop: woonstelle

108 Kuselendomme

109 Besigheids-geleenthede

110 Betrekkings gevra

J: AMPTELIK

120 Amptelike kennisgewings

Petra Diamonds

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 resource development act 28 of 2002 (MPRDA/or 'the act'). The Prospecting Right Application is in respect of farms in the Barkly West District, Northern Cape. The farms being applied for include farm 87 and farm 88. The application is now required to prepare and submit an Environmental Management Plan and undertake stakeholder consultation in accordance with the act. The applicant is now required to prepare and submit an Environmental Management Plan and undertake stakeholder consultation in accordance with the act. Interested and Affected Parties (stakeholders) are invited to submit written comments, issues and concerns regarding the expected impacts of the planned prospecting activities to Lizelle Prosch, cell 082 804 4084 E-mail barklywest@lizelleproschconsulting.com Fax 086 718 1635 for additional background information and/or to register to review the Environmental Management Plan, please contact Lizelle Prosch via the contact details provided. Comments, issues and concerns must be submitted on or before 4 October 2013. Registration to review the Environmental Management Plan will be be communi-cated to all parties who registered.

121 Regs-kennisgewings

122 Boedels

Volksblad NUUS MET MENING

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Aanbod nie geldig vir sake-ondernemings nie.

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Figure 13: Newspaper Advertisement in the Volksblad

Table 25: Identified Stakeholders

Organisation	Contact Person	Designation	Relation	Postal address	Physical address
Frances Baard District Municipality	Mr Kenneth Lucas	Environmental Health Manager	Affected District Municipality	TBD	TBD
	Ms Mamikie Bogatsu Contact: Segametsi Mocumi(PA) New contact: Natasha April	Municipal Manager's Office			
	Mr Frank Mdee (Head of Department) Contact: Cathy Hoffmann (Secretary)	Department Planning and Development			
Dikgatlong Local Municipality	Mr Robertson	Municipal Manager	Affected Local Municipality	Private Bag X5, Barkly West, 8375	33 Cambell Street, Barkly West
Dikgatlong Ward 6	Mr Kagisho Rifles	Ward Councillor	Affected Ward	TBD	TBD
Magareng Local Municipality	Mr JTS Leeuw Correspond: Tshego Moshane	Municipal Manager	Adjacent Municipality	PO Box 10, Warrenton, 8530	Magrieta Prinsloo Street Warrenton
Magareng Ward 5	Mr Willem Johannes Potgieter	Ward Councillor	Adjacent Affected Ward	TBD	TBD
Phokwane Ward 6	Mr Petro Johan Nel	Ward Councillor	Adjacent Affected Ward	TBD	TBD
Dr Ruth Segomotsi Mompati District Municipality	Mr Zebo Tshetlho Correspond with: Ms Tlhogi Keoagile	Municipal Manager	Adjacent District Municipality	PO Box 21, Vryburg, 8600	21 De Kock Street, Vryburg
Northern Cape Department of Water Affairs	Mr A Abrahams	Chief Director	Affected Provincial Department	Private Bag X6101 Kimberley 8300	TBD
	Ms Nosie Mazwi	Official	Affected Provincial Department	Private Bag X6101 Kimberley 8301	TBD
Northern Cape Department of Environment and Nature Conservation	Mr Thato Molese	Official	Affected Provincial Department	Private Bag X6102 Kimberley 8301	Sasko Building Long Street 90 Kimberley
Northern Cape Department of Labour	Mr Jonathan Mpahlele	TBD	Affected Provincial Department	Private Bag X 5012 Kimberley 8300	Cnr Compound and Pniel Road Kimberley

Organisation	Contact Person	Designation	Relation	Postal address	Physical address
Northern Cape Department of Rural Development and Land Reform	Mr Ryan Oliver	Official	Affected Provincial Department	TBD	TBD
Northern Cape Department of Agriculture	Dr. Phemelo Kegakilwe Acting Chief Director - Northern Cape - Kimberley	Provincial Chief Director	Affected Provincial Department	Private Bag X5018 Kimberley 8300	162 George Street, Kimberley 8301
Northern Cape - South African Heritage Resources Agency	Ms Kathryn Smuts	Official	Affected Agency	P.O. Box 4637 CAPE TOWN 8000	111 Harrington Street CAPE TOWN 8001
National government of the Republic of South Africa	Northern Cape Department of Rural Development and Land Reform Ms Kele Majila Mr TP Motete	Farms 88, 87, 54, 86, Pienaarsfontein 55	Landowner	TBD	TBD
Landowner	Mr Christoffel Andreas Smit	Farm 351 Mount Rupert	Adjacent Landowner	Po Box 912, Jan Kempdorp, 8550	Plot 6, Windsorton 8510
Landowner	Ms Kele Majila Mr TP Motete	Portion 1 of Farm 88, Portion 1 of Farm 54, Portion 3 of Farm 92	Adjacent Landowner	TBD	TBD
Landowner	Mr Daniel Johannes Swan	Portion 3 of Farm 91	Adjacent Farmowner	Po Box 135, Barkly West, 8375 / Po Box 1325, Barkly West, 8375	TBD
Landowner	Two Cousins Trust	Portion 11 of Farm 91	Adjacent Landowner	TBD	TBD
Landowner	Hogan Familie Trust	Portion 17 of Farm 91	Adjacent Landowner	TBD	TBD
Landowner	Henk Vorster Familie Trust	Portion 18 of Farm 91, Portion 19 of Farm 91	Adjacent Landowner	TBD	TBD
Landowner	Mr van der Merwe (and Sons)	Portions 4 ,5 ,6, 7, 16, 20, 21, 23, and 25 of the Farm 91 also including New Hope Trust Portion 8 of the Farm 91	Adjacent Landowner	TBD	TBD

Organisation	Contact Person	Designation	Relation	Postal address	Physical address
Landowner	Mr Fourie	Portion 6 of Farm 106 Farm 150	Regional Landowner	TBD	TBD
Landowner	Mr Daniel Johannes Tolmay	Portion 24 of Farm 91	Adjacent Landowner	Po Box 479 Christiana 2680	33C Harrison Street Doorn 9459
Landowner	Mr Johannes Zacheus George Botes	Portion 10 of Farm 91	Adjacent Landowner	Po Box 110441 Kimberley 8300	1 Doornlaagte Barkly West Hopetown 8375
Berg Landbou - vereniging	Mr Kobus Ludwick	Chairman	Affected Farmers	TBD	TBD
Northern Cape Tourism Association	N/A	N/A	Affected Association	Private Bag X5017, Kimberley, 8300	Tourism House, 14 Dalham Road, Belgravia, Kimberley, 8301
Mattanu Private Game Reserve	Mr Jacques Kriek	Owner	Affected Business Owner	TBD	3 Boschendal Ave Barkly West 8301
Vaalharts District Agricultural Union	Mr Pieter van Niekerk	Chairman	Vaalharts Farmers Union Represen-tative	TBD	TBD
Private Person	Ms Tania Anderson	Private Person	Associated with BirdLife SA	TBD	239 Barkston Drive, Blairgowrie, 2194
BirdLife SA	Mr Dale Wright	Western Cape Representative	Non-governmental Organisation	P O Box 515, Randburg, 2125	Lewis House, 239 Barkston Drive, Blairgowrie, 2194
	Ms Carolyn Ah Shene-Verdoorn	Policy & Advocacy Manager	Non-governmental Organisation		
Private Person	Mr Lucky Mngomezulu	Private Person	TBD	TBD	TBD

Table 26: Registered Stakeholders

Dikgatlong Ward 6	Mr Kagisho Rifles	Ward Councillor	Affected Ward	TBD	TBD
Magareng Ward 5	Mr Willem Johannes Potgieter	Ward Councillor	Adjacent Affected Ward	TBD	TBD
Landowner	Henk Vorster Familie Trust	Portion 18 of Farm 91, Portion 19 of Farm 91	Adjacent Landowner	TBD	TBD
Landowner	Mr van der Merwe (and Sons)	Portions 4 ,5 ,6, 7, 16, 20, 21, 23, and 25 of the Farm 91 also including New Hope Trust Portion 8 of the Farm 91	Adjacent Farm Owner	TBD	TBD
Landowner	Mr Fourie	Portion 6 of Farm 106 Farm 150	Regional Farm Owner	TBD	TBD
Landowner	Mr Johannes Zacheus George Botes	Portion 10 of Farm 91	Adjacent Farm Owner	Po Box 110441 Kimberley 8300	1 Doornlaagte Barkly West Hopetown 8375
Private Person	Ms Tania Anderson	Private Person	Associated with BirdLife SA	TBD	239 Barkston Drive, Blairgowrie, 2194
BirdLife SA	Ms Carolyn Ah Shene-Verdoorn	Policy & Advocacy Manager	Non-governmental Organisation	P O Box 515, Randburg, 2125	Lewis House, 239 Barkston Drive, Blairgowrie, 2194
Private Person	Mr Lucky Mngomezulu	Private Person	TBD	TBD	TBD

7.2. The details of the engagement process

Table 27 provides a detailed account of the activities and the associated timeframes of the stakeholder consultation process.

Table 27: Details of the Stakeholder Engagement Process

Date	Activity	Description
12 to 14 August 2013	Identification of Stakeholders and Interested and Affected Parties	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. Other interested and affected parties identified included 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 / or private persons.
15 & 16 August 2013	Distribution of the Background Information Document	All identified stakeholders were provided with a Background Information Document which included a description of the stakeholder consultation process, an overview of the planned prospecting activities as well as a description and map of the proposed prospecting area.
21 August 2013	Distribution of the Overview of the Socio-Economic and Environmental Conditions Report	All identified stakeholders were provided with an Overview of the Socio-Economic and Environmental Conditions Report for review and comment.
27 & 28 August 2013	Key Stakeholder Meetings	On request for stakeholder registration, only seven (7) stakeholders registered to attend a meeting. Based on this limited interest it was agreed that individual key stakeholder meeting would be held at venues most convenient to these persons. Registered stakeholders with whom meetings were held include: (a) Mr van der Merwe and Sons (Adjacent Land Owner): Meeting held at residence; (b) Mr Fourie (Land Owner): Meeting held on farm; (c) Mr Rifles (Dikgatlong Ward 6, Councillor): Meeting held at the Rooikoppies Community Hall; and (d) Mr Potgieter (Magareng Ward 5, Councillor): Meeting held at residence in Warrenton. Other registered stakeholders with whom meetings were not held include: (a) Mr Botes (Adjacent Landowner): Mr Botes was not available for a meeting and it was agreed that further telephonic discussion will suffice. (b) BirdLifeSA, Ms Shene-Verdoorn (Non-Governmental Organisation): The request to meet was not acknowledged. Ms Shene-Verdoorn is based in Johannesburg and it is expected that a key stakeholder meeting might be requested at a later date. (c) Ms Anderson (Private Person): Submitted initial comments via email and stated that a meeting might be requested after review of the Environmental Management Plan. (d) Mr Vorster could not be contacted before the planned dates for key stakeholder meetings. His contact details were not available on the title deed search nor the natural persons contact details database, and he could not be located during the days of the site visit and key stakeholder meetings were held. Based on information provided by other landowners in the area, he was

Date	Activity	Description
		subsequently reached on 30 August 2013. He agreed that his verbal telephonic comments can be included and that further discussion would be required as he is not in agreement with the planned prospecting activities.
3 September 2013	Distribution of comments and notes of stakeholder meetings	The minutes of the meetings were distributed to all registered interested and affected parties for review and comment.
13 September 2013	Placement of Newspaper Advertisements	Newspaper Advertisements were placed in the Northern Cape Volksblad and the Khatu Gazette on 13 and 14 September 2013 respectively and invited comments by interested and affected parties and called for registration to be included in the list of stakeholders who will receive a copy of the Environmental Management Plan for review and comment.
27 September 2013	Distribution of the Draft Environmental Management Plan	The Draft Environmental Management is provided to all registered stakeholders for a review and comments. The comments must be submitted by 10 October 2013.

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

The following documents were made available for review and 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 A).

(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 B).

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

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

All identified stakeholder were informed and provided with a Background Information Document and the Overview of the Socio-Economic and Environmental Conditions Report. A limited number of stakeholders chose to participate in the process.

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

All comments received to date are included in Table 28 below.

Table 28: List of comments received from Stakeholder

#	Summary of Comments by Stakeholders
Ms Tania Anderson – Email - 18 August 2013 (Comment on Behalf of BirdLife SA)	
1.	Part of the farm identified for prospecting falls within an Important Bird Area (IBA). Mining is not an appropriate activity within an IBA which is there for the conservation of important habitat of threatened, range restricted and other protected bird species.
2.	Based on the review of the Environmental Management Plan will provide further comments.
Mr van der Merwe and Sons (Adjacent Land Owner): Meeting - 27 August 2013	

#	Summary of Comments by Stakeholders
1.	Prospecting activities has been undertaken on various farm portions in the area, including farm portion owned by Van der Merwe and Sons.
2.	High unemployment rates (also specifically including workers retrenched from mothballed and/or closed mining operations) has resulted in high crime related to theft.
3.	Water quality in the Harts River is imposing limitation of the crops that can be cultivated on farms dependent on this water resource.
4.	Other land portion owned by Mr van der Merwe has been subject to prospecting activities and typical issues include negligence such as leaving farm gates open which compromises security.
5.	Mining companies do not fulfil their obligations in terms of land rehabilitation.
Mr Fourie (Regional Land Owner): Meeting - 27 August 2013	
1.	Confirmed that prospecting have been undertaken on land portions owned by him. Some of this information could possibly be made available to Petra Diamonds.
2.	Farm portion is not directly adjacent to the proposed prospecting area but would like to be kept informed of development.
Mr Potgieter (Magareng Ward 5, Councillor) – Meeting - 27 August 2013	
1.	Clarified that Farms 87 & 88 is in relative close proximity to the Communal Property Association (CPA) owned land which is located towards the east of the Spitskop Dam.
2.	New employment opportunities would be beneficial to the communities located in the region. High employments rates are prevalent.
3.	Would like to be kept informed.
Mr Rifles (Ward Councillor of Affected Ward): Meeting - 28 August 2013	
1.	Confirmed that information will be provided to the communities at a community meeting to be held on the 29th of August 2013.
2.	The communities in Magareng has been benefiting from mining related job opportunities in which falls within Dikgatlong. Any future mine development within the municipality should be to the benefit of the communities within Dikgatlong.
3.	The unemployment rate in Dikgatlong is exceptionally high.
Mr Vorster (Adjacent Land Owner) – Telephonic Discussion: 30 September 2013	
1.	Mr Vorster is strongly opposed to any prospecting and mining activities in proximity to his farm due to the increased crime rate associated with the influx of people resulting from such operations.
2.	The prospecting and mining activities will result in visual impacts that will negatively affect the quality of the experience of visitors to his game farm.
3.	The accommodation of persons on the planned prospecting site as well as the prospecting activities is undesirable.
4.	Stated that the prospecting activities and the associated activities will further negatively impact on the water quality of the Harts River which is already of poor quality and impose further limits on the use of this water resource for farming purposes.
5.	Requested further discussion regarding the application.
Ms Shene-Verdoorn (BirdLife SA - Policy & Advocacy Manager) – Email Correspondence: 6 September 2013	
1.	We note that our initial comments have been included in the record of comments of 2 September 2013.
2.	Our major concern is that part of the farm identified for prospecting falls within an Important Bird & Biodiversity Area (IBA). Mining is not an appropriate activity within an IBA which is there for the conservation of important habitat of threatened, range restricted and other bird species.

#	Summary of Comments by Stakeholders
3.	We look forward to receiving the EMP and commenting thereon, including more detail on possible impacts as well as an ecological specialist study/avifauna specialist study which will hopefully also address the IBA issue mentioned above.
4.	The north-east section of the proposed prospecting study area falls within the south-west section of the Spitskop Dam IBA. This IBA is important for the conservation of significant numbers of waterbirds in this arid region, which include Greater and Lesser Flamingo, Pink-backed Pelican, Little Grebe, Cape Shoveler, White-winged Tern, South African Shelduck, Little Stint and other waders. Over 27 000 waterbirds have been recorded at Spitskop Dam during waterbird counts, including over 5 000 Lesser Flamingos, one of the threatened species recorded at Spitskop. It is an important moulting site for Egyptian Goose, Spur-winged Goose and South African Shelduck. During this period they are vulnerable and sensitive to disturbance, as are many of the other waterbird species present at Spitskop Dam.
5.	It is not clear whether an ecological specialist study has been done or will be done to inform the EMP for this project, which will be submitted on 13 October 2013. If such a study is not part of this prospecting right application, such a study is required due to the sensitivity of the environment before any drilling (phase 2) and bulk sampling (phase 3) activities take place on farm 88.
6.	It cannot be assumed that because prospecting activities often do not have a significant impact on avifaunal habitat, that this is the case in the Spitskop Dam IBA and the sensitive habitat of the Harts River corridor (possibly a Critical Biodiversity Area or Ecological Support Area). The RoD and EMP should include a condition that an ecological specialist study must be done before phase 2 and 3 can proceed, should the phase 1 findings reveal deposits that require further exploration. The alternative is to exclude the section of the study area that falls within the IBA from all prospecting activities.
7.	We are aware that often rehabilitation after prospecting is not adequately done and enforcement of compliance with the EMP is lacking in the Northern Cape. What assurances will be provided, besides the generic rehabilitation objectives in the EMP and necessary financial guarantees, that rehabilitation will be undertaken to restore the affected areas to their pre-prospecting state? Inadequate rehabilitation of drainage lines and catchment areas could influence water flow and could also result in pollutants ending up in the wetlands, including the dam and Harts River.

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 28

7.2.5. Other concerns raised by the aforesaid parties

Kindly refer to Table 28

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

Refer to Addendum C

7.2.7. Information regarding objections received

Kindly refer to Table 28

7.3. The manner in which the issues raised were addressed

Responses to all comments received are included in Table 29.

Table 29: Responses to Stakeholder Comments Received

#	Summary of Comments by Stakeholders	Response
Ms Tania Anderson – Email - 18 August 2013 (Comment on Behalf of BirdLife SA)		

#	Summary of Comments by Stakeholders	Response
1.	Part of the farm identified for prospecting falls within an Important Bird Area (IBA). Mining is not an appropriate activity within an IBA which is there for the conservation of important habitat of threatened, range restricted and other protected bird species.	The feasibility of the mine has not yet been established. Appropriate mitigation regarding the protection of avifauna and avifaunal habitat must be implemented. It should be noted that, 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 geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling. If kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential. Dependant on results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling. Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution. The location and extent of soil sampling, possible diamond drilling and bulk sampling can therefore not be determined at this stage. As part of the Environmental Management Plan a provision has been made that in the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements. This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources. Prospecting activities are regarded to have a relatively insignificant impact on avifaunal habitat. To address cumulative impacts of the industry, rehabilitation objectives to restore disturbed areas to its natural state as far as are practicable before disturbance must be achieved.
2.	Based on the review of the Environmental Management Plan will provide further comments.	The Environmental Management Plan will be made available for review.
Mr van der Merwe and Sons (Adjacent Land Owner): Meeting - 27 August 2013		

#	Summary of Comments by Stakeholders	Response
1.	Prospecting activities has been undertaken on various farm portions in the area, including farm portion owned by Van der Merwe and Sons.	No response.
2.	High unemployment rates (also specifically including workers retrenched from mothballed and/or closed mining operations) has resulted in high crime related to theft.	It is not anticipated that the prospecting activities will attract unemployed persons seeking employment to the site. Management measures to ensure site security (as to not incentivise persons to travel to the site to look for employment) has been included must be implemented.
3.	Water quality in the Harts River is imposing limitation of the crops that can be cultivated on farms dependent on this water resource.	Mitigation measures to manage any potential water quality impact must be implemented. Management measures provided relates to the potential contamination of surface water and groundwater resulting from leaching of hazardous substances from construction equipment and storage areas, waste management, soil erosion, domestic and sewage effluent disposal, hydrocarbon contamination and fluids discharged during drilling.
4.	Other land portion owned by Mr van der Merwe has been subject to prospecting activities and typical issues include negligence such as leaving farm gates open which compromises security.	No response.
5.	Mining companies do not fulfil their obligations in terms of land rehabilitation.	Rehabilitation objectives must be achieved and financial guarantees in this regard must be provided.
Mr Fourie (Regional Land Owner): Meeting - 27 August 2013		
1.	Confirmed that prospecting have been undertaken on land portions owned by him. Some of this information could possibly be made available to Petra Diamonds.	With thanks, the available information will be sourced and reviewed.
2.	Farm portion is not directly adjacent to the proposed prospecting area but would like to be kept informed of development.	To be kept informed.
Mr Potgieter (Magareng Ward 5, Councillor) – Meeting - 27 August 2013		
1.	Clarified that Farms 87 & 88 is in relative close proximity to the Communal Property Association (CPA) owned land which is located towards the east of the Spitskop Dam.	Noted.
2.	New employment opportunities would be beneficial to the communities located in the region. High employments rates are prevalent.	Noted.
3.	Would like to be kept informed.	To be kept informed.
Mr Rifles (Ward Councillor of Affected Ward): Meeting - 28 August 2013		
1.	Confirmed that information will be provided to the communities at a community meeting to be held on the 29th of August 2013.	With thanks. Noted.
2.	The communities in Magareng has been benefiting from mining related job	Noted. Opportunities for employment are severely limited during the prospecting

#	Summary of Comments by Stakeholders	Response
	opportunities in which falls within Dikgatlong (specifically Sedibeng Mine). Any future mine development within the municipality should be to the benefit of the communities within Dikgatlong.	phase. In the event that a viable reserve is determined and that a mining right is applied for and approved, this comment must be considered. The comment has been passed on to Petra Diamonds.
3.	The unemployment rate in Dikgatlong is exceptionally high.	Noted.
Mr Vorster (Adjacent Land Owner) – Telephonic Discussion: 30 September 2013		
1.	Mr Vorster is strongly opposed to any prospecting and mining activities in proximity to his farm due to the increased crime rate associated with the influx of people resulting from such operations.	Noted. It is not anticipated that the prospecting activities will attract unemployed persons seeking employment to the site. Management measures to ensure site security (as to not incentivise persons to travel to the site to look for employment) has been provided and must be implemented.
2.	The prospecting and mining activities will result in visual impacts that will negatively affect the quality of the experience of visitors to his game farm.	The visual impact of the prospecting operations will be temporary and short-term. Mitigation measures to manage impacts must be implemented. This includes the management of visible dust emissions, limiting the extent of activities on site (no accommodation will be provided on site) and the visibility of the operation though the consideration of infrastructure colours.
3.	The accommodation of persons on the planned prospecting site as well as the prospecting activities is undesirable.	Accommodation will be provided in nearby towns and no persons (apart from security personnel) will be allowed to stay on site.
4.	Stated that the prospecting activities and the associated activities will further negatively impact on the water quality of the Harts River which is already of poor quality and impose further limits on the use of this water resource for farming purposes.	Mitigation measures to manage any potential water quality impact must be implemented. Management measures related to the potential contamination of surface water and groundwater resulting from leaching of hazardous substances from construction equipment and storage areas, waste management, soil erosion, domestic and sewage effluent disposal, hydrocarbon contamination and fluids discharged during drilling.
5.	Requested further discussion regarding the application.	The Environmental Management Plan will be made available for review and further discussion will be held.
Ms Shene-Verdoorn (BirdLife SA - Policy & Advocacy Manager) – Email Correspondence: 6 September 2013		
1.	We note that our initial comments have been included in the record of comments of 2 September 2013.	Noted.
2.	Our major concern is that part of the farm identified for prospecting falls within an Important Bird & Biodiversity Area (IBA). Mining is not an appropriate activity within an IBA which is there for the conservation of important habitat of threatened, range restricted and other bird species.	Noted.
3.	We look forward to receiving the EMP and commenting thereon, including more detail on	The Environmental Management Plan will be made available for review and further

#	Summary of Comments by Stakeholders	Response
	possible impacts as well as an ecological specialist study/avifauna specialist study which will hopefully also address the IBA issue mentioned above.	discussion will be held.
4.	The north-east section of the proposed prospecting study area falls within the south-west section of the Spitskop Dam IBA. This IBA is important for the conservation of significant numbers of waterbirds in this arid region, which include Greater and Lesser Flamingo, Pink-backed Pelican, Little Grebe, Cape Shoveler, White-winged Tern, South African Shelduck, Little Stint and other waders. Over 27 000 waterbirds have been recorded at Spitskop Dam during waterbird counts, including over 5 000 Lesser Flamingos, one of the threatened species recorded at Spitskop. It is an important moulting site for Egyptian Goose, Spur-winged Goose and South African Shelduck. During this period they are vulnerable and sensitive to disturbance, as are many of the other waterbird species present at Spitskop Dam.	With thanks. The information has been included in the description of the receiving environment.
5.	It is not clear whether an ecological specialist study has been done or will be done to inform the EMP for this project, which will be submitted on 13 October 2013. If such a study is not part of this prospecting right application, such a study is required due to the sensitivity of the environment before any drilling (phase 2) and bulk sampling (phase 3) activities take place on farm 88.	An avifaunal and ecological study has not been undertaken as part of the development of the Environmental Management Plan. Appropriate mitigation regarding the protection of avifauna and avifaunal habitat must be implemented. It should be noted that, 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 geophysics survey and/or loam sampling programme will be initiated. Targets that have been prioritized through detailed anomaly-specific loam sampling and ground geophysics will be tested by initial diamond drilling. If kimberlite is intersected, one or more 10kg samples will be taken for sampling and the results will be interpreted to assess diamond potential. Dependant on results, further delineation drilling and micro-diamond (MiDA) sampling would be carried out to further define the deposit and give a better indication of grade. Positive results from MiDA would be followed by detailed delineation drilling and geological modelling. Should the deposit indicate a sufficient size and diamond potential from KIM and MiDA sampling to make it potentially economically viable, an appropriate bulk sampling program will be undertaken in order to confirm grade, diamond quality and size frequency distribution. The location and extent of soil sampling, possible diamond drilling and bulk

#	Summary of Comments by Stakeholders	Response
		sampling can therefore not be determined at this stage. As part of the Environmental Management Plan a provision has been made that in the event that activities is undertaken within close proximity (100m) or within the identified IBA an avifaunal and ecological assessment to determine the potential impacts, evaluate whether the identified impacts can be mitigated and establish any monitoring requirements. This will be undertaken in consultation with BirdLife SA and the Department of Mineral Resources.
6.	It cannot be assumed that because prospecting activities often do not have a significant impact on avifaunal habitat, that this is the case in the Spitskop Dam IBA and the sensitive habitat of the Harts River corridor (possibly a Critical Biodiversity Area or Ecological Support Area). The RoD and EMP should include a condition that an ecological specialist study must be done before phase 2 and 3 can proceed, should the phase 1 findings reveal deposits that require further exploration. The alternative is to exclude the section of the study area that falls within the IBA from all prospecting activities.	Kindly refer to the response above.
7.	We are aware that often rehabilitation after prospecting is not adequately done and enforcement of compliance with the EMP is lacking in the Northern Cape. What assurances will be provided, besides the generic rehabilitation objectives in the EMP and necessary financial guarantees, that rehabilitation will be undertaken to restore the affected areas to their pre-prospecting state? Inadequate rehabilitation of drainage lines and catchment areas could influence water flow and could also result in pollutants ending up in the wetlands, including the dam and Harts River.	The rehabilitation of the site is a legal requirement. The comment related to enforcement is however duly noted and regarded as a valid concern. The applicant is committed undertake the required activities to ensure the effective rehabilitation of the site. Recommendations for post-closure monitoring have been provided for to ensure that the rehabilitation efforts are successful. Additional feedback from BirdLife SA on the content of the Environmental Management Plan and the adequacy of measures to ensure effective rehabilitation will be much appreciated.

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 30. The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re-enforced.

Table 30: Environmental Training and Awareness Schedule

Frequency	Time allocation	Objective

Induction (all staff and workers)	1 hour training environmental awareness training as part of site induction	1. Develop an understanding of what is meant by the 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)	30min awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	10min task based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures.

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 30, 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 525 160.00** 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 31. 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 31: 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 which may affect aspects such as hunting activities on game farms.	**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 II: Diamond 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 and bulk sample pit area Five drill sites (area will be identified and developed in accordance with the typical drill pad layout One bulk sampling site will be established and developed in accordance with the hypothetical Bulk Sample Box Cut Access roads to drill sites and the bulk	Year 3: 3 x Drill pads	337.5	17	R 5 737.50	R 1 000.00	12	R 12 000.00
	Phase II: Diamond Drilling			Year 4: 2 x Drill Pads	225	17	R 3 825.00	R 800.00	12	R 9 600.00
	Phase III: Bulk Sampling			Year 5: 1 x Bulk Sample Pit	8000	17	R 136 000.00	R 2 000.00	12	R 24 000.00

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	
			sample site will be via the existing roads and tracks.							
Fire protection	Phase II: Diamond Drilling	An fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire	Five drill sites will be identified and developed in accordance with the typical drill pad layout. One bulk sampling site will be established and developed in accordance with the hypothetical Bulk Sample Box **Costing notes:** Drill pad area of 112.5m^2 Bull sample pit of 0.4ha (increased to 0.8ha to account for site area)	Year 3: 3 x Drill pads	N/A	N/A	R 32 000.00	R 1 000.00	12	R 44 000.00
	Phase II: Diamond Drilling			Year 4: 2 x Drill Pads	N/A	N/A		R 1 000.00	12	R 12 000.00
	Phase III: Bulk Sampling			Year 5: 1 x Bulk Sample Pit	N/A	N/A	R 65 000.00	R 1 000.00	12	R 77 000.00
Additional studies	Phase II and III	In the event that drill site is identified in close proximity (100m) or within the IBA, a avifaunal assessment will be undertaken and additional mitigation measures included in the Environmental Management Plan	**Assumptions:** That sites will be identified within the IBA **Costing notes:** Lump sum for specialist	Year 3	N/A	N/A	R 65 000.00	N/A	N/A	R 65 000.00
Wet dust suppression	Phase II and III	Based on visual observation wet dust	**Assumptions:**	Year 3: 3 x Drill pads and roads	1320	3	N/A	R 3 960.00	12	R 47 520.00

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	
		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	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 4: 2 x Drill Pads and roads	1320	3	N/A	R 3 960.00	12	R 47 520.00
				Year 5: 1 x Bulk Sample Pit and Roads	1320	3	N/A	R 3 960.00	12	R 47 520.00
Spill control	Phase II and III	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 Bulk sampling site: 6 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
				Year 5: 1 x Bulk Sample Pit and Roads	N/A	N/A	R 12 000.00	R 3 000.00	12	R 48 000.00
Waste management	Phase II and III	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. One bulk sampling site	Year 3-5	N/A	N/A	R 6 000.00	N/A	N/A	R 6 000.00

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	
			will be established and developed in accordance with the hypothetical Bulk Sample Box **Costing notes:** Waste receptacles will be moved to sites closed to new active sites							
Waste Disposal	Phase II and III	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 II and III	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 3-4	N/A	N/A	R 5 000.00	N/A	N/A	R 5 000.00
Erosion Control	Phase II and III	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	Year 3-5	N/A	N/A	N/A	N/A	N/A	R 10 000.00

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	
			stockpiles apart for the bulk sample pit stripping will be undertaken. **Costing note:** Lump sum estimate							

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