
Basic Assessment Report and Environmental Management Plan in the application for a Prospecting Right

In respect of Portions 13 and 19 of the farm
Carter Block 458

Ref: NC 30/5/1/1/2/11589PR

DATE: 29 June 2015

Prepared by:

EnviroGistics (Pty) Ltd on behalf of Sustain (Pty) Ltd
PO Box 22014
Helderkruijn
Roodepoort
1733

EMAIL: tanja@envirogistics.co.za
CELL: 082 412 1799
FAX: 086 551 5233



Report Purpose

DRAFT Basic Assessment Report and Environmental Management Plan in terms of GNR 983 of the National Environmental Management Act, 1998 as a supplement to the Prospecting Right Application in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 and Environmental Management Plan: for Stakeholder Comment

Report Status

DRAFT for Stakeholder Comment and DMR Consideration

Report Reference

EnviroGistics Ref.: 21519_FD

Departmental Ref.: NC 30/5/1/1/2/11589PR

Report Author

Tanja Bekker

MSc. Environmental Management

Certified EAPSA; PrSci. Reg. 400198/09

Report Reviewed by:

Lizelle Prosch

Sustain (Pty) Ltd

29 June 2015



Author

Tanja Bekker is registered as a Professional Natural Scientist with the South African Council of Natural Science Professional Board and is also a Certified Environmental Assessment Practitioner (EAP) with the Interim Certification Body of Environmental Practitioner Association of South Africa (EPASA), a legal requirement stipulated by the National Environmental Management Act, 1998. She is further certified as an ISO 14001 Lead Auditor. Her qualifications include a BSc. Earth Sciences (Geology and Geography), BSc. Hons. Geography, and a MSc. Environmental Management. In addition to her tertiary qualifications, she obtained a Certificate in Project Management, and completed the Management Advance Programme at Wits Business School.

With more than 12 years' experience in environmental management and the consulting industry she follows a methodical and practical approach in approaching environmental problems and a holistic approach towards approaching environmental solutions throughout the project planning, initiation, operation and decommissioning or closure of projects.

Disclaimer

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge, as well as available information. Information utilised and contained in this report is based on data/information supplied to EnviroGistics (Pty) Ltd by the client and other external sources (including previous site investigation data and external specialist studies). EnviroGistics (Pty) Ltd exercises due care and diligence in rendering services and preparing documents, however it has been assumed that the information provided to EnviroGistics (Pty) Ltd is correct and as such the accuracy of the conclusions made are reliant on the accuracy and completeness of the data supplied. No responsibility is accepted by EnviroGistics (Pty) Ltd for incomplete or inaccurate data supplied by the client and/or other external sources. Opinions expressed in this report apply to the site conditions and features that existed at the time of the start of the relevant investigations and the production of this document. For this reason EnviroGistics (Pty) Ltd accepts no liability, and the client by receiving and therefore accepting this document, indemnifies EnviroGistics (Pty) Ltd and its directors against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly.

The document may not be altered or added to without the prior written consent of the author. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports.

Copyrights

Copyright on all documents, drawings and records, whether manually or electronically produced, which form part of the submission and any subsequent report or project document, shall vest in EnviroGistics (Pty) Ltd.

Should the Client wish to utilise any part of, or the entire report, for a project other than the subject project, permission must be obtained from EnviroGistics (Pty) Ltd to do so. This will ensure validation of the suitability and relevance of this report on an alternative project.

Quality Control

Report Title	Finsch: Carter Block Prospecting Right Application BAR and EMP	
Report Ref. No.	21519_FD	
Report Status	Final Draft for Stakeholder Review and DMR Consideration	
Report Purpose	Stakeholders to provide comments and recommendations on the Draft Report	
	Signature	Date
Report Author	Tanja Bekker	28 June 2015
Report Review	Lizelle Prosch	29 June 2015
Client Signoff	Clive Fanti	29 June 2015

Amendments

Report Ref:	Nature of Amendment	Date	Report Output Ref:
21519_D	Change boreholes from 10 to 5.	29 June 2015	21519_FD

Distribution

Distributed To:	Purpose:	Date	Format/Amount
DMR	First Review	30 June 2015	Hard Copy, SAMRAD Upload Electronic Copy (CD)
Registered Stakeholders	First Review	30 June 2015	Email

Contents Page

1. IMPORTANT NOTICE.....	2
2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS.....	3
PART A.....	4
3. CONTACT PERSON AND CORRESPONDENCE ADDRESS.....	4
a) Details of	4
i) Details of the EAP	4
ii) Expertise of the EAP	4
b) Location of the overall Activity	5
c) Locality map.....	6
d) Description of the scope of the proposed overall activity	8
i) Listed and specified activities	11
ii) Description of the activities to be undertaken	16
e) Policy and Legislative Context.....	20
f) Need and desirability of the proposed activities	21
g) Motivation for the overall preferred site, activities and technology alternative	21
h) Full description of the process followed to reach the proposed preferred alternatives within the site.....	22
i) Details of the development footprint alternatives considered	22
ii) Details of the Public Participation Process Followed.....	23
iii) Summary of issues raised by I&APs.....	29
iv) The Environmental attributes associated with the alternatives	34
v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed.....	47
vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks	51
vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected	53
viii) The possible mitigation measures that could be applied and the level of risk.....	55
ix) Motivation where no alternative sites were considered	58
x) Statement motivating the alternative development location within the overall site.....	58
i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity	58
j) Assessment of each identified potentially significant impact and risk	60

k)	Summary of specialist reports.....	72
l)	Environmental impact statement.....	73
i)	Summary of the key findings of the environmental impact assessment.....	73
ii)	Final Site Map.....	73
iii)	Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives	73
m)	Proposed impact management objectives and the impact management outcomes for inclusion in the EMP;	74
n)	Aspects for inclusion as conditions of Authorisation.....	75
o)	Description of any assumptions, uncertainties and gaps in knowledge.	75
p)	Reasoned opinion as to whether the proposed activity should or should not be authorized	75
i)	Reasons why the activity should be authorized or not	75
ii)	Conditions that must be included in the authorisation.....	76
q)	Period for which the Environmental Authorisation is required.	76
r)	Undertaking.....	76
s)	Financial Provision.....	76
i)	Explain how the aforesaid amount was derived.	77
ii)	Confirm that this amount can be provided for from operating expenditure.....	84
t)	Specific Information required by the competent Authority	84
i)	Compliance with the provisions of sections 24(4)(a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-	84
u)	Other matters required in terms of sections 24(4)(a) and (b) of the Act.	86
	PART B	87
1.	Draft environmental management programme	87
a)	Details of the EAP	87
b)	Description of the Aspects of the Activity	87
c)	Composite Map	87
d)	Description of Impact management objectives including management statements.....	87
i)	Determination of closure objectives.	87
ii)	Volumes and rate of water use required for the operation.	88
iii)	Has a water use license has been applied for?	88
iv)	Impacts to be mitigated in their respective phases	89
e)	Impact Management Outcomes.....	105
f)	Impact Management Actions	122
i)	Financial Provision	135
2.	UNDERTAKING	145

List of Figures

Figure 1: 1:250 000 Locality Plan.....	7
Figure 2: Local Setting.....	8
Figure 3: Prospecting Layout.....	9
Figure 4 Existing Roads and Track (Google Earth 2015).....	16
Figure 5: Typical Proton Magnetometer	18
Figure 6: Shovel and Bucket to be used during soil sampling	18
Figure 7: Typical drill site layout (Not to Scale).....	19
Figure 8: Affected and Adjacent Properties.....	24
Figure 9: Topography	35
Figure 10: Wind Speed	35
Figure 11: 1: 250 000 Geological Map	37
Figure 12: Land Capability (AGIS Comprehensive Atlas)	38
Figure 13: Location of the Proposed Prospecting Site in relation to the Quaternary Catchment Area 92 A and C.....	39
Figure 14: Location of the river systems within the area	40
Figure 15: Aquifer Vulnerability of South Africa.....	41
Figure 16: Vegetation Types	42
Figure 17: Social Features	44
Figure 18: Borehole capping (Source: Department of Mines and Petroleum, DRAFT Guidelines for Environmentally Responsible Mineral Exploration & Prospecting in Western Australia, March 2012)....	136

List of Tables

Table 1: Location Details.....	6
Table 2: Prospecting Timeframes and Activities	10
Table 3: Prospecting Timeframes and Activities	12
Table 4: Water Uses.....	13
Table 5: Policy and Legislative Context.....	20
Table 6: Identified Stakeholders	26
Table 7: Details of the Stakeholder Engagement Process.....	28
Table 8: Issues raised by Stakeholders.....	29
Table 9: Demographic Information	46
Table 10: Potential impacts per activity and listed activities.....	48
Table 11: Status of Impact.....	51

<i>Table 12: Extent of Impact</i>	51
<i>Table 13: Duration of Impact</i>	52
<i>Table 14: Probability of Impact</i>	52
<i>Table 15: Intensity of Impact</i>	52
<i>Table 16: Impact Magnitude and Significance Rating</i>	53
<i>Table 17: Impact Assessment and Management Type</i>	60
<i>Table 18: DMR Financial Provision Methodology</i>	78
<i>Table 19: Master Rate Calculation</i>	80
<i>Table 20: Environmental Training and Awareness Schedule</i>	142



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

NAME OF APPLICANT:	Finsch Diamond Mine (Pty) Ltd
TEL NO:	+27 (11) 702 6900
FAX NO:	+27 (11) 706 3071
POSTAL ADDRESS:	PO Box 71007, Bryanston, 2021
PHYSICAL ADDRESS:	Block 3, Silver Point Office Park, Johannesburg, 2021
FILE REFERENCE NUMBER SAMRAD:	NC 30/5/1/1/2/11589PR (see Annexure A)

1. IMPORTANT NOTICE

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

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

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

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

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

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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



PART A

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, 2002 (Act No. 28 of 2002) ("MPRDA"). The application was accepted by the Department of Mineral Resources ("DMR" or "the department") on the 20th of February 2015, the letter was received by the applicant on 2 June 2015, therefore limited time was available to complete the stakeholder consultation and finalise the report. This report is therefore presented as a draft, once comments on this report have been received, the report will be updated and submitted to the Department of Mineral Resources for final decision-making.

The applicant is now required to prepare and submit a Basic Assessment and the associated Environmental Management Plan and undertake stakeholder consultation in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"). The Department will review the Environmental Management Plan and the stakeholder consultation information prior to making a decision on whether to grant a Prospecting Right.

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3. CONTACT PERSON AND CORRESPONDENCE ADDRESS

a) Details of

i) Details of the EAP

Name of the Practitioner	EnviroGistics (Pty) Ltd Ms. T Bekker
Tel No.:	082 412 1799
Fax No. :	086 551 5233
e-mail address:	tanja@envirogistics.co.za

ii) Expertise of the EAP

(1) The qualifications of the EAP

Please refer to Annexure B for the Curriculum Vitae of Ms. Bekker.

Education

- ☞ B.Sc. Earth Sciences (Geography & Geology) – RAU (University of Johannesburg)
- ☞ B.Sc. Geography Honours - RAU (University of Johannesburg)
- ☞ M.Sc. Environmental Management - RAU (University of Johannesburg)

Career Enhancing Courses

- ☞ ISO 14000 Lead Auditors Course (WTH Management)
- ☞ Certificate in Project Management (Pretoria University)



- Management Advance Programme (MAP 81) (Wits Business School)

Professional Affiliations

- Certified member of Environmental Assessment Practitioners Association of South Africa
- Certified ISO 14001 Environmental Management System Auditor
- Registered as a Professional Natural Scientist,
- Member of the South African affiliate of the International Association for Impact Assessment
- Member of the Environmental Law Association of South Africa (ELA).

(2) Summary of the EAP's past experience

Ms. Bekker is registered as a Professional Natural Scientist with the South African Council of Natural Science Professional Board and is also a Certified Environmental Assessment Practitioner (EAP) with the Interim Certification Body of Environmental Practitioner Association of South Africa (EPASA), a legal requirement stipulated by the National Environmental Management Act, 1998. She is further certified as an ISO 14001 Lead Auditor. Her qualifications include a BSc. Earth Sciences (Geology and Geography), BSc. Hons. Geography, and a MSc. Environmental Management. In addition to the tertiary qualifications, she obtained a Certificate in Project Management, and completed the Management Advance Programme at Wits Business School.

With more than 12 years' working experience in environmental management and the consulting industry and managing various Large Account Clients, she understands the South African Regulatory System, and can advise client with due diligence on their environmental regulatory requirements and offer a solution driven service to their project life cycle. She is equipped with exceptional project management and coordination skills, which especially enhances the service she offers clients within the environmental permitting system.

Her key focus is environmental management and compliance with extensive experience in the mining industry. Project Management and Coordination of projects form a critical component of her duties, which include project planning, initiation of projects, client, authority and stakeholder consultation, specialist coordination, budget control, process control, quality control and timeframe management. Her interest lies in a client advisory capacity, being involved during due diligence investigations, pre-project development and assist the client and engineering team in adding value to develop the project in and environmental sustainable manner, considering client costs and liabilities, as well as consider the implication of environmental authorisation conditions and requirements on project deliverables. Her involvement in projects has spanned over the project life cycle from Due Diligence Investigations, Pre-Feasibility Investigation's, Prospecting Right Applications, Mining Right Applications, Environmental Reporting and implementation and auditing of Environmental Management Plans and Authorisations.

b) Location of the overall Activity

The following table presents the location and associated cadastral details associated with the area in question.

Table 1: Location Details

Farm Name:	Carter Block 458, Portion 13 Carter Block 468, Portion 19
Application area (Ha)	3 885.9252ha
Magisterial district:	Hay (Postmasburg)
Distance and direction from nearest town	The project is located within the Magisterial District of Barkley West under the jurisdiction of the Kgatelopele Local Municipality, located within the ZF Mgcawu District Municipality (formally Siyanda District Municipality) of the Northern Cape Province. Danielskuil is located approximately 23km north from the center of the prospecting area, with Lime Acres approximately 7km towards the North-West. The prospecting activities are planned on Portions 13 and 19 of the farm Carter Block 458. The overall area applied for is approximately 3 886ha in size.
21 digit Surveyor General Code for each farm portion	C0310000000045800013 C0310000000045800019

c) Locality map

(Show nearest town, scale not smaller than 1:250,000)

The following two figures illustrate the regional setting and farm portions associated with the proposed Prospecting Area.

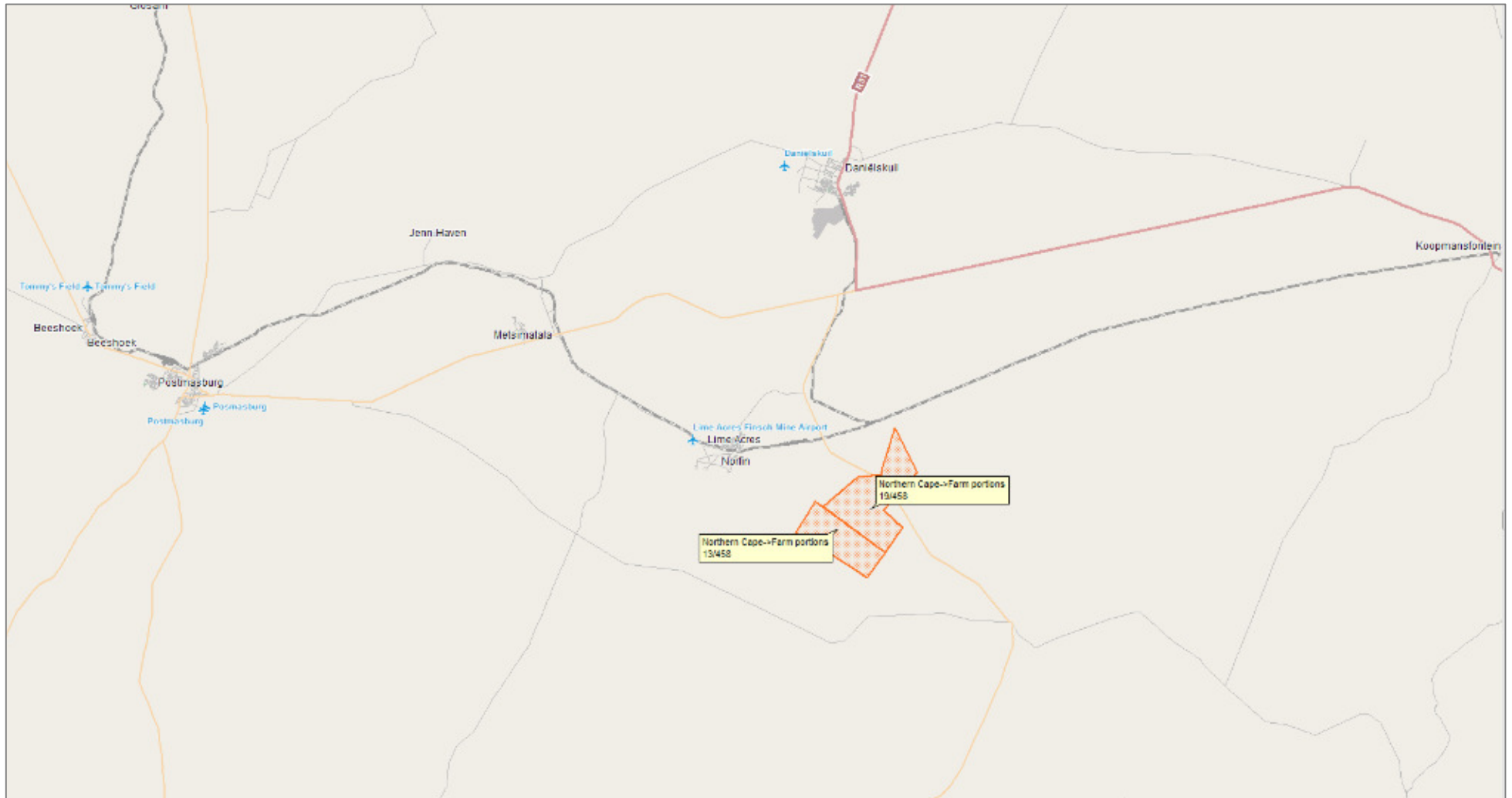


Figure 1: 1:250 000 Locality Plan

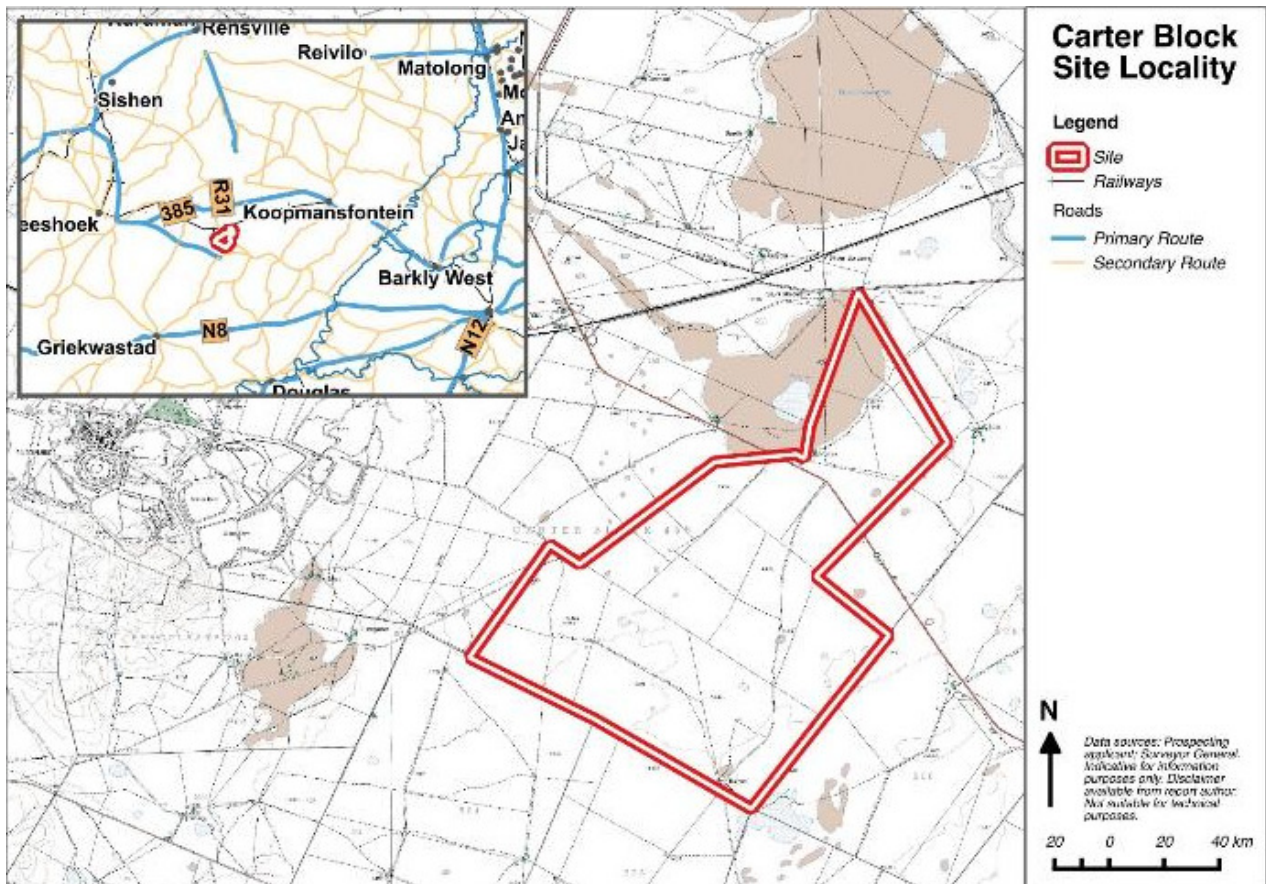


Figure 2: Local Setting

The project is located within the Magisterial District of Hay under the jurisdiction of the Kgatelopele Local Municipality, located within the ZF Mgcau District Municipality (formally Siyanda District Municipality) of the Northern Cape Province.

Danielskuil is located approximately 23km north from the center of the prospecting area, with Lime Acres approximately 7km towards the North-West.

The prospecting activities are planned on Portions 13 and 19 of the farm Carter Block 458. The overall area applied for is approximately 3,886ha in size.

d) Description of the scope of the proposed overall activity

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

The applicant is planning to prospect for the presence of Diamonds (Alluvial and Diamonds in Kimberlites) on the proposed properties. The detailed geology and diamond potential of the area is relatively unknown, and as such exploration work will commence from a very basic level. The Prospecting Work Programme will therefore be designed in phases, each phase conditional on the success of the previous phase and will include:

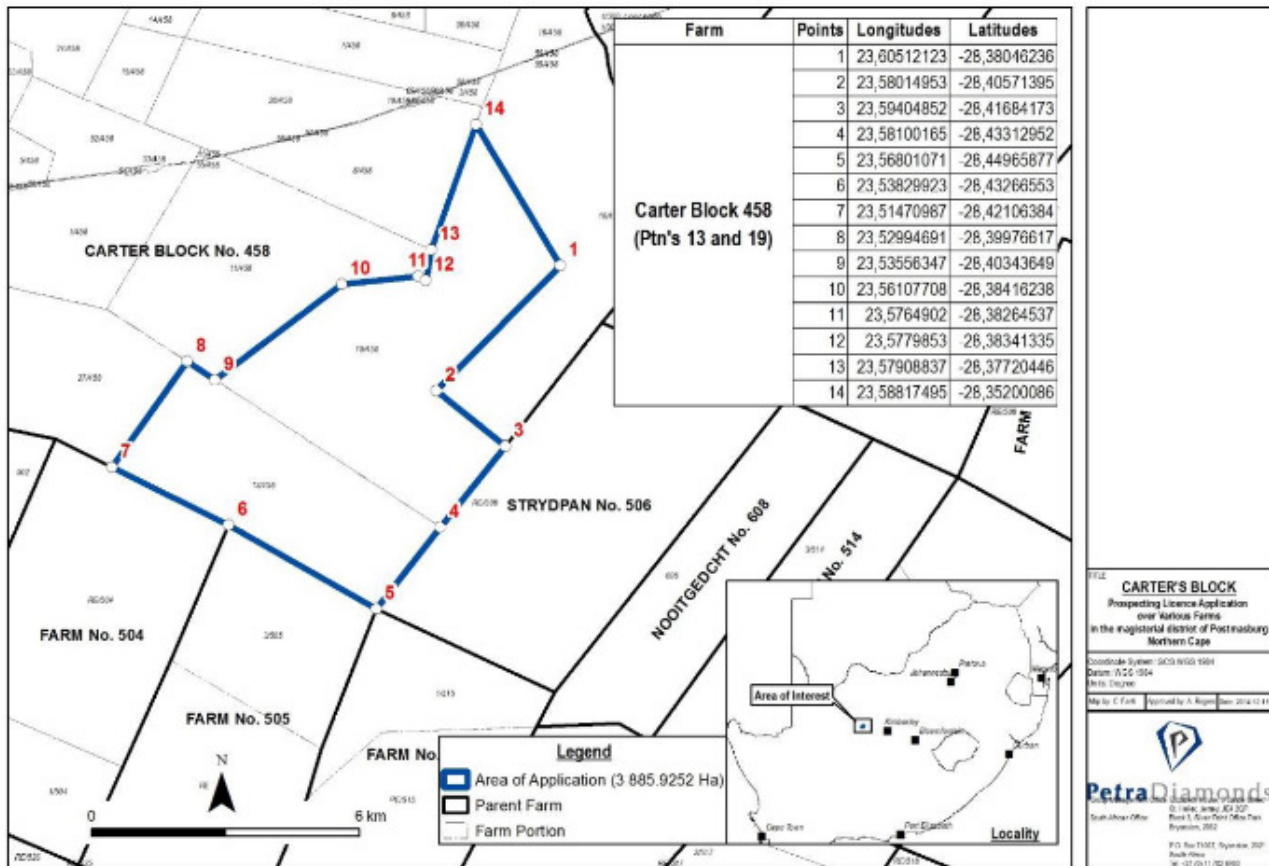


Figure 3: Prospecting Layout

Phase 1: Data acquisition and a Desktop study

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

Phase 2: Target Generation and Ground Truthing

If the initial results of the desktop study are positive, further data will be generated through wide spaced grid loam sampling and ground or possibly airborne geophysical work. Targets generated during the sampling and geophysical surveys will be investigated on the ground and tested by drilling if deemed necessary. 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.

Phase 3: Scout Drilling and Delineation Drilling

Targets that have been prioritised through detailed loam sampling and ground geophysics will be tested by initial diamond or percussion drilling. If Kimberlite is intersected, samples will be taken for Heavy Metal 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. Dependent 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 more detailed delineation diamond drilling and geological modelling to assess potential resource tonnage and diamond content. Information gathered during this phase would be used in the decision to embark on additional prospecting and evaluation activities.

It should be noted that no bulk sampling will be undertaken as part of this Prospecting Works Programme. Should the initial evaluation of the deposit indicate a sufficient size and grade, bulk sampling may be required. In this event, the Prospecting Works Programme will be amended and a new Environmental Authorisation Process will be required for submission to the DMR.

The activities associated with the Prospecting Work Programme will be scheduled over a period of five years as is detailed in the following table:

Table 2: Prospecting Timeframes and Activities

Phase	Activity	Timeframe	Outcome	Time frame for outcome
Phase1: From approval to end of 1 Year	Data Acquisition: acquire historical geological/exploration data over area applied for and surrounds	12 months	Compile data. Refine exploration strategy	1 year
Phase2: From year 2 to year 3.	Ground and or aerial magnetic survey over prospecting area	12 months	Define and prioritize exploration targets for detailed follow up.	2 years
	Anomaly-specific ground geophysics	6 months	Detailed follow up on targets to establish which targets warrant scout drilling to test for kimberlite/ alluvial.	
	Anomaly-specific loam sampling and drilling for kimberlite/alluvial deposit identification	6 months		
Phase3: From year 4 to year 5.	Scout Drilling	6 months	Confirm which targets are due to the presence of kimberlite	2 years
	KIM Sampling	6 months		
	MiDA sampling	12 months	Test diamond potential and estimate potential grade of kimberlite	
	Initial delineation drilling		Delineate orebody Assess what further work is warranted (e.g. bulk sampling). Amend PWP	

As is clear from the information provided above, each of the phases is dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond drilling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in Figure 3. In the subsequent sections (Section ii) detailed information is provided in terms of each of the prospecting activities.

The applicant must submit a plan indicating the location of drilling activities, once these areas have been finalized to at least all landowners, as well as the Department of Mineral Resources and the Department of Water and Sanitation.



i) Listed and specified activities

National Environmental Management Act, 1998:

Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) requires, upon request by the Minister, that an Environmental Management Plan be submitted and that the applicant must notify and consult with Interested and Affected Parties (I&APs). Section 24 of the NEMA requires that activities, which may impact on the environment must obtain an environmental authorisation from a relevant authority before commencing with the activities. Such activities are listed under Regulations Listing Notice 1 Government Notice (GN) 983, Listing Notice 2 GN 984 and Listing Notice GN 985 (dated 4 December 2014) of NEMA. The proposed prospecting activity triggers:

NEMA Government Notice 983: Listing Notice 1:

- Activity 12: “The development of... (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs - (a) within a watercourse; ... (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse.”
- Activity 19: “The ..., or dredging, excavation, removal or moving of soil, sand, shells, , shell grit, pebbles or rock of more than 5 cubic metres from – (i) a watercourse, but excluding where such ... dredging, excavation, removal or moving - ... (c) falls within ambit of activity 21 of this Notice [GN 983], in which case that activity applies.” – although included in the Environmental Application, the applicant will not trigger this activity due to the small scale of the activity.
- Activity 20: “Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource...”
- Activity 27: “The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation...”
- Activity 30: “Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2002 (Act No. 10 of 2004).” – this activity has been included for the sole purpose of the presence of flora, which may require permits for their removal.

Please refer to the following table for the details in terms of the listed activities.

Table 3: Prospecting Timeframes and Activities

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc. E.g. for mining,- excavations, blasting, stockpiles, dumps or dams, Loading, hauling and transport, supply dams and boreholes, accommodation, ablution, stores, workshops, processing plant, storr control, berms, roads, pipelines, power lines, control etc...etc...etc.)	Aerial extent of the Activity Ha or m ²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NO (GNR 544, GNR 545 or GNR 546)
Prospecting activities	Approx. 9,800m ²	X	GNR 983, Listing 20
Roads	Approx. 8,000m ²		
Drilling Activities	Approximately 750m ²	X	GNR 983, Listing 20
Soil Sampling Activities (A typical sampling site will be approximately 1m ²). It is unlikely that more than 100 samples will be taken, however, this will be confirmed on site as part of the prospecting activities.		X	GNR 985 Listing 12
Temporary Camp Site	Approx. 200m ²	-	-
Site Clearance	Less than 9 000m ²	X	GNR 983, Listing 27
Sludge from drilling activities	Less than 50m ²	-	-
Hydrocarbon storage	Less than 60m ³	-	-
Removal of sensitive tree species (such as the Olienhout Tree and Kameeldoring Tree). This activity is unlikely as the prospecting activities can be planned around these areas to an extent. However, where specific areas are encountered, tree removal permits must be applied for at the NCDENC.		X	GNR 983, Listing 30

National Water Act, 1998:

The following table summarizes the potential water uses that may, or may not be triggered.

Table 4: Water Uses

(Please refer to following page)

Water Us	Purpose	Volume (stipulated by the DWS)	Requirements in terms of the NWA	Conclusion
Section 21(a)	Water for drilling	1m ³ /hour	GN 399 (26 March 2004): <u>Zone C</u> : 75m ³ of water per hectare per annum may be taken from these drainage regions. <u>Area in question</u> : 3 885.9252ha <u>Water Generally authorised</u> : 291,444m ³ /annum	The prospecting activities will fall within the limits set by the water use generally authorised for drilling purposes. <u>No water use is triggered.</u>
Section 21(b)	Storage of water for drilling machine	15m ³	GN 399 (26 March 2004): <u>Water Storage Generally Authorised</u> : This catchment is not excluded from the general authorisation and therefore may store up to 50 000m ³ of water.	All drilling activities will be located within individual areas, not exceeding 150m ² . With 5 boreholes assumed, the overall areas will not be greater than 750m ² . This 150m ² will accommodate all associated activities. The prospecting activities will fall within the limits set by the water use generally authorised for storage of water. All activities will be limited to the drill pads. <u>No water use is triggered.</u>
Section 21(g)	Dirty water (sludge), from the drilling activities.	< 1000m ³	The proposed activities can be classified as a Primary Risk Class: C (Small operation, no waste, no processing). Risk Class C is considered a low risk with a low probability of occurrence of the impact with a negligible consequence. GN 399 (26 March 2004): <u>Water Storage Generally Authorised</u> : A person may dispose of "mine residue" into mine residue deposits provided that the mine residue is not from a Category A mine; the disposal is in accordance with GN 704. In addition to this, a person may store waste water, but only have to submit a registration form for the registration of the water use before commencement of storage if more than 1,000m ³ are stored for disposal or if more than 500m ³ are stored for reuse.	The prospecting activities will fall within the limits set by the water use generally authorised for the storage of waste water. <u>No water use is triggered.</u>

Section 21 (c)	Prospecting activities within a watercourse as defined in Section 21 of the NWA.	-	<p>No invasive activities will be undertaken within riverbeds. Limited soil sampling may be required. Each soil sample will only be 1m² in size, these may be located within the non-perennial Rietspruit or the Rooipan. A soil samples are excavated using simple shovel and bucket, so soil sampling is a low impact exploration method in terms of environmental disturbance. The distance between soil sample positions is determined on-site, generally in conjunction with a ground geophysical survey. Minimal disturbance of vegetation and wildlife is envisaged. Each soil sampling site will be levelled after the sample was taken and due to small size of these sites, the re-vegetation of the sites will not be required as it is expected that natural vegetation will re-establish itself within a short period.</p> <p>No drilling activities may be undertaken within 100m of these systems, without the approval by the Department of Water and Sanitation, Kimberley.</p>	<p>The activities will not lead to any altering or diversion or impeding of the Rietspruit or Rooipan areas and therefore <u>no Water Use will be triggered.</u></p>
----------------	--	---	---	--

ii) Description of the activities to be undertaken

The following section presents a detailed description of all the activities associated with the proposed Prospecting Application. Due to the nature of the Prospecting Works Programme, and the fact that the specific prospecting activities required are dependent on the preceding phase, assumptions are presented where required. These assumptions are based on similar projects undertaken by the Applicant and therefore be regarded as indicative of what will be undertaken.

Access Roads

Access to the site will be required during loam sampling, and diamond drilling activities (Phase 2 and 3). Access requirements can only be determined after Phase 1 has been concluded. A number of existing roads and tracks (refer to Figure 4) 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 tracks 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.



Figure 4 Existing Roads and Track (Google Earth 2015)

Water Supply

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 landowners. During the site visit undertaken, the farmers indicated that water was sourced from boreholes and that water levels in the area can be encountered at 5m in areas with most boreholes drilled to a depth of 30m.

It is anticipated that water brought onto the site, will be sourced from the neighboring subsidiary of Finsch Mine (Afropean Diamonds), Water will be trucked from the nearby mine to the identified drill sites, water



browsers will be deployed to these sites as and when required.

Continuous water supply will be required during drilling, at an estimated rate of 1,000 liters 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 liter on-site vertical water storage tank for drinking water and general use by persons will be provided at the drill site.

Ablution

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

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.

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.

Accommodation

No accommodation for staff and workers will be provided on-site and all persons will be accommodated in nearby towns (i.e. Postmasburg and Lime Acres). 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.

Blasting

As the Prospecting Works Programme does not allow for bulk sampling, no blasting will take place.

Storage of Dangerous Goods

During the diamond drilling 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 60m³ will be stored in above ground diesel storage tanks.

Detailed Prospecting Activities

○ Phase 1: Data acquisition and a Desktop study

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

○ Phase 2: Target Generation and Ground Truthing and Delineation

• Phase 2a: Magnetometer Surveys

Should the initial results of the desktop study be encouraging, further data will be generated through a ground magnetometer survey. Anomalies identified through the initial magnetic survey will be followed by more detailed anomaly-specific ground geophysics (magnetic and gravity), as well as grid loam (soil) sampling for Kimberlite Indicator Mineral (KIM) to determine the possible existence of either primary or secondary diamondiferous deposits.

Ground magnetics survey will be carried out on parallel lines spaced at 100m across the prospecting area using a magnetometer. A magnetometer is an instrument used to measure the strength and/or direction of the earth's magnetic field in the direct vicinity of the instrument. Local magnetic intensity is directly affected by



the magnetic properties of the underlying rock mass, so magnetic surveying can be used to detect and map out magnetically distinct geological entities. In the case of a kimberlite intrusion, the kimberlite will usually have a different magnetic susceptibility to the surrounding host rock and, depending on the magnetic susceptibility difference, will be detectable by magnetic surveying.

A ground magnetic survey is usually carried out using two proton precession magnetometers. One is kept stationary at a “base-station” for the duration of the survey, and measures diurnal variation in the earth’s magnetic field. The other magnetometer (“roving magnetometer”) is moved over the area of interest usually on a pre-determined grid of parallel straight lines. The base station data is used to correct the survey data for diurnal variation in the earth’s magnetic field. The corrected magnetic survey data is then processed and gridded to reveal changes in the magnetic field over the area surveyed caused by changes in the underlying rock mass.

Proton magnetometers are small, portable machines that are easily carried by one person (please see Figure 5). Magnetic surveying needs little or no bush clearing and is extremely low impact from an environmental perspective. As no significant environmental impacts are expected during this phase, rehabilitation will not be required.



Figure 5: Typical Proton Magnetometer

- Phase 2b: Soil Sampling

Based on the outcomes of the magnetic survey, soil sampling will be undertaken for target areas. Soil samples will be taken to detect the presence of minerals being released into the soil layer by the weathering of the underlying rock. Diamondiferous kimberlites host a specific suite of minerals derived from deep in the mantle below the earth’s crust (pyrope garnet, picro-ilmenite, chromite). The presence of these minerals in the soil generally indicates the presence of a nearby kimberlite, and analysis of the chemical composition of these minerals by scanning electron microprobe can give a good indication of how likely the kimberlite is to be diamondiferous.

Soil samples of up to 200 liters (0.2m³ or 5-10kg) in volume will be taken in the topmost soil layer (up to 20-30cm deep) and sieved on site to remove very fine (<425 micron) material. A typical sampling site will be approximately 1m².



Figure 6: Shovel and Bucket to be used during soil sampling

Access to the sampling sites will be via existing gravel roads as far as practically possible each site will only be visited once. In arid environments the topmost soil layer will be scraped off the surface as these minerals are generally denser than the other soil minerals present and get concentrated by wind action.

A soil samples are excavated using simple shovel and bucket, so soil sampling is a low impact exploration method in terms of environmental disturbance. The distance between soil sample positions is determined on-site, generally in conjunction with a ground geophysical survey. Minimal disturbance of vegetation and wildlife is envisaged. Each soil sampling site will be levelled after the sample was taken and due to small size of these sites, the re-vegetation of the sites will not be required as it is expected that natural vegetation will re-establish itself within a short period.

o Scout Drilling and Delineation Drilling

Targets generated during the sampling and geophysical surveys will be investigated on the ground and tested by initial diamond or percussion drilling. If any of the exploration targets give a positive result (i.e. Kimberlite is intersected), a drilling program will be undertaken in order to delineate and give a preliminary assessment of the diamond potential of the deposit identified. Where Kimberlite is intersected, 10kg samples will be taken for Heavy Metal 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.

Dependent 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 more detailed delineation diamond drilling and geological modelling to assess potential resource tonnage and diamond content. Information gathered during this phase would be used in the decision to embark on additional prospecting and evaluation activities.

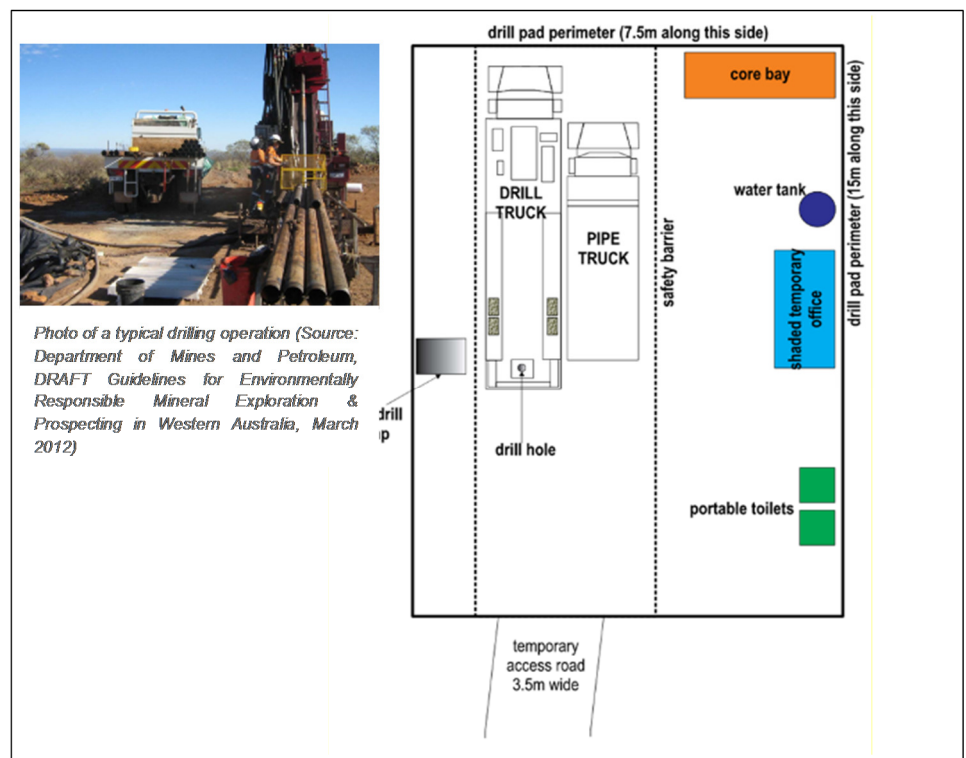


Figure 7: Typical drill site layout (Not to Scale)

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 its viability for mining.

e) Policy and Legislative Context

Table 5: Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT
Specific Environmental Management Acts (SEMAs)		
National Environmental Management: Biodiversity Act, 2004	Presence of Kameeldoring and Olienhout trees	The EMP will regulate the applicant to apply for Tree Removal Permit from the NCDENC prior to the potential removal of any sensitive and/or protected species.
National Heritage Resources Act, 1999	The activity will trigger the requirements under Section 38 of the NHRA. However, the requirements for permits are not yet known.	The South African Heritage Resources Agency (SAHRA) was contacted on 14 April 2015, at which time the agency requested that the information be uploaded on to their system for comment and feedback. The draft EMP has been provided to SAHRA and comments have been requested. To date no comments have been received from the Agency (please refer to Annexure E).
National Legislation		
National Environmental Management Act, 1998	This Basic Assessment Report & EMP	An Application for Environmental Authorisation was submitted to the DMR during February 2015. The application was accepted by the DMR on the 20 th of February 2015 (NC30/5/1/1/2/11589PR). The DMR requested the submission of the Basic Assessment Report and EMP within 90 days of the letter.
National Water Act, 1998	Groundwater abstraction as part of drilling activities Soil Sampling for Alluvial Diamonds	In terms of Government Notices Regulation 399, the applicant will be allowed to abstract 75m ³ of groundwater per hectare per annum from groundwater within the Quaternary Catchment of C92A. This use will be Generally Authorized. Although each soil sample will only be 1m ² in size, these may be located within the Riet Spruit, a tributary of Klein Riet Spruit or the Rooipan. Based on the information at hand and the scale of the proposed operations the activities will not impact on the course and nature of the riverbed or flow and therefore no Section 21(c) or (i) should be required.
Mineral and Petroleum Resources Development Act, 2002	Application for Prospecting in terms of Section 16	A Prospecting Right Application has been submitted to the DMR by the Applicant. The application was accepted by the DMR on the 20 th of February 2015 (NC30/5/1/1/2/115989PR).
Municipal Plans		
Integrated Development Plan (IDP)	Economic Development	Some of the key issues identified by the IDP are basic service development and local economic development.



f) Need and desirability of the proposed activities

Petra Diamonds, the holding company of Finsch Diamond Mine, is a leading independent diamond mining group and an increasingly important supplier of rough diamonds to the international market. The vision of the company is to build a world-class diamond group. Therefore developing a diamond mining group of global significance. Through its strong and responsible leadership, Petra is investing in the expansion and optimization of its world-class assets in order to deliver significantly increased production in the years to come.

Finsch Diamond Mine has extensive experience in the diamond industry, from grassroots level exploration to production in various projects in South Africa. Finsch Diamond Mine has a known track record for successfully establishing and operating hard rock diamond mine in South Africa, where it currently has approximately 800 employees on its operating mine. And has significant experience in diamond exploration.

A subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of this proposed prospecting area. Based on the current information, the possibility to encounter further Diamond Reserves was identified.

The definition of Prospecting in terms of the MPRDA states: "intentionally searching for any mineral by means of any method which disturbs the surface or subsurface of the earth, including any portion of the earth that is under the sea or under other water...". The company therefore applied for prospecting on the properties as discussed in this report to determine the presence of diamonds, and whether these are feasible to enter into further studies towards a Mining Right.

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

Preferred Site

As discussed in the previous section, a subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of the proposed area. Based on the outcomes of that study, the possibility to encounter further Diamond Reserves was identified.

The proposed prospecting area is targeted as, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units, as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

The site is therefore regarded as the preferred site and alternative sites are not considered.

Technological and Site Activity Alternatives

Due to the nature of the proposed prospecting activities future land use alternatives will not be compromised. Once a viable reserve has been confirmed a comprehensive social and environmental impact assessment will be required (in accordance with legislation), during which time alternative land use to mining would be investigated.

In terms of the technologies proposed, these have been chosen based on the long term success of the company in terms of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.



The location of intrusive drilling activities will be determined during Phase 1 of the Prospecting Works Programme. All infrastructure will be temporary and/or mobile.

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

Each of the phases are dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond drilling can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken. For the purposes of this report, the overall prospecting area is presented in **Error! Reference source not found.**

i) Details of the development footprint alternatives considered

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

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

(a) The property on which or location where it is proposed to undertake the activity

As discussed in the previous section, a subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of the proposed area. Based on the outcomes of that study, the possibility to encounter further Diamond Reserves was identified.

The proposed prospecting area is targeted as, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units, as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

The site is therefore regarded as the preferred site and alternative sites are not considered.

The company therefore applied for prospecting on the properties as discussed in this report to determine the presence of diamonds, and whether these are feasible to enter into further studies towards a Mining Right.

(b) The type of activity to be undertaken

In terms of the technologies proposed, these have been chosen based on the long term success of the company in terms of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

(c) The design or layout of the activity

The location of activities will be determined based on the location of the prospecting activities, which will only be determined during Phase 1 of the Prospecting Works Programme. All infrastructure will be temporary and/or mobile [refer to Section d (ii) of the report for which includes a typical layout of drill sites to be established].

(d) The technology to be used in the activity

In terms of the technologies proposed, these have been chosen based on the long term success of the company in terms of their prospecting history. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

(e) The operational aspects of the activity

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewerage facilities are required.

The activities will commence with Magnetometer Surveys (as previously discussed), which will comprise of non-invasive techniques. This manner of survey will ensure that the client can clearly delineate areas which are regarded as suitable for further investigation and no unnecessary surface disturbance will be undertaken.

Based on the outcomes of the magnetic survey, soil sampling will be undertaken for target areas only. Soil sampling is planned using a simple shovel and bucket. Soil sampling is a low impact exploration method in terms of environmental disturbance.

After the preliminary exploration work, the anomalies identified will be ranked for exploratory drilling. Site activities as it relates to exploratory drilling will comprise the establishment of the drill pad (drill pad clearing and compaction), drilling operations (drill maintenance, refueling, core extraction and core storage) and rehabilitation activities (drill pad ripping and re-vegetation). No feasible alternative to the proposed exploratory drill methods currently exists. Impact associated with the drilling operations will be managed through the implementation of a management plan, developed as part of the application for authorisation.

(f) The option of not implementing the activity.

The option of not approving the activities will result in a significant loss to valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii) Details of the Public Participation Process Followed

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

Identification of Interested and Affected Parties

Settlements were identified through the use of the 1:50,000 topographical map, aerial imagery Title deed searches and through consultation. No communities are situated on the said properties. All the affected



properties belong to private farmers and some portions are state owned land. Please refer to the database provided as Table 6 and the farm portions indicated in Figure 8.

Other I&APs 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 6.

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

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

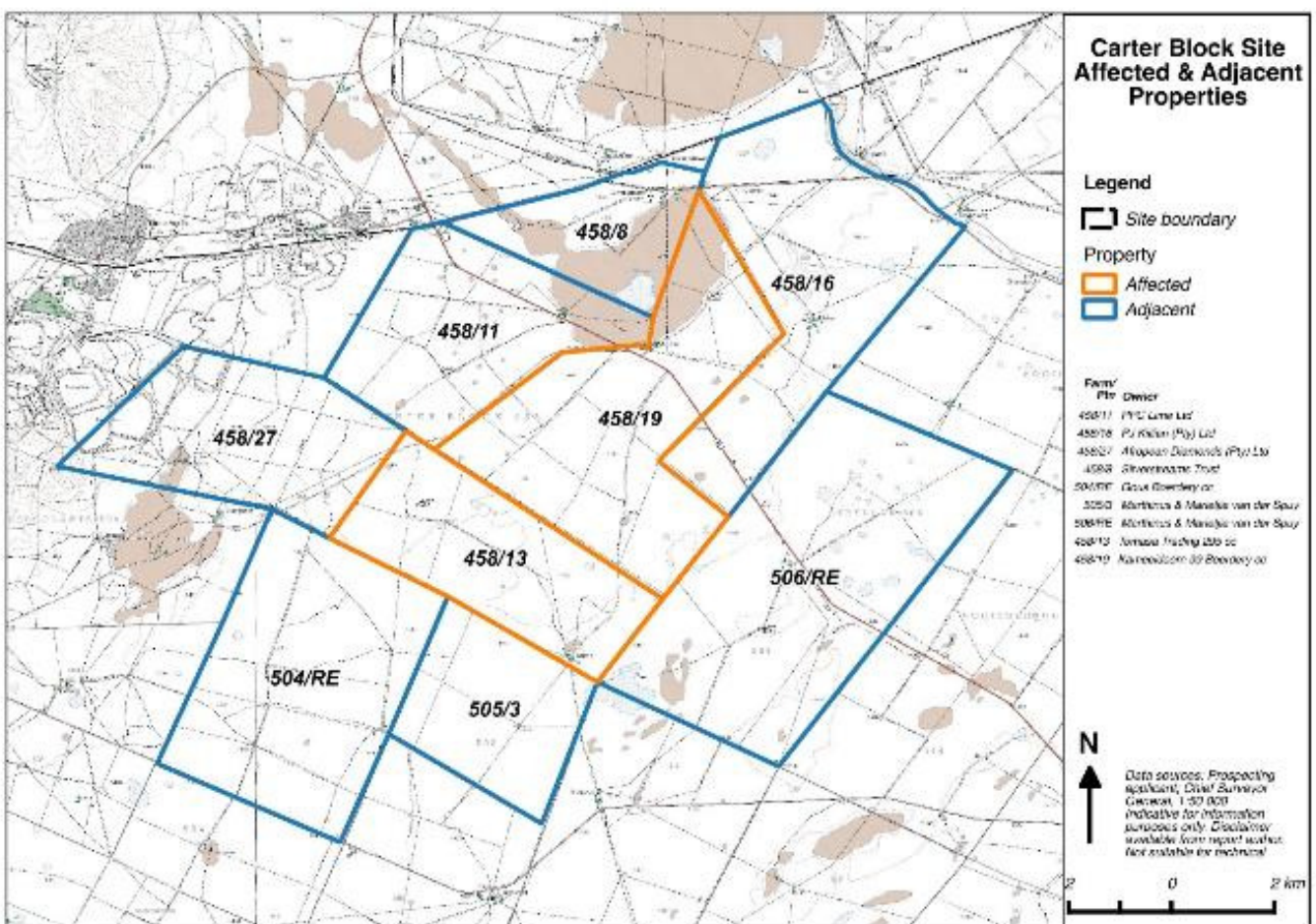


Figure 8: Affected and Adjacent Properties

- Methodology of Notification:
 - Cadastral search and Deeds searches to identify farm portions;
 - Advertisements and Site Notices to notify stakeholder;
 - Distribution of BIDs with comments sheet requesting the recommendation of any other stakeholders; and
 - Site Visit to consult with stakeholder.

- Community or Communities Identified and whether these parties are the landowner

No communities are situated on the said properties. All private owned land with some portions owned by the state.

- Land Claims

The request for a Land Claim Letter was e-mailed to Mr Ryan Oliver on 9 June 2015 from the Northern Cape Department of Rural Development and Land Reform. A letter from the Commission of Restitution of Land Rights dated 11 June 2015, advised the applicant that there are no restitution land claims on the properties applicable to this project (please refer to Appendix D).

- Traditional Authorities

No Traditional Authority was identified.

- Municipalities

The project is located within the Magisterial District of Hay, under the jurisdiction of the Kgatelopele Local Municipality, located within the ZF Mgcawu District Municipality (formally Siyanda District Municipality). The Ward identified included Ward 4 (30806004) and the neighboring Ward 5 (30806005). The Ward Councilors Mrs KG Kgoronyane and Mrs JJ Swart respectively could not be reached, however the local municipality committed to forward the documentation on to the relevant councilors.

- Landowners and Notification Methodology

The Landowners involved are all private farmers (please refer to the database presented in Table 6). EnviroGistics obtained the details for each landowner from the Title Deed search done. Each landowner was contacted and informed of the said application. A BID was also sent where applicable. In addition, a Site Visit to the study area was undertaken on 19 June 2015 to meet with the landowners affected.

- Adverts were placed in the:
 - DFA on 12 June 2015
- BID and Registration Sheet with a Locality map was sent to all interested and affected parties via e-mail between 12-22 June 2015
- A site visit was undertaken on 19 June 2015
- All Government departments were informed of the said application via e-mail and phone.
- Two (2) A2 Site Notices were placed. One was erected on at the site boundary, one at the Spar in Lime Acres. An A4 notice was also placed in the notice board at the recreational club.
- Flyers and BIDs were printed and made available within the study area.
- Draft copies of the EMP will be provided to all I&APs registered on the project database for a period of 30 days to allow the I&APs the opportunity to comment on the findings of the EMP. The draft EMP report will be made available to the I&APs on 2 July 2015.

o Cultural and Heritage Significance

The South African Heritage Resource Agency has been informed of the stakeholder consultation process. The draft report will also be submitted to the Agency by means of their online submission system.

o Relevant Government Departments

All regulatory authorities were informed of the project and the draft report will be submitted to these departments electronically (please refer to Annexure C for the proof of notification):

Table 6: Identified Stakeholders

REF. NO.	Reg.	SECTOR	OWNER	CONTACT PERSON
1	41(b)(i)	Occupiers of the site, if the proponent or applicant is not the owner or person in control of the site		
		Carter Block 458 (13)	Tomas Trading 295 cc (Mr. Meyer)	Mr Meyer
		Carter Block 458 (19)	Kameeldoorn 99 Boerdery cc (Mr Venter)	Mr Venter
2	41(b)(ii)	Owners, persons in control of, and occupiers of land adjacent to the site		
		Carter Block 458 (8)	Silverstreams Trust	Johan and Suzette Faist
		Carter Block 458 (16)	PJ Killian (Pty) Ltd	Mr York
		Carter Block 458 (11)	PPC Lime Ltd	
		Carter Block 458 (27)	Afropean Diamonds (Pty) Ltd (subsidiary of Finsch Diamond Mine)	
		Farm 504 (RE)	Gous Boerdery cc	
		Farm 515 (1)	Marthinus van der Spuy	
			Marietjie van der Spuy	
		Farm 506 (RE)	Marthinus van der Spuy	
			Marietjie van der Spuy	
		Farm 505 (3)	Marthinus van der Spuy	
	Marietjie van der Spuy			
3	41(b)(iii)	The municipal councillor of the Ward		
		Ward 5 (30806005)(neighbouring Ward)	Mrs. JJ Swart	
		Ward 4 (30806004)	Mrs. KG Kgoronyane	
3	41(b)(iv)	The municipality which has jurisdiction in the area		
		Kgatelopele Local Municipality	Mr organ Motswana (Manager); Tessa Smit (Admin Clark - receives emails)	
		ZF Mgcau District Municipality	Mr D. Ngxanga	
4	41(b)(v)	Any organ of state having jurisdiction in respect of any aspect of the activity		
		Northern Cape Department of Water Affairs	Mr A Abrahams	
			Ms. Andisa Msomi	
		Northern Cape Department of Environment and Nature Conservation	Mrs Doreen Werth	



REF. NO.	Reg.	SECTOR	OWNER	CONTACT PERSON
		Northern Cape Department of Labour	Mr. Johnathan Mphahlele	
		Northern Cape Department of Rural Development and Land Reform	Mr Ryan Oliver	
			Ms Ruwayda Baulackey	
		Northern Cape Department of Agriculture	Dr. Phemelo Kegakilwe Acting Chief Director - Northern Cape - Kimberley	
		Northern Cape - South African Heritage Resources Agency	Ms Kathryn Smuts	
		Department of Agriculture Forestry and Fisheries	Jacolene Mans	
		Eskom	Andrea van Gensen	
		Department of Roads and Public Works	Mr Itumeleng Bulane	
5	41(b)(vi)	Any other party as required by the competent authority		
		N/A		
6	39(2)(b)	Competent Authority		
		Northern Cape Department of Mineral Resources	Boitumelo Jackals	
7	39(2)(d)	Potential, or were relevant, registered Interested and Affected Parties		
		Agri Northern Cape	Henning Myburg	
		WESSA	Ms S Erasmus	
		South African Civil Aviation Authority	Ms L Stroh	
		Danielskuil Agricultural Society	Mr S Weideman	
		Tshiping WUA	Mr A Viljoen	

Details of the Engagement Process

Table 7 provides a detailed account of the activities and the associated timeframes of the stakeholder consultation process.

Table 7: Details of the Stakeholder Engagement Process

Action	On or Before	Comment
Request for registration as a stakeholder and / or to attend a stakeholder meeting	Between 14 June 2015 and 17 July 2015	Stakeholders are invited to register as Interested and Affected Parties
Stakeholder Meetings	19 June 2015	Site Meetings were with landowners.
Submit comments and concerns	17 July 2015	Stakeholders were requested to submit all their comments by no later than 17 July 2015.
Review of Environmental Management Plan	The draft Basic Assessment Report and EMP will be provided to Stakeholders for comment between 2 July 2015 and 2 August 2015.	


 **Issues and Response Register**

All comments received by Stakeholders are included in the table below.

iii) Summary of issues raised by I&APs

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

Table 8: Issues raised by Stakeholders

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	Date Comments Received	Issues raised	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
AFFECTED PARTIES				
Surrounding Landowner/s				
Mr. Leon Venter		 Mr. Venter is a landowner of portion 19 (newly purchased). He committed to provide comments by 29 June 2015.		Table 10 and Table 17

Mr. Hannes Meyer		25 June 2015	<ul style="list-style-type: none"> ☞ Mr. Meyer is a landowner of portion 13 (not residing on the farm). ☞ His daughter is residing on the farm. ☞ He has various wild life on his property – approximately 500ha of the farm is a wild camp. ☞ Access control is a problem. Access will not be allowed through his farm, he requests that access be obtained through the Bonza Game Camp to the north of his property. ☞ He must be contacted prior to access onto his property. ☞ He will require ongoing consultation and be informed on the daily progress and status of prospecting on his property – a detailed prospecting plan must be submitted to him. This must include the number of people and where they will be undertaking activities. ☞ His supervisor must be present during the undertaking of prospecting activities. ☞ The activities must hold benefit in for both parties. 	<p>The applicant will ensure to maintain an open channel of communication with the farm owners and neighboring farms throughout the prospecting activities. Drilling activities will only proceed once the drilling programme and location have been presented to the landowners and directly neighboring farmers.</p> <p>Access control will be an important component of the activities. The applicant will not access privately owned land without notifying the landowners. A detailed access control protocol will be established in consultation with the landowner to ensure the protection of animals on site.</p>	Table 10, Table 17 and Table 20
Lawful occupier/s of the land					
Mr. W de Jager		19 June 2015	<ul style="list-style-type: none"> ☞ He is still residing on the farm, now purchased by Mr. Venter. He however raised concerns regarding the presence of the Oliehout Tree. ☞ They are practicing Cattle Farming. 	<p>All protected tree species will be demarcated prior to the commencement of prospecting in specific areas and where these are present, these will be demarcated as to avoid any potential impacts.</p> <p>The applicant will ensure to maintain an open channel of communication with the farm owners and neighboring farms throughout the prospecting activities. Drilling activities will only proceed once the drilling programme and location have been presented to the landowners and directly neighboring farmers.</p> <p>Access control will be an important component of the daily activities. The applicant will not access privately owned land, without notifying the landowners. A detailed access control protocol will be established in consultation with the landowner to ensure the protection of animals on site.</p>	Table 10 and Table 17
Landowners or lawful occupiers on adjacent properties					
Johan Gous		19 June 2015	<ul style="list-style-type: none"> ☞ Concern on the impact of the activities on the <i>Olea Europaea Subsp. Africana</i> (Olienhout Tree). ☞ Sedibeng drilled for water in the area to supply the pipeline scheme and could not proceed due to the potential impact on the Olienhout Trees. ☞ Water levels are very shallow in the area 4-6m. 	<p>Comment noted, the prospecting will not undertake any significant dewatering and not water levels impacts are foreseen.</p> <p>All protected tree species will be demarcated prior to the commencement of prospecting in specific areas and where these are present, these will be</p>	Table 10 and Table 17

			<ul style="list-style-type: none"> ☛ Would not approve of small companies undertaking prospecting in the area, however, not to concerned with Petra as they are a bigger company and they are consulting. 	<p>demarcated as to avoid any potential impacts. The applicant will ensure to maintain an open channel of communication with the farm owners and neighboring farms throughout the prospecting activities. Drilling activities will only proceed once the drilling programme and location have been presented to the landowners and directly neighboring farmers.</p>	
Martinus van der Spuy	19 June 2015	<ul style="list-style-type: none"> ☛ Concern on the impact of the activities on the <i>Olea Europaea Subsp. Africana</i> (Olienhout Tree). A small drop in the water table and the trees will die. ☛ He is not convinced that there are diamonds where they want to prospect, De Beers have also prospected. He is willing to take the geologist around to indicate where potential areas may be present. ☛ Water quality in the area is very good can be lime. ☛ Water levels are approximately 5m deep with the borehole mostly drilled to 30m. ☛ Access must be monitored due to the presence of wild or exotic animals on the farms. ☛ Sedibeng would like to drill for water in the area, it is important to that the applicant establish their baseline water conditions as to not be involved in dewatering impacts and discussions in the future. ☛ He owns a mining permit on his property. 	<p>Comment noted, the prospecting will not undertake any significant dewatering and not water levels impacts are foreseen.</p> <p>All protected tree species will be demarcated prior to the commencement of prospecting in specific areas and where these are present, these will be demarcated as to avoid any potential impacts.</p> <p>The applicant will ensure to maintain an open channel of communication with the farm owners and neighboring farms throughout the prospecting activities.</p> <p>Access control will be an important component of the daily activities. The applicant will not access privately owned land, without notifying the landowners. A detailed access control protocol will be established in consultation with the landowner to ensure the protection of animals on site.</p>	Table 10 and Table 17	
Mrs. Kokkie York	19 June 2015	<ul style="list-style-type: none"> ☛ Concern on the impact of the activities on the <i>Olea Europaea Subsp. Africana</i> (Olienhout Tree). A small drop in the water table and the trees will die. ☛ Concerned about the rehabilitation of the activities as no topsoil is present in the area. ☛ Previous boreholes have been drilled on the farm, and this has not resulted in significant pacts, however excavations results in too great an impact and will not be approved. 	<p>No prospecting activities will take place on the farm owned by Mrs York.</p> <p>The prospecting activities will only involve sand sampling and drilling as invasive activities, no trenching or bulk sampling is planned for this phase of the prospecting application.</p> <p>A detailed rehabilitation programme as part of the EMP is presented in this report.</p> <p>Comment noted, the prospecting will not undertake any significant dewatering and not water levels impacts are foreseen.</p> <p>All protected tree species will be demarcated prior to the commencement of prospecting in specific areas and where these are present, these will be demarcated as to avoid any potential impacts.</p> <p>The applicant will ensure to maintain an open channel of communication with the farm owners and</p>	<p>Section d)ii)</p> <p>Table 10 and Table 17</p>	

				neighboring farms throughout the prospecting activities. Drilling activities will only proceed once the drilling programme and location have been presented to the landowners and directly neighboring farmers.	
Mrs. Faist		19 June 2015	☞ Access control is of great concern.	Access control will be an important component of the daily activities. The applicant will not access privately owned land, without notifying the landowners. A detailed access control protocol will be established in consultation with the landowner to ensure the protection of animals on site.	Section d)ii) Table 10 and Table 17
Municipal councilor					
None Received to date					
Municipality					
None Received to date					
Organs of state (Responsible for infrastructure that may be affected Roads Department,					
None Received to date					
Eskom, Telkom,					
None Received to date					
Communities					
None Received to date					
Dept. Land Affairs					
Ryan Oliver		11 June 2015	No land claims are present on site.	Comment noted.	

Traditional Leaders					
N/A					
Dept. Environmental Affairs					
None Received to date					
Other Competent Authorities affected					
DAFF	Mev. Mans	22 June 2015	<p>Protected plant species may occur such as the <i>Boscia albertrunca</i> ("Shepherd's Tree"). If any of the NFA listed protected tree species are present on site and affected by the proposed activities a license must be applied for and obtained prior to any disturbance.</p> <p>Kindly assess the potential impacts on slow growing protected tree species (if any), avoid negative impacts as far as possible and where impacts cannot be avoided, appropriate mitigation measures should be included in the EMP.</p> <p>The applicant may require a Flora Permit from the provincial Department of Environment and Nature Conservation for clearance of indigenous and provincially protected plant species.</p> <p>If a fauna and flora specialist study is conducted as part of the Basic Assessment, kindly provide a copy of the report to this office for comments (if deemed necessary).</p>	<p>A list and picture of protected plant species such as the Kameeldoring and the Shepherds trees will be provided to all contractors. All protected tree species will be demarcated prior to the commencement of prospecting in specific areas and where these are present, these will be demarcated as to avoid any potential impacts.</p> <p>The applicant will ensure to maintain an open channel of communication with the farm owners and neighboring farms throughout the prospecting activities. Drilling activities will only proceed once the drilling programme and location have been presented to the landowners and directly neighboring farmers.</p> <p>If and when required, a permit will be applied for.</p> <p>No detailed specialist study has been undertaken as part of the basic assessment process, due to the small scale of activities and the potential of successfully implementing management measures to reduce all potential impacts.</p>	Section d)ii) Table 10 and Table 17
<u>OTHER AFFECTED PARTIES</u>					
None Received to date					
<u>INTERESTED PARTIES</u>					
None Received to date					

Concluding Remarks on Stakeholder Consultation

Landowners have indicated their disapproval and early objection to this application subject to the agreement between themselves and the application regarding the management of environmental impacts and security of the area, game and livestock. Access control must be managed strictly with ongoing consultation between the applicant and the landowner. No water abstraction may be undertaken which will impact on the groundwater levels.

iv) The Environmental attributes associated with the alternatives

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

As discussed in the previous section, a subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of the proposed area. Based on the outcomes of that study, the possibility to encounter further Diamond Reserves was identified.

The proposed prospecting area is targeted as, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units, as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

The site is therefore regarded as the preferred site and alternative sites are not considered.

The company therefore applied for prospecting on the properties as discussed in this report to determine the presence of diamonds, and whether these are feasible to enter into further studies towards a Mining Right.

(1) Baseline Environment

(a) Type of environment affected by the proposed activity

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

Topography

The area under investigation is fairly flat (at 1 448m above mean sea level).

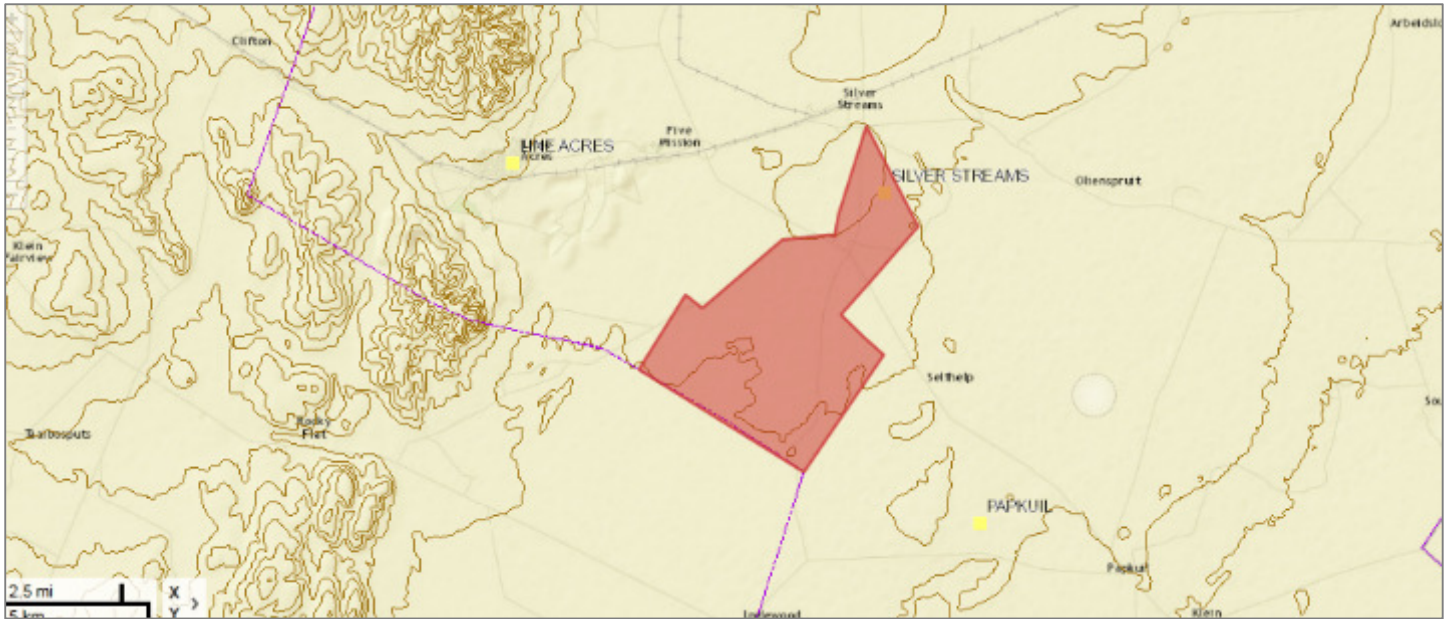


Figure 9: Topography

Climate

- Wind Speed and Direction

According to the Meteoblue: Climate Lime Acres Finsch Mine Airport, the average wind speed in the area is below 15km/hr, with the greatest wind speeds between the periods of October and December.

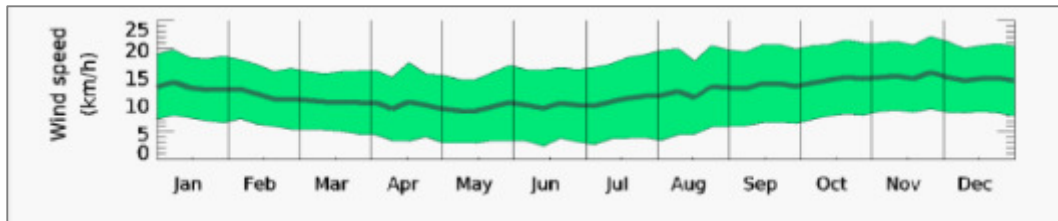


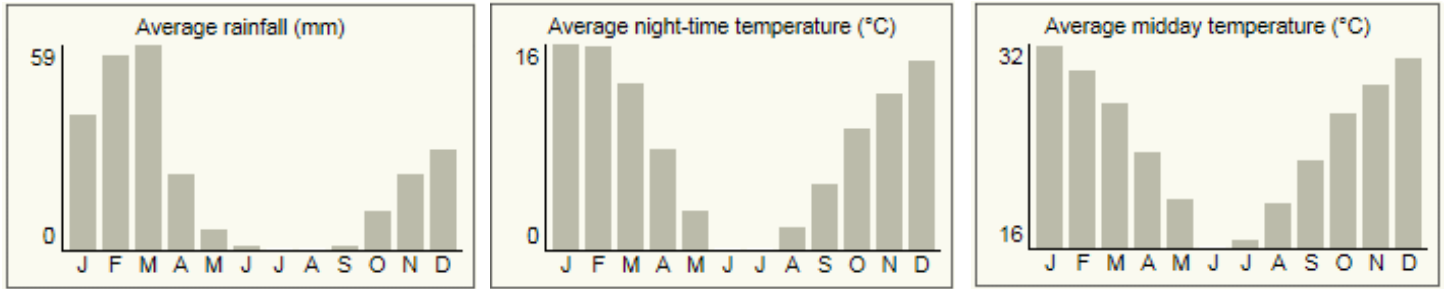
Figure 10: Wind Speed

The wind direction in the area, based on the Postmasburg Weather Station (period 200-2009) the winds in the area come predominantly from the north-easterly sectors.

- Rainfall and Temperature

The Lime Acres area generally receives about 246mm of rain per year, with most rainfall occurring mainly during summer. The chart below shows the average rainfall values for Lime Acres per month. It receives the lowest rainfall (0mm) in July and the highest (59mm) in March.

The monthly distribution of average daily maximum shows that the average midday temperatures for Lime Acres range from 15.9°C in June to 31.8°C in January. The region is the coldest during July when the mercury drops to -0.1°C on average during the night. See the chart below for an indication of the monthly variation of average minimum daily temperatures.



Frost occurs throughout the study area in winter, typically over the period mid-May to late August. The average number of frost days per year for the study area is 30 according to the Lower Vaal ISP (2004).

- Humidity

Humidity is generally highest in February (the daily mean over the study area ranges from 66% in the east to 62% in the west) and lowest in August (the daily mean over the study area ranges from 53% in the east to 57% in the west).

- Evaporation

Average gross potential mean annual evaporation (as measured by Class A-pan) ranges from 2 646mm to 2 690mm in the Lower Vaal WMA. The highest A-pan evaporation occurs in December and ranges between 300mm and 380mm.

📌 Geology

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

- Regional Geology

The north-eastern part of the Northern Cape Province is underlain by flat-lying Palaeozoic sediments of the Karoo Supergroup and sub-vertical Proterozoic lithologies of the Transvaal Supergroup. These overlie the Archaean Ventersdorp Supergroup, which in turn overlies the Archaean basement granite-gneiss terrane of the Kaapvaal Craton. The area under application lies approximately 180km from the southern and western edges of the Kaapvaal Craton.

Permian Dwyka-Ecca Group tillites, shales and marine sediments form the base of the Karoo succession. The continental arenaceous sediments of the Karoo Beaufort and Stormberg Groups have been eroded away in this area, and the Cretaceous amygdaloidal basalts of the Drakensburg lavas are only preserved as floating reefs in kimberlite pipes such as Finsch. The Transvaal Supergroup in this area forms the Griqualand West basin, typified by basal quartz arenites, a thick succession of dolomites and upper iron formations (see Figure 11). The Ventersdorp Supergroup comprises andesites and basaltic andesites of the Allanridge Formation, overlying arenaceous sediments in places. Kimberlite intrusions, some of which are diamondiferous, represent the final phase of.

Local Geology and Historic Information

The area under application covers 3 885.0782 Ha, and is situated approximately 125km east of Kimberley and approximately 45km north of Barkley West, in the Frances Baard District of the Northern Cape Province of South Africa.

The area lies towards the eastern edge of the Griqualand West basin, and consists of dolomite, limestone and chert of the Reivilo formation (2567Ma). The Griqualand West basin carbonates are known to host base metal mineralization, such as the Pering Pb-Zn deposit, as well as Mn/Co wad mineralization. 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 (see Figure 11). The Ghaap Group sediments are underlain by volcanics of the Ventersdorp Supergroup in the area applied for (see Figure 11). These are known to occur at a depth of approximately 400m from the Sedibeng JV Diamond mine 5km to the SE.

Several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

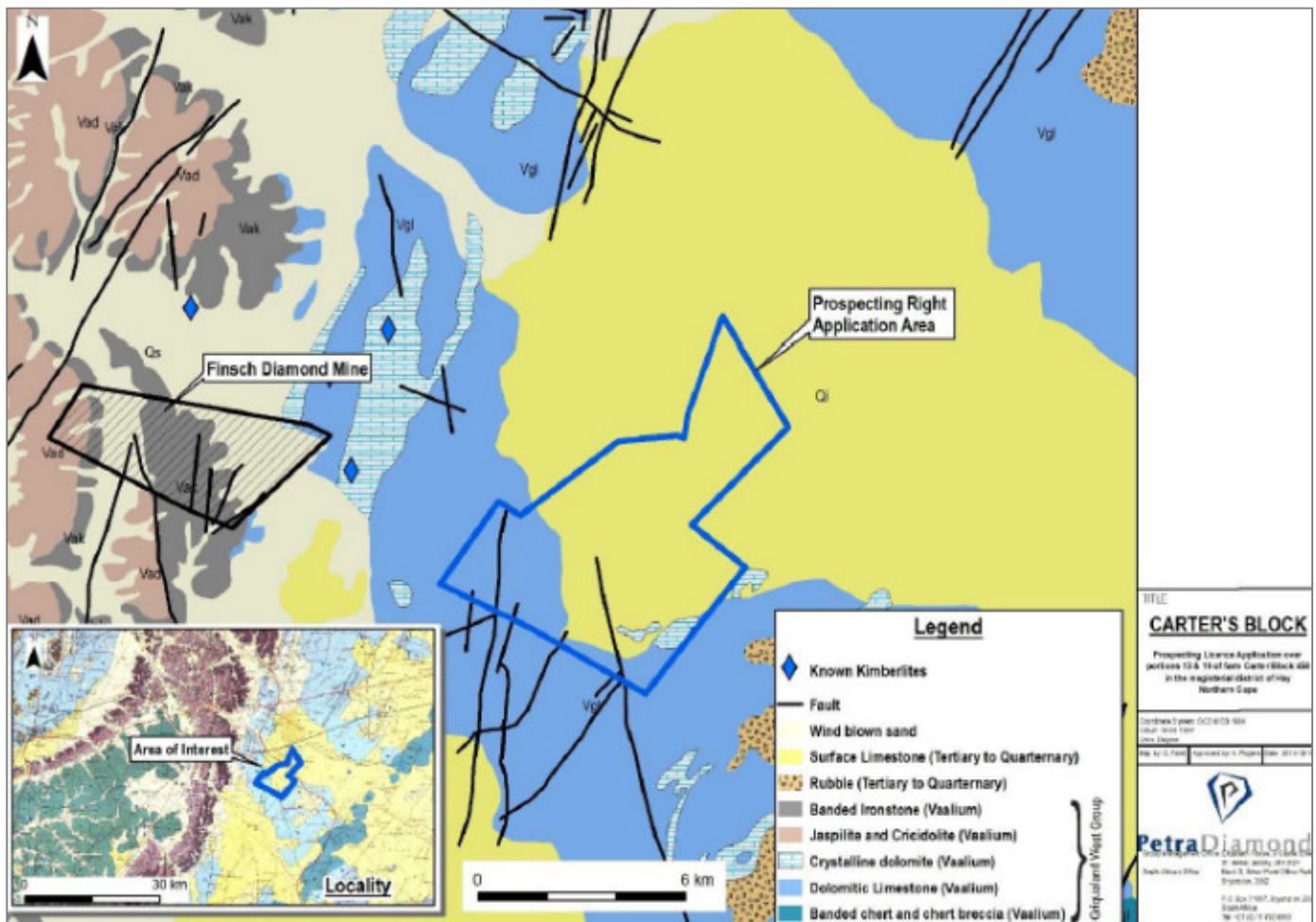


Figure 11: 1: 250 000 Geological Map

Land Capability and Land Use

The determination of the existing site specific and surrounding land use provides input into the process of impact identification and the establishment of closure objectives. Site specific land use has been confirmed as cattle farming and some exotic wild life.

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.

- Land Capability

According to the Agricultural Geo-Referenced Information System (AGIS) the prospecting site is classified as non-arable land with a low to moderate potential grazing land capacity.

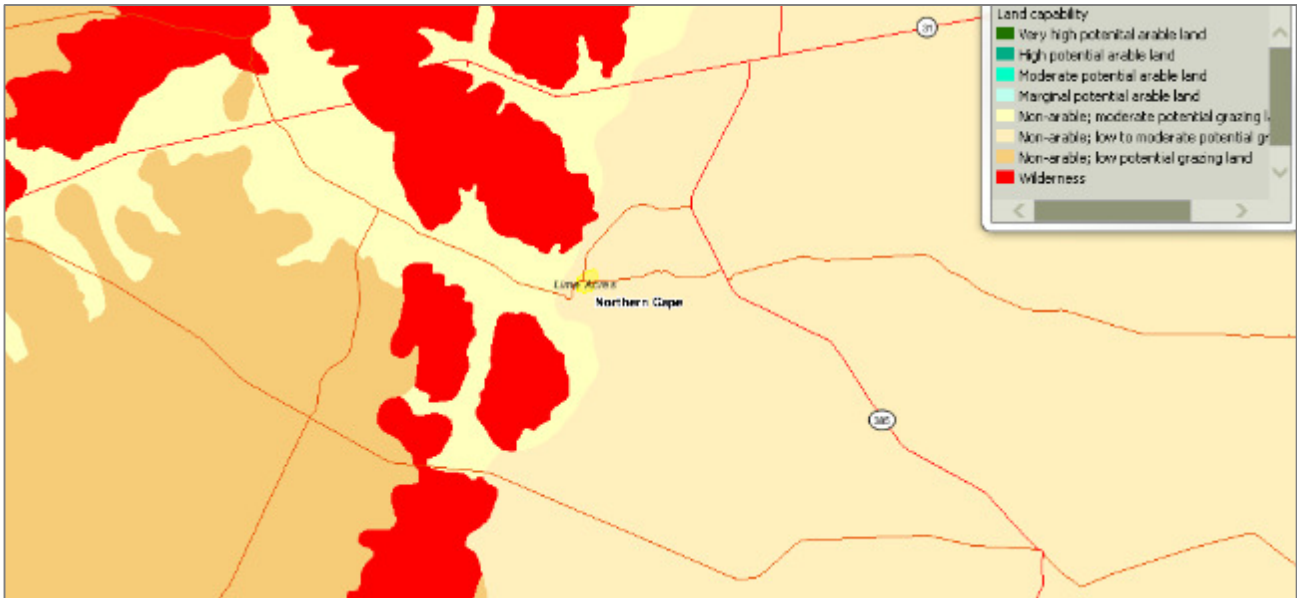


Figure 12: Land Capability (AGIS Comprehensive Atlas)

- Land Use

As a result of the land capability, cattle and game farming is the predominant land use in the area.

In accordance with comments received during previous stakeholder consultation processes in this area, it was confirmed that both commercial and subsistence cattle farming is the predominant income generating land use activity.

On a regional scale, the municipality houses a variety of mining industry from manganese, iron ore, diamonds and lime.

- Land Claims

According to a letter received from the Department of Land Affairs dated 11 June 2015, no land claims are have been lodges against the land portions which will be subject to prospecting activities. .

Water Resources

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

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

water quality deterioration.

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

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

The proposed prospecting site falls within the Lower Vaal Water Management Area, and falls within the Quaternary Catchment Area C92A and C92C (please refer to Figure 13).



Figure 13: Location of the Proposed Prospecting Site in relation to the Quaternary Catchment Area 92 A and C

According to the Lower Vaal ISP (2004), the Lower Vaal WMA is dependent on water releases from the Middle Vaal WMA for meeting the bulk of the water requirements by the urban, mining and industrial sectors within its area of jurisdiction, with local resources mainly used for irrigation and smaller towns. Water quality in the Lower Vaal is strongly influenced by usage and management practices in the Upper and Middle Vaal WMA. Major rivers in the Lower Vaal Water Management Area include the Molopo, Harts, Dry, Harts, Kuruman and Vaal rivers, of which the Vaal River is the closest to this prospecting area. The Klein-Riet Spruit is a tributary to the Vaal River, flowing approximately 65km in a south-easterly direction until it joins this major river system.

The Department of Water Affairs (DWA) considers this catchment area to be of moderate ecological sensitivity. Based on the information contained in the Overview of Water Resources Availability and Utilisation Report for the Lower Vaal Management Areas (DWA Report No: P WMA 10/000/00/0203, September 2003), the primary water use is agricultural irrigation, which comprises more than 80% of water use in the region.

o Surface Water

According to the Lower Vaal WMA Overview of Water Resources Availability Report, DWAF (2003a) (as stated in the ISP, 2004), "As a result of the low rainfall, flat topography and sandy soils over much of the water management area, little usable surface runoff is generated in the water management area. The runoff which does occur is highly variable and intermittent.

The Mean Annual Runoff of the Vaal downstream of Bloemhof Sub Catchment is approximately 43 million m³/annum.

Based on a review of the Department of Water Affairs Aquatic Database and Google Earth maps, several non-perennial pans and streams were identified on the proposed prospecting site (please refer to Figure 14).

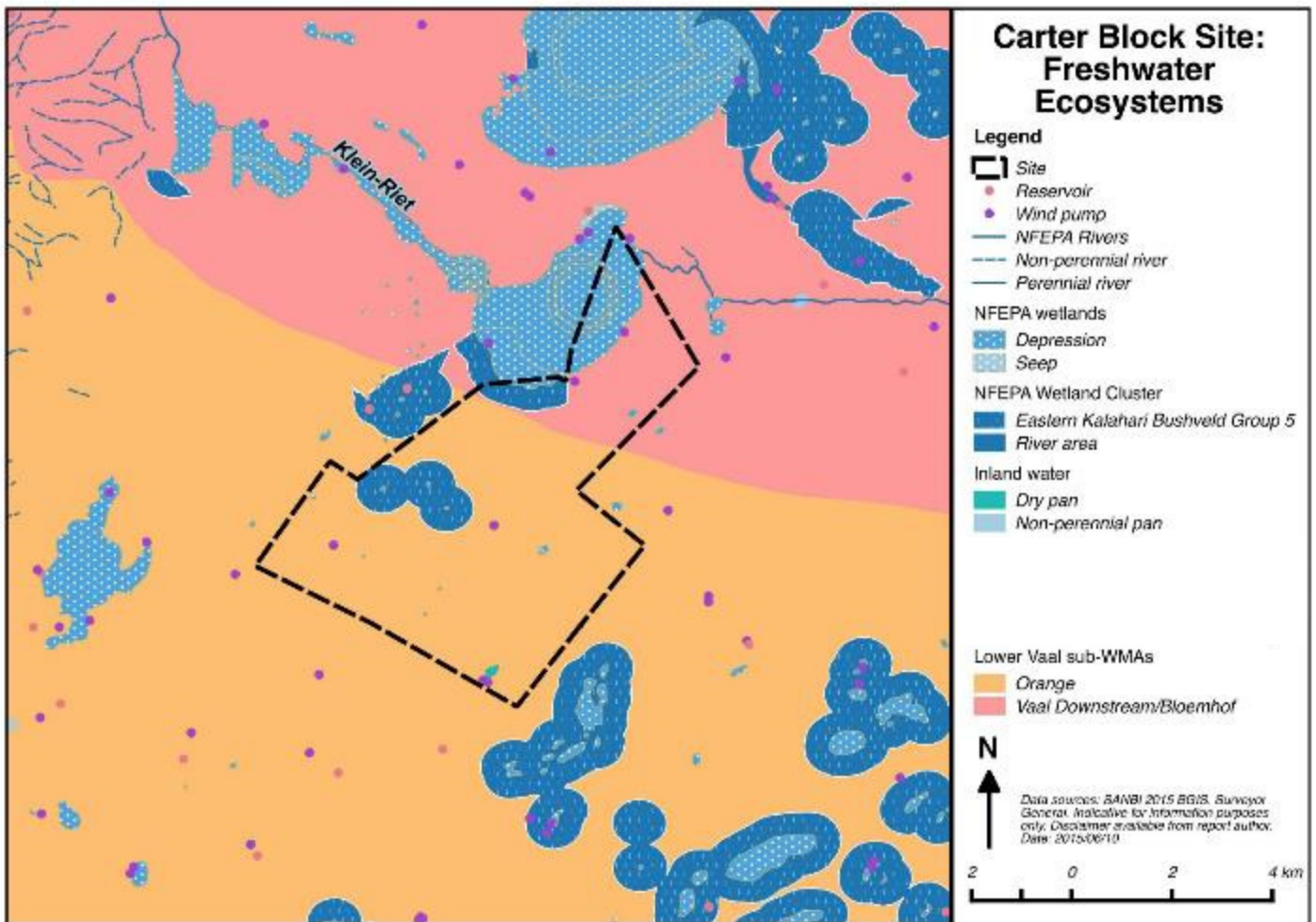


Figure 14: Location of the river systems within the area

There is one, non-perennial river in terms of the DWA Database to the north-east of the site, namely the Klein-Riet Spruit. The Klein-Riet Spruit flows in a south-easterly direction for approximately 65km where it then merges with the Vaal River. A major pan system is located on the most northern portion of the proposed prospecting area, the Rooipan.

Figure 14 shows the water bodies on site and adjacent rivers, and further indicates the water resources classified in terms of the National Freshwater Ecosystem Protected Areas. From this figure it is evident that pans are present on site. These pans are also indicated as part of the ecological vegetation type

(Southern Kalahari Salt Plans). These pans are generally known to keep water for short period of time during rain events.

- o Groundwater

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



Figure 15: Aquifer Vulnerability of South Africa

According to Figure 15 of the Department of Water Affairs Aquifer Vulnerability of South Africa Report, the area in which the project is located is considered to be associated with aquifers with the most vulnerability ratings. This map indicates the tendency or likelihood for contamination to reach a specified position in the groundwater system after introduction at some location above the uppermost aquifer. Green represents the least vulnerable region that is only vulnerable to conservative pollutants in the long term when continuously discharged or leached. Yellow represents the moderately vulnerable region which is vulnerable to some pollutants, but only when continuously discharged or leached. Red represents the most vulnerable aquifer region, which is vulnerable to many pollutants except those strongly absorbed or readily transformed in many pollution scenarios.

In accordance with feedback received during the previous stakeholder consultation process undertaken during June 2015, a high dependency on groundwater resources was confirmed. While a hydrocensus was not undertaken as part of this assessment, farm owners reported borehole depths ranging from 5m with boreholes drilled to a depth of 30m.

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, Ghaap

Plateau Vaalbosveld Vegetation Type (SVk7), indicated in brown, with an area to the most northern corner characterized by the Southern Kalahari Salt Pans in indicated in yellow (AZi 4) (please refer to Figure 16). The last mentioned falls specifically in the Azonal Vegetation Biome. The descriptions for the vegetation types were obtained from Vegetation Map of South Africa, Lesotho and Swaziland by Muchina & Rutherford, (2006).

The Ghaap Plateau Vaalbosveld distribution is found in the Northern Cape and North-West Provinces around the flat plateau from around Campbell in the south, east of Danielskuil through Reivilo to around Vrybrg in the north at altitudes of 1 100 to 1 500m above mean sea level.

The vegetation and landscape features include flat plateau with a well-developed shrub layer with *Tarchananthus camphoratus* and *Acacia karroo*. Open tree layer as *Olea europaea subsp. africana*, *A. tortilis*, *Ziziphus mucronata* and *Rhus lancea*. *Olea* is more important in the southern parts of the unit, while *A. tortilis*, *A. hebeclada* and *A. mellifera* are more important in the north and part of the west of the unit. Much of the south-central part of this unit is remarkably low cover of *Acacia* species for an arid savanna and is dominated by the non-thorny *T. camphoratus*, *R. lancea* and *O. europaea subsp. africana*.

The conservation status of the area is least threatened. The erosion in the area is very low and only about 1% of the vegetation type has already been transformed.

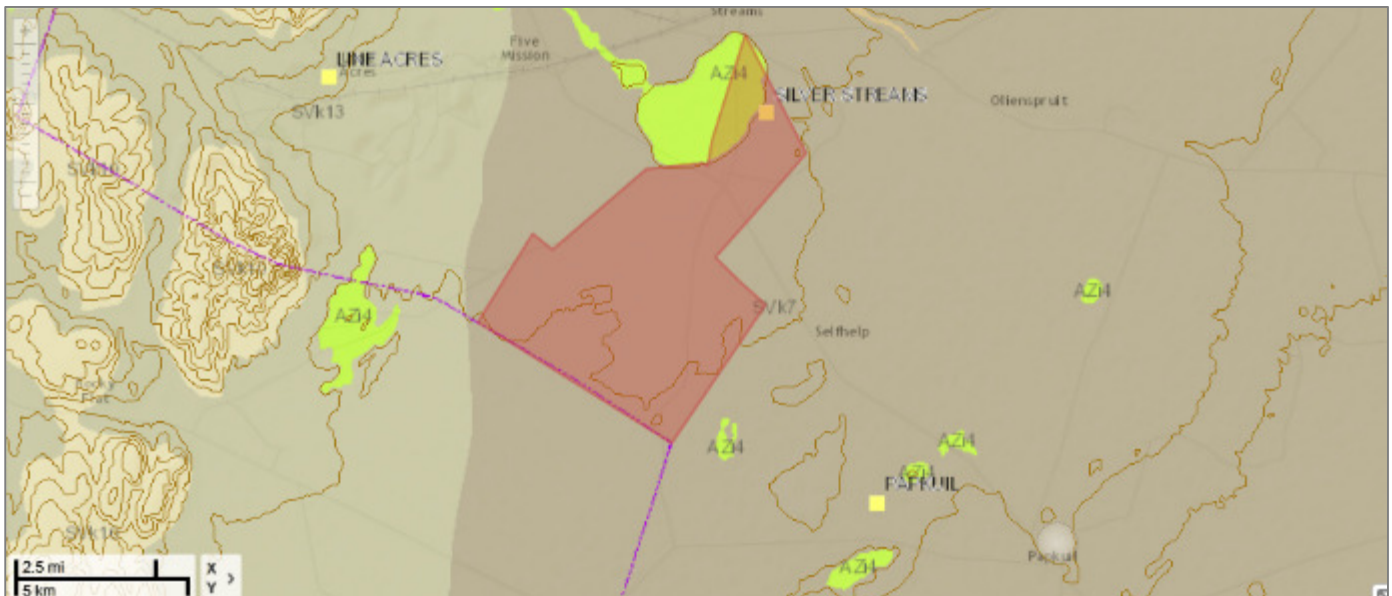


Figure 16: Vegetation Types

The Ghaap Plateau Vaalbosveld distribution is found in the Northern Cape and North-West Provinces around the flat plateau from around Campbell in the south, east of Danielskuil through Reivilo to around Vrybrg in the north at altitudes of 1 100 to 1 500m above mean sea level.

The vegetation and landscape features include flat plateau with a well-developed shrub layer with *Tarchananthus camphoratus* and *Acacia karroo*. Open tree layer as *Olea europaea subsp. africana*, *A. tortilis*, *Ziziphus mucronata* and *Rhus lancea*. *Olea* is more important in the southern parts of the unit, while *A. tortilis*, *A. hebeclada* and *A. mellifera* are more important in the north and part of the west of the unit. Much of the south-central part of this unit is remarkably low cover of *Acacia* species for an arid savanna and is dominated by the non-thorny *T. camphoratus*, *R. lancea* and *O. europaea subsp. africana*.

The conservation status of the area is least threatened. The erosion in the area is very low and only about 1% of the vegetation type has already been transformed.

Important Taxa includes:

- Tall Tree: *Acacia erioloba*
- Small Trees: *Acacia mellifera* subsp. *detinens* (d), *Rhus lancea* (d), *Acacia karroo*, *A. tortilis* subsp. *heteracantha*, *Boscia albitrunca*.
- Tall Shubs: *Olea europaea* subsp. *Africana* (d), *Rhigozum trichotomum* (d), *Tarchonanthus camphoratus* (d), *Ziiphus mucronata* (d), *Diospyros austro-africana*, *D. pallens*, *Ehretia rigida* subsp. *rigida*, *Euclea crispa* subsp. *ovata*, *Grewia flava*, *Gymnosporia buxifolia*, *Lessertia frutesces*, *Rhus tridactyla*.
- Low Shrubs: *Acacia hebeclada* subsp. *hebeclada* (d), *Aptosimum procumbens*, *Chrysocoma cilata*, *Helichrysum zeyheri*, *Hemannia comosa*, *Lantana rugose*, *Leucas capensis*, *Melolobium microphyllum*, *Peliostomum leucorrhizum*, *Fentzia globose*, *F. firidis*, *Zygophyllum pubescens*.
- Succulent Shrubs: *Hertia pallens*, *Lycium cinereum*.
- Semi-parasitic Shrub: *Thesium hystrix*.
- Woody Climber: *Asparagus africanus*.
- Graminoids: *Antheophora pubescens* (d), *Cenchrus ciliaris* (d), *Digitaria eriantha* subsp. *eriantha* (d), *Enneapogon scoparius* (d) *Eragrotis lehmanniana* (d), *Schmidtia pappophoroides* (d), *Themeda triandra* (d), *Aristida adscensionis*, *A. congesta*, *A. diffusa*, *Cymbopogon pospischilii*, *Enneapogon cenchroides*, *E. desvauxii*, *Eragrotis echinochloidea*, *E. obtuse*, *E. rigidior*, *E. superba*, *Fingerhuthia Africana*, *Heteropogon contortus*, *Sporobolus fimbriatus*, *Stipagrotis uniplumis*, *Tragus racemosus*.
- Herbs: *Barleria macrostegia*, *Geigeria filifolia*, *G. orativa*, *Gisekia Africana*, *Helichrysum cerastioides*, *Heliotropium ciliatum*, *Hermbstaedia odorata*, *Hibiscus marlothianus*, *H. pusillus*, *Jamesbrittenia aurantiaca*, *Limeum fenestratum*, *Lippia scaberrima*, *Selago densiflora*, *Vahlia capensis* subsp. *vulgaris*.
- Succulent Herb: *Aloe grandidentata*.

Biographically important taxa includes:

- Tall shrubs: *Lebeckia macrantha* (GW), *Nuxia gracilis* (D).
- Low Shrubs: *Blepharis marginata* (GW), *Putterlickia saxatilis* (GW), *Tarchonanthus obovatus* (GW).
- Succulent Shrubs: *Euphorbia wilmaniae* (GW), *Prepodesma orpenii* (GW – endemic genus).
- Graminoids: *Digitaria polyphylla* (GW), *Panicum kalaharensis* (K).
- Herbs: *Corchorus pinnatipartitus* (GW), *Helichrysum arenicola* (K).
- Succulent Herb: *Orbea knobelii* (K).

Endemic Taxon only includes an herb namely *Rennera stellate*.

Based on the Finsch EMP undertaken for this area during August 2015, a breeding pair of black eagles (*Aquila verreauxii*) nest in this area, as well as the Lesser falcons, Rock kestrels and Alpine swifts. One the

avifauna only the raptor species enjoy protected status. Other raptor bird species observed on site during the 2013 assessment included the Barn Owl (*Tyto alba*) and the Black Shouldered Kite (*Elanus caeruleus*).

The 2013 study also identified 16 mammal species which have been recorded in the surrounding area. The following species were found: Kudu, Porcupines, Aardvark, Brown Hyena, Caracal, Common Jackal, Black-backed Jackal, Bat-eared fox and the Cape Hare.

Heritage Resources

A Heritage Impact Assessment was not undertaken as part of the development of the impact assessment. Based on available Geographic Information System data, no grave are indicated within the prospecting area. (Please refer to Figure 17). However, during the site visit a formal grave was observed just west of the R385, on the northern side of the access road to the residential holdings of Farm Portion 19.

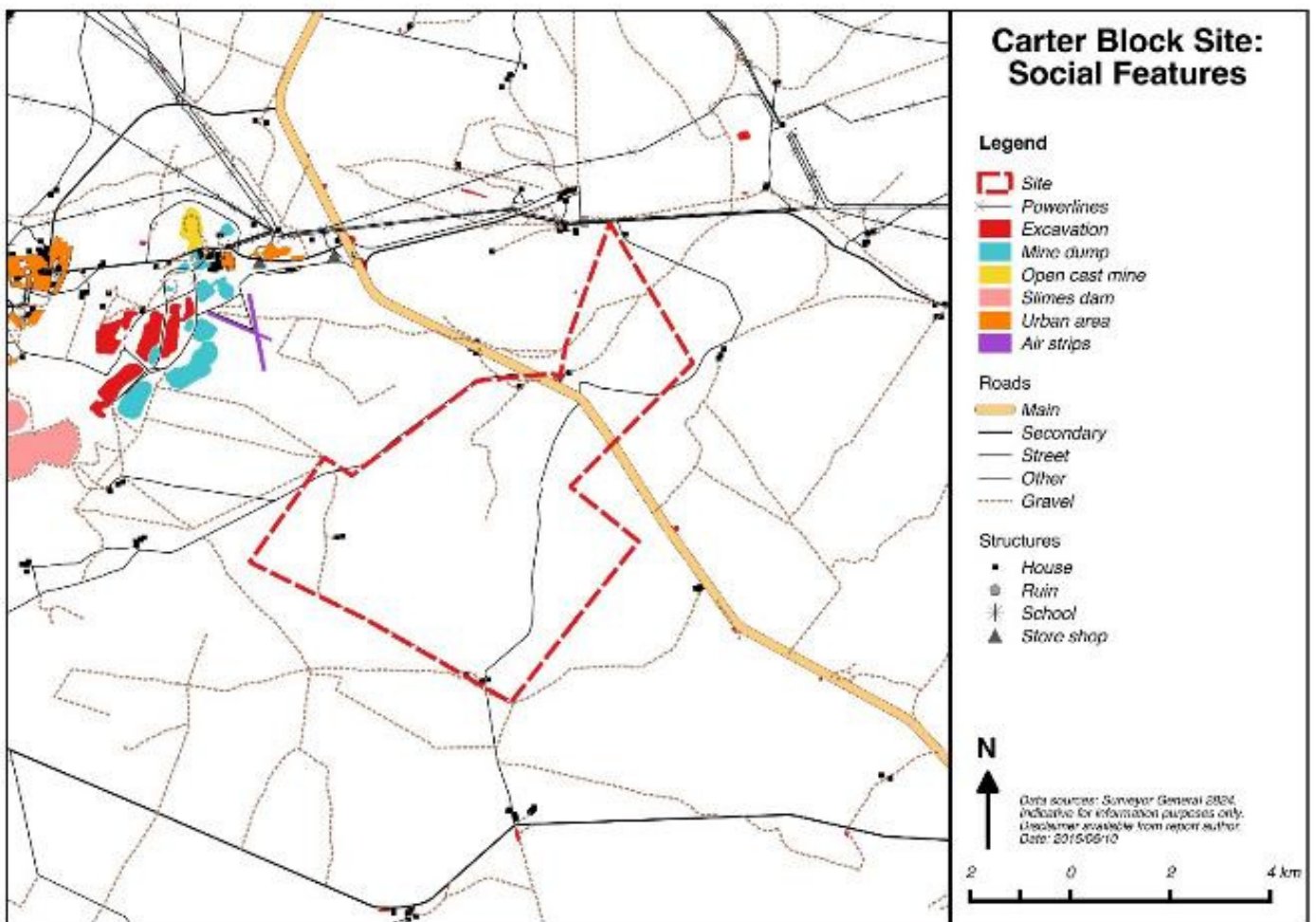


Figure 17: Social Features

As outlined in Section d)ii), page 16 of this report, prospecting will be undertaken in phases; the first phase being a desktop assessment, followed by ground and / or aerial magnetic survey and soil sampling.

Based on the outcome of these activities, soil sampling and potential drill sites will be determined. Potential heritage impact will only occur once soil sampling and geophysics have been used to identify sites for drilling, and it is therefore recommended that the Heritage Impact Assessment be undertaken prior to drilling

activities, and that the Heritage Impact Assessment be conducted over identified localised drill sites and access routes, as opposed to the entire exploration area.

This recommendation will be submitted to the South African Heritage Resource Agency (SAHRA) for approval.

Socio-Economic Environment

Kgatelopele Local Municipality is a category B municipality found in the Northern Cape. It was formerly known as Danielskuil Municipal District. This region includes the towns of Danielskuil and Lime Acres. Kgatelopele is a Setswana name that means “progress”.

The Kgatelopele Local Municipality has a total population of 18 687. Female-headed households stand at 29,7%, and there are 102,8 males per 100 females. The most commonly spoken language is Afrikaans at 58% and is followed by Setswana at 33%.

Danielskuil boasts many different historical sites. For an informative historical day trip, make your way to Wonderwerk Cave just 40km outside Danielskuil where proof of human existence dating back 800 000 years can be discovered and explored. Archaeological research at this massive cave site has revealed and proved an immensely long record of human and environmental history, spanning hundreds of thousands of years. This mystical cave, as well as its surroundings, forms a conservation area with several distinctive features of the gorgeous Kuruman Hills. The site is open to the public and includes an interpretative centre nearby the cave. Other historical sites include the Vermeulen grave, Dutch Reformed Church, Old Town Hall and many more. Danielskuil boasts rather warm summers, beautiful landscapes and superb amenities. It's a rather tranquil town where the people have formed a united community, and boasts an abundance of beauty as well as a rich cultural heritage.

It has about 5,381 households and the population's electricity access is quite high (91.66%). Of the households, 98,0% have access to water and 93,2% of the population has access to a flush toilet. Access to internet facilities is standing at 34,8%, and 92,1 % has access to refuse removal.

Large-scale mining of lime at Danielskuil has led to growth and development.

Typically, mining and agriculture are the largest employment creators.

“Evaporating gravestones” near Danielskuil was the first indication to the rich limestone deposits found at what was to become the mining village of Lime Acres.

The discovery of diamonds in Kimberley led to colonization of Griqualand by the English authorities in Cape Town. Subsequently, the Griqua people became scattered. The town of Danielskuil obtained official status in 1892. For over 80 years after that, Danielskuil mainly provided support for the farming community.

The rather large-scale mining of lime at Danielskuil has led to its growth and development. Since 1974, Idwala Limes has been mining the lime deposits dating back 200 million years. Over 5 million tons of stone is mined annually.

The following demographic information (as included in Table 9) for the Kgatelopele Local Municipality has been sourced from the Census 2011 Municipal Fact Sheet, published by Statistics South Africa.

Table 9: Demographic Information

Population:	18 687
Age Structure	
Population Under 15:	29.5%
Population 15 To 64:	66.4%
Population Over 65:	4.1%
Population Growth	
Per annum:	2.37%
Labour market	
Unemployment Rate (official):	22.3%
Youth Unemployment Rate (official) 15-34:	29.1%
Education (aged 20 +)	
No Schooling:	12.2%
Higher Education:	9.1%
Matric:	25.5%

(b) Description of the current land uses

Based on the available information and observations on site the land portions included in the prospecting right application is currently utilized for cattle farming and some exotic wild life and is all privately owned.

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

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

Based on the outcomes of the initial prospecting phases (non-site disturbing activities), the location of any on-site sampling and drilling will be determined (site disturbing activities). No drilling will be undertaken within 32m from any watercourses or pans.

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

(d) Environmental and current land use map

(Show all environmental, and current land use features)

Please refer to Figure 14 (topography and water resources), Figure 16 (vegetation types), and Figure 17 (social features), indicating the environmental and land use features associated with the proposed prospecting area.

v) **Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed**

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

The following table illustrates the potential impacts associated with each activity.

Table 10: Potential impacts per activity and listed activities

Phase		Activities	Potential Impacts	Reversible	Irreplaceable Damage	Can impact be avoided
Phase 1: Data Acquisition and Desktop Study						
Phase 1: Data Acquisition	N/A	Data collection and assessment (desktop only)	1. None identified.	N/A	N/A	N/A
Phase 1: Desktop Study	N/A	Data Assessment	2. None identified.	N/A	N/A	N/A
Phase 2: Target Generation and Ground Truthing						
Phase 2: Airborne geophysics survey	N/A	Site fly-over (flying height of approximately 25m over a period of approximately 1 week)	3. Noise impacts resulting from site fly-overs affecting cattle and game farm animals. 4. Nuisance noise impacts on communities and landowners and other persons.	Yes	No	No
Phase 2: Ground geophysics survey	N/A	Ground survey	5. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Yes	No	Yes
Phase 2: Soil Sampling	Construction Phase	No construction or site establishment activities will be undertaken	6. No anticipated impacts.	N/A	N/A	N/A
	Operational Phase	Site access	7. Destruction and / or disturbance of on-site fauna and flora.	Partial	No	Yes
			8. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Yes	No	Yes
			9. Vehicle traffic noise impact affecting cattle and / or wildlife.	Yes	No	Yes
			10. Poor housekeeping could result in littering and the associated impacts this will have on the aesthetics of the area, contamination of river systems in the rainy season and also the potential health hazard to cattle.	Yes	No	Yes
11. Activities within the river bed could result in the disturbance to the natural geomorphology.	Partial	Potential	Yes			
12. Activities within the river bed could result in safety hazards during rainy periods.	No	No	Yes			
		Soil sampling (approximately 30kg of soil per sample)	13. Soil disturbance from soil sampling resulting in soil structure disturbance / destruction and possibly soil erosion.	Yes	No	No

	Decommissioning Phase	No decommissioning activities will be required	14. No anticipated impacts.	N/A	N/A	N/A
Phase 3: Scout Drilling and Delineation Drilling						
	Construction	Site Access	15. Destruction and / or disturbance of on-site fauna and flora.	Partial	No	Yes
			16. Soil compaction resulting from repeated use of access roads to drill sites.	Yes	No	No
			17. Vehicle traffic noise impact affecting cattle and / or wildlife.	Yes	No	No
			18. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Yes	No	Yes
			19. Potential destruction of heritage resources.	No	Yes	Yes
		Site establishment activities including: (a) <i>Vegetation clearing of drill pad area</i> (b) <i>Topsoil stripping and stockpiling</i> (c) <i>Drill pad compaction</i> (d) <i>Excavation and lining of drill water sump</i> (e) <i>Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</i> (f) <i>Erection of fuel storage tank</i> (g) <i>Erection of safety barrier</i> (h) <i>Waste generation and management</i>	20. Destruction and / or disturbance of on-site fauna and flora.	Partial	No	Yes
			21. Soil disturbance and compaction and topsoil stockpiling resulting in soil erosion.	Yes	Partial	No
			22. Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	Yes	No	Yes
			23. Visual impact affecting visual character and "sense of place".	Yes	No	Partial
			24. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Yes	No	Partial
	Operation	Exploration drilling and core sample collection and storage including: (a) <i>Scout and delineation drilling</i>	25. Potential destruction of heritage resources.	No	Yes	Yes
			26. Water and soil pollution resulting from disposal of drill fluids.	Yes	Partial	Yes
			27. Continued soil erosion from topsoil stockpile and compaction from drill pad platform.	Yes	No	Yes

		(b) <i>Drill maintenance and re-fuelling</i>	28. Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	Yes	Partial	Yes
		(c) <i>Core sample collection and storage</i>	29. Dust emissions from drilling and general site activities (including vehicle entrained dust).	Yes	No	Yes
		(d) <i>Drill fluid collection, storage and evaporation</i>	30. Visual Impact affecting visual character and "sense of place".	Yes	No	Partial
		(e) <i>Waste generation and management</i>	31. Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Yes	No	Partial
			32. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	No	No	Yes
			33. Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Yes	No	Partial
			34. Impact on the pans and associated ecosystems in the area.	No	Yes	Yes
	Decommissioning	Removal of temporary infrastructure including: (a) <i>Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay</i> (b) <i>Borehole capping</i> Drill pad rehabilitation including: (a) <i>Ripping of drill pad and access road</i> (b) <i>Re-spreading of stockpiled topsoil</i> (c) <i>Re-vegetation</i>	35. Dust emissions from decommissioning activities (including vehicle entrained dust).	Yes	No	Yes
			36. Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	No	No	Yes
			37. Potential water and soil pollution resulting from hydrocarbon spills.	Yes	Partial	Yes
			38. Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	Yes	No	Yes

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

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

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 significance is regarded as the sum of the impact extent, duration, probability and intensity and a numerical rating system has been applied to evaluate impact significance; therefore an impact magnitude and significance rating is applied to rate each identified impact in terms of its overall magnitude and significance (Table 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.

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

Impact Extent

The extent of an impact is considered as to whether impacts are either limited in extent or 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
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



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

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	Impact 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

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

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 impacts, mitigation is either easily achieved or little will be required, or both. Social, cultural, and economic activities of communities can continue unchanged.	- 1 – 5
	Medium	Impact is real, but not substantial in relation to other impacts that might take effect within the bounds of those that could occur. In the case of adverse impacts, mitigation is both feasible and fairly possible. Social cultural and economic activities of communities are changed but can be continued (albeit in a different form). Modification of the project design or alternative action may be required.	- 6 – 11
	High	Of the highest order possible within the bounds of impacts that could occur. In the case of adverse impacts, there is no possible mitigation that could offset the impact, or mitigation is difficult, expensive, time-consuming or a combination of these. Social, cultural and economic activities of communities are disrupted to such an extent that these come to a halt.	- 12 - 16

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

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

As discussed in the previous section, a subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of the proposed area. Based on the outcomes of that study, the possibility to encounter further Diamond Reserves was identified.

The proposed prospecting area is targeted as, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units, as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

The site is therefore regarded as the preferred site and alternative sites are not considered.

Potential Impact on Protected Tree Species

The Kameeldoring Tree, Shepard's Tree and Olienhout Tree may be present in this area. These tree species are

protected, with the exception of the Olienhout Tree, which is regarded as of high importance to the local farmers in the area. The unplanned clearing of land could result in the damaging of these species. With early identification and management measures any potential impact can be avoided.

Potential impact on heritage resources

A formal grave site have been identified during the site visit. Though a Heritage Impact Assessment was not undertaken as part of the development of the Draft Environmental Management Plan, these will be of heritage and/or archaeological value.

The potential for the presence of stone kraals are also likely based on the past studies in the surrounding areas. It is anticipated that these features may have heritage and / or archaeological value.

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

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

The fact that the prospecting activities will be undertaken in a phased approach will provide the opportunity to the prospecting team to demarcate areas of cultural and/or heritage significance (such as graves and stone kraals). With the early identification of these the impact on these will be avoided.

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

The following impacts are regarded as community impacts:

- Potential water and soil pollution resulting from hydrocarbon spills and soil erosion;
- Noise due to the undertaking of the site fly-overs;
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime; and
- Visual Impact

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

Water quality and availability

There is one non-perennial river to the north-east of the site; the Klein-Riet Spruit. This Spruit feeds the Rooipan located on the most northern portion of the proposed area from where it flows approximately 65km in the south-easterly direction where it joins with the Vaal River.

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

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 storm water to the water courses.

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

Influx of persons resulting in increased crime rates

The potential impacts of an increase in crime rates associated with an influx of unemployed persons travelling to mine sites seeking employment may occur.

Visual impact

The general characteristics of the site and that of the surrounding area are regarded to be that of “wilderness” and prospecting activities may result in localized visual impacts. The surrounding area is however characterized by mining activities, and therefore this impact is regarded of low significance.

Positive Impacts (Advantage)

Based on existing mining activities in the area, the possibility to encounter further Diamond Reserves was identified. While no significant short term positive impacts are associated with the prospecting activities, in the event that a viable reserve is confirmed, and pending the outcome of a detailed social & environmental impact assessment process, positive socio-economic benefits must be investigated and optimized.

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

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

The section below provides a summary of the key management measures associated with the impacts identified in the previous section. The detailed rating and management plan is presented in Section J.

Measures to manage the potential impact on heritage resources

The fact that the prospecting activities will be undertaken in a phased approach will provide the opportunity to the prospecting team to demarcate areas of cultural and/or heritage significance (such as graves and stone kraals). With the early identification of these the impact on these will be avoided.

A Heritage Impact Assessment will be undertaken on each identified area where drilling activities are planned.

Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measures for the protection of such resources must be implemented.

Should any unknown heritage sites be identified during the drilling activities, all activities will cease immediately and the SAHRA will be contacted and an appropriate Heritage Impact Assessment will be undertaken on the site identified.

Measures to manage the potential impacts on communities, individuals or competing land uses in close proximity

- Loss of important Tree Species
 - Early identification of tree species listed in this report.
 - Demarcation of these trees to avoid the presence of any activities in these areas.
 - Where unavoidable, tree removal permits must be applied for.
- Pollution Prevention
 - Mitigation and management measures must be implemented to prevent environmental pollution which may impact on environmental resources utilized by communities, landowners and other stakeholders. These mitigation and management measures are discussed in the following section.
- Noise due to the undertaking of the site fly-overs and prospecting activities;
 - Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms.
 - Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, with a view to prevent possible injury or damage as a result of animals being startled by the noise.
 - Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
 - Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime;
 - Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
 - A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.
 - The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.
 - If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.
- Visual Impact
 - Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. Depending on the need and quantity of water used for wet

suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.

- The 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.
- A waste management system will be implemented and sufficient waste bins will be provided for on-site. A fine system will be implemented to further prohibit littering and poor housekeeping practices.

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

Measures to manage the potential impact on Water quality and availability

- Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion will be mitigated and managed as follows;
 - Existing tracks and roads must be used as far as is practicable to minimize the potential for soil erosion. In instances where access to drill sites are to be established, and if required, raised blade clearing will be undertaken with a view to maintain vegetation cover to limit soil erosion potential.
 - Soil disturbances are to be limited as far as is practicable to minimize the potential for soil erosion.
 - When establishing the drill pad, topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. Stockpiled topsoil will be used during rehabilitation efforts.
 - Where practicable topsoil will be stripped to a depth of 10cm.
 - Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3.
 - Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.
 - To reduce the potential for water pollution during the drilling activities, a sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation.
 - The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.
 - Oils and lubricant will be stored within secondary containment structures.
 - Where practicable, vehicle maintenance will be undertaken off-site.
 - In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil.
 - A waste management system will be implemented and sufficient waste bins will be provided for onsite. A fine system will be implemented to further prohibit littering and poor housekeeping practices.
 - Waste separation will be undertaken at source and separate receptacles will be

provided (i.e. general waste, recyclables and hazardous waste).

- Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.
- Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.
- 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.
- Drill holes must be permanently capped as soon as is practicable.

ix) Motivation where no alternative sites were considered

As discussed in the previous section, a subsidiary of Finsch Diamond Mine is successfully mining on the north-western boundary of the proposed area. Based on the outcomes of that study, the possibility to encounter further Diamond Reserves was identified.

The proposed prospecting area is targeted as, several kimberlite occurrences are known in the area, and number of these have been exploited for diamonds in the past, or are currently in operation. The Finsch kimberlite forms part of a cluster of Group II (Micaceous Kimberlites). The other Kimberlites in the cluster, Shone and Bowden as well as Botha, Smuts and Bonza were emplaced as satellite pipes and dyke sets, respectively. The kimberlite cluster was emplaced into the Karoo and Precambrian Griqualand West Supergroups. The Karoo units, as well as a good portion of the crater and diatreme facies of the kimberlites have since been eroded into paleo channels draining into the lower lying surrounding areas.

The site is therefore regarded as the preferred site and alternative sites are not considered.

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

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

As is clear from the information provided, each of the phases is dependent on the results of the preceding phase. The location and extent of soil sampling, and possible diamond drilling will be determined based on information derived from the geophysics surveys. Sampling and drill sites will be selected to avoid known heritage features and water courses where practicable.

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

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

In order to identify the potential impacts associated with the proposed prospecting activities the following steps were undertaken:

- The stakeholder consultation process is currently undertaken in a manner to be interactive, providing landowners and identified stakeholders with the opportunity to provide input into the

project. This is a key focus, as the local residence have capabilities of providing site specific information, which may not be available in desktop research material. Stakeholders are requested (as part of the BID) to provide their views on the project and any potential concerns which they may have. All comments and concerns will be captured and formulated into the impact assessment.

- During 2013 an Environmental Management Plan was undertaken for a Prospecting Right Application on the portions of land, applicable to this project. The baseline studies and impact findings, with strong focus on the views of the stakeholders at that time were incorporated into the assessment of impacts and the ranking of these.
- A detailed desktop investigation was undertaken to determine the environmental setting in which the project is located. Based on the desktop investigations various resources were used to determine the significance and sensitivity of the various environmental considerations. The desktop investigation involved the use of:
 - South African National Biodiversity Institute (SANBI) Biodiversity Geographic Database LUDS system;
 - Geographic Information System base maps;
 - Department of Water Affairs information documents such as the (ISP and Groundwater Vulnerability Reports);
 - AGIS;
 - Municipal Integrated Development Plan; etc.
- A site visit was undertaken on 19 June 2015. This site visit was utilized to ensure that the information gathered as part of the desktop investigation reflects the current status of the land.

The rating of the identified impacts were undertaken in a quantitative manner as provided from p51 (Impact Ratings). The ratings are undertaken in a manner to calculate the significance of each of the impacts. The EAP also assesses the outcomes of the calculation to determine whether the outcome reflects the perceived and actual views.

The identification of management measures are done based on the significance of the impacts and measures that have been considered appropriate and successful, specifically as Best Practical and Economical Options.

j) Assessment of each identified potentially significant impact and risk

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

Table 17: Impact Assessment and Management Type

NAME OF ACTIVITY (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.)	POTENTIAL IMPACT (Including the potential impacts for cumulative impacts) (e.g. dust, noise, drainage, surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc....)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	SIGNIFICANCE if not mitigated	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm- water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.) E.g.Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	SIGNIFICANCE if mitigated
Phase 1: Data Acquisition and Desktop Study						
Data collection and assessment (desktop only)	None identified.	N/A	Planning	N/A	No mitigation proposed	N/A
Data Assessment	None identified.	N/A	Planning	N/A	No mitigation proposed	N/A
Phase 2: Target Generation and Ground Truthing						
Site fly-over	Noise impacts resulting from site fly-overs affecting cattle and game farm animals.	Noise generation	Planning	-9	1. Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms. 2. Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, which may result in injury or	-7

					<p>damage.</p> <p>3. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>4. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p> <p>5. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	
	Nuisance noise impacts on communities and landowners and other persons.	Noise generation	Planning	7	6. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.	7
Ground surveys	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of Cattle	Planning	-10	<p>7. Access control procedures must be agreed on with farm owners and all staff trained on these procedures.</p> <p>8. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>9. Night security staff will be appointed during the presence of drilling equipment.</p> <p>10. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p> <p>11. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns.</p> <p>12. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>13. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with</p>	-6

					the farming activities are put in place.	
No construction or site establishment activities will be undertaken	No anticipated impacts.	N/A	N/A	N/A	14. No mitigation proposed.	N/A
Soil sampling (30kg of soil per sample)	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Operational Phase	-14	15. Use existing track and roads in all instances as far as is practicable. 16. As part of the soil sampling programme, no tracks will be cleared for once-off access to sampling sites. 17. Tree species such as the Kameeldoring Tree, Olienhout Tree and the shepherds Tree must be clearly demarcated when in proximity to prospecting activities. None of these species may be removed or damaged. 18. 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. 19. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna. 20. Vehicle speed will be reduced, particularly in highly vegetated areas to avoid deaths by vehicle impacts. 21. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching. 22. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 23. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.	-10
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Noise generation	Operational Phase	-10	24. Access control procedures must be agreed on with farm owners and all staff trained on these procedures. 25. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities	-7

	Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of cattle and/or nuisance creation	Operational Phase	-7	26. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.	-4
	Poor housekeeping could result in littering and the associated impacts this will have on the aesthetics of the area, contamination of river systems in the rainy season and also the potential health hazard to cattle	Loss of aesthetic value, loss of water resources, loss of fauna and flora	Operational Phase	-12	27. A waste management system will be implemented and sufficient waste bins will be provided for on site. A fine system will be implemented to further prohibit littering and poor housekeeping practices. 28. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 29. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight. 30. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility. 31. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching. 32. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 33. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.	-6
	Activities within the river bed could result in the disturbance to the natural geomorphology.	Loss of fauna and flora, altering the river bed	Operational Phase	-10	34. Only soil sampling may be undertaken in the river bed. No other activities (drilling, roads, etc.) may be undertaken. 35. Pans must be avoided, where possible. Where soil sampling is required this must be limited as far as practically possible and the area rehabilitated immediately.	-4
	Activities within the river bed could result in safety hazards	Loss and/or damage to life	Operational Phase	-11	36. No sampling within the riverbed will be permitted during rainy periods. 37. A first aid station and emergency plan must be available	-4

	during rainy periods.				on site.	
Soil sampling (30kg of soil per sample)	Soil disturbance from soil sampling resulting in soil structure destruction, compaction and erosion.	Loss soil resources	Operational Phase	-6	38. Soil disturbances are to be limited as far as is practicable.	-4
No decommissioning activities will be required	No anticipated impacts.	N/A	Decommissioning Phase	NA	39. No mitigation proposed.	N/A
40. Phase 3: Scout Drilling and Delineation Drilling						
Site Access	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	-15	41. A map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMR and DWS. Upon agreement of the location of the activities can the applicant proceed. 42. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 43. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 44. The area will be clearly demarcated and the EMP must be enforced. 45. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 46. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner. 47. Use existing track and roads in all instances as far as is practicable. 48. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation	-10

					<p>such as trees and large shrubs will be avoided.</p> <p>49. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.</p> <p>50. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p> <p>51. No permanent housing will be provided. No accommodation will be provide for on-site. Personnel will be house in surrounding towns. However, for the purposes of the drilling, a number of personnel may reside on demarcated campsites on the site. This will however be consulted with the landowners.</p>	
	Soil compaction resulting from repeated use of access roads to drill sites.	Loss of soil resources	Construction Phase	-8	<p>52. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts.</p> <p>53. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.</p>	-5
	Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of fauna	Construction Phase	-6	<p>54. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.</p>	-4
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of fauna	Construction Phase	-11	<p>55. Access control procedures must be agreed on with farm owners and staff trained.</p> <p>56. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>57. Night security staff will be appointed during the presence of drilling equipment.</p> <p>58. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns.</p> <p>59. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	-7
	Potential destruction of heritage resources.	Loss of Cultural and/or Heritage	Construction Phase		<p>60. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the</p>	

		Significance		protection of such resources must be implemented		
Site establishment activities including: <i>Vegetation clearing of drill pad area</i> <i>Topsoil stripping and stockpiling</i> <i>Drill pad compaction</i> <i>Excavation and lining of drill water sump</i> <i>Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</i> <i>Erection of fuel storage tank</i> <i>Erection of safety barrier</i> <i>Waste generation and management</i>	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	-15	61. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 62. The removal of vegetation within the drill pad area will be minimized. 63. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts. 64. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment. 65. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire. 66. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 67. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner. 68. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching. 69. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 70. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.	-10
	Soil disturbance and topsoil stockpiling resulting in soil	Loss of soil resources	Construction Phase	-11	71. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil.	-6

	compaction and erosion.				<p>72. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad.</p> <p>73. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>74. 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.</p> <p>75. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>76. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p>	
	Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	Dust emissions	Construction Phase	-10	<p>77. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed.</p> <p>78. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.</p>	-6
	Visual Impact affecting visual character and "sense of place".	Loss in aesthetics	Construction Phase	-9	<p>79. 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.</p>	-5
	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Construction Phase	-8	<p>80. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>81. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.</p> <p>82. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>83. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with</p>	-7

					<p>the farming activities are put in place.</p> <p>84. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>85. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	
	Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase		86. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	
Exploration drilling and core sample collection and storage including: <i>Scout and delineation drilling</i> <i>Drill maintenance and re-fuelling</i> <i>Core sample collection and storage</i> <i>Drill fluid collection, storage and evaporation</i> <i>Waste generation and management</i>	Water and soil pollution resulting from disposal of drill fluids.	Loss of water resources, loss of soil resources	Operational Phase	-12	87. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation. 88. The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.	-5
	Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	Loss of soil resources	Operational Phase	-10	89. 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. 90. The topsoil stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. 91. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	-6
	Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	Loss of water resources, loss of soil resources	Operational Phase	-12	92. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity. 93. Oils and lubricant will be stored within secondary containment structures. 94. Where practicable, vehicle maintenance will be undertaken off-site. 95. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays	-5

					<p>and / or UPVC sheets will be used to prevent spills and leaks onto the soil.</p> <p>96. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop.</p> <p>97. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified.</p> <p>98. A sufficient number of waste receptacles will be provided.</p> <p>99. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste).</p> <p>100. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.</p> <p>101. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>	
	Dust emissions from drilling and general site activities (including vehicle entrained dust)	Increase in dust emissions	Operational Phase	-9	<p>102. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement.</p> <p>103. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p>	-6
	Visual Impact affecting visual character and "sense of place"	Loss in aesthetic value	Operational Phase	-6	<p>104. Visual impact of structures will be mitigated through measures as included in Item 79.</p> <p>105. Visual dust dispersion will be mitigated through measures as included in Item 77-78.</p>	-5
	Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Loss of fauna	Operational Phase	-6	<p>106. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.</p>	-4
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Operational Phase	-10	<p>107. Access control procedures must be agreed on with farm owners.</p>	-7

	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Operational Phase	-8	<p>108. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>109. The landowner will be notified of unauthorised persons encountered on site.</p> <p>110. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>111. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p> <p>112. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>113. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	-6
	Impact on the pans and associated ecosystems in the area.	Loss of sensitive environments, loss of fauna, loss of flora	Operational Phase	-15	<p>114. The prospecting areas must be clearly demarcated.</p> <p>115. No prospecting activities may be undertaken within the pan areas.</p> <p>116. All site plans must indicate the presence of pans.</p>	-5
Removal of temporary infrastructure including: <i>Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay Borehole capping</i>	Destruction and / or disturbance of on-site fauna.	Loss of sensitive environments, loss of fauna, loss of flora	Decommissioning	-14	<p>117. 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.</p> <p>118. Drill holes must be permanently capped as soon as is practicable</p>	-6
	Dust emissions from decommissioning	Increase in dust emissions	Decommissioning	-9	<p>119. Based on visual observation wet dust suppression will be undertaken to manage dust</p>	-5

Drill pad rehabilitation including: <i>Ripping of drill pad and access road</i> <i>Re-spreading of stockpiled topsoil</i> <i>Re-vegetation</i>	activities (including vehicle entrained dust).				emissions from vehicle movement. 120. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.	
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Decommissioning	-10	121. Access control procedures must be agreed on with farm owners and all staff trained. 122. An Environmental Control Officer must remain present on site, at least once a month to ensure that all components of the EMP is addressed. 123. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.	-7
	Potential water and soil pollution resulting from hydrocarbon spills.	Loss of water resources, loss of soil resources	Decommissioning	-12	124. All fuel storage tanks will be emptied prior to removal. 125. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination. 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 a licensed recycling facility.	-6
	Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	Loss of soil resources	Decommissioning	-11	127. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles. 128. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist. 129. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. 130. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.	-7

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



k) Summary of specialist reports.

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

STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
No specialist studies have undertaken.	N/A	N/A	N/A

Attach copies of Specialist Reports as appendices (N/A).



l) Environmental impact statement

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

- ☞ The area under investigation is fairly flat. The site falls within a semi-arid rainfall region with relative low rainfall which slightly reduced the potential impacts associated with soil erosion.
- ☞ The predominant wind direction as measured at the Postmasburg Weather Station, is from the north east and wind speeds are higher during the spring and summer months. 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 proposed prospecting site is classified as non-arable land with a low to moderate grazing capacity with cattle and game farming is the predominant land use in the area.
- ☞ 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. A high dependency on ground water resources has been identified and this will be confirmed during stakeholder consultation. According to the Department of Water Affairs Aquifer Vulnerability of South Africa Report, the area in which the project is located is considered to be associated with aquifers with the most vulnerability ratings.
- ☞ There is one non-perennial river the Klein-Riet Spruit located outside the boundaries of the proposed prospecting area and one large pan area (Rooi Pan) located within the boundaries of the prospecting area. The identified water courses (including rivers, streams and pans) may be regarded as unique habitats which support regional ecological functioning.
- ☞ Graves are present within the prospecting area. It appears that the graves are in close proximity to houses / residences within the prospecting area.
- ☞ Sensitive and protected tree species are present on site and should receive specific attention during the establishment of activities.

ii) Final Site Map

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

Please refer to Annexure H for the composite map.

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

- ☞ Increased ambient noise levels resulting from geophysics surveys site fly-overs and increased traffic movement during all prospecting phases as well as drilling activities.
- ☞ Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on environmental resources utilized by communities, landowners and other stakeholders.
- ☞ Potential water and soil pollution impacts resulting from hydrocarbon spills and soil erosion which may impact on ecosystem functioning.

- Increased vehicle activity within the area resulting in the possible destruction and disturbance of fauna and flora.
- Poor access control to farms which may impact on cattle movement, breeding and grazing practices.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime.
- Potential visual impacts caused by drilling activities.
- Potential impact on sensitive tree species, such as the Shepherds Tree, Olienhout Tree and Kameeldoring Tree.
- Prospecting will be undertaken by specialist sub-contractors and it is not anticipated that employment opportunities for local and / or regional communities will result from the prospecting activities.

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

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

The objectives of the EMPr will be to:

- Provide sufficient information to strategically plan the prospecting activities as to avoid unnecessary social and environmental impacts.
- Provide sufficient information and guidance to plan prospecting activities in a manner that would reduce impacts (both social and environmental) as far as practically possible.
- Ensure an approach that will provide the necessary confidence in terms of environmental compliance.
- Provide a management plan that is effective and practical for implementation.

Through the implementation of the proposed mitigation measures, it is anticipated that the identified social & environmental Impacts can be managed and mitigated effectively. Through the implementation of the mitigation and management measures it is expected that:

- Noise impacts can be managed through consultation and through the restriction of operating hours;
- The pollution of soil and water resources can be effectively managed through containment;
- Ecological impact can be managed through the implementation of pollution prevention measures, minimizing land clearing, restricting working hours (faunal disturbance) and rehabilitation.
- Concerns regarding access control to farms can be managed through the development and ensuring compliance to an appropriate access control procedure.
- Risks associated with crime can be mitigated through avoiding recruitment activities on site, as well as monitoring and reporting.
- Visual impact can be minimized through giving consideration to drill site infrastructure placement

and materials used.

n) Aspects for inclusion as conditions of Authorisation.

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

The following conditions should be included into the Authorisation:

- A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMR prior to the commencement of these activities;
- No activities may be undertaken in the pans, with the exception of limited soil sampling;
- Heritage Impact Assessment must be undertaken where roads will be cleared and where drilling sites will be established, prior to the commencement of these activities.
- No activities, with the exception of the soil sampling, may take place within 32m from any river.
- An Environmental Control Officer must remain present on site, at least once a month to ensure that all components of the EMP is addressed.
- A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners.
- All protected tree species will be identified and demarcated.

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

(Which relate to the assessment and mitigation measures proposed)

The following assumptions, uncertainties and gaps are applicable to this project:

- Due to significant time constraints allowed for the assessment of the impacts, and at the time of compiling the draft Basic Assessment Report and EMP:
 - No comments were received from the SAHRA.
- No Heritage Impact Assessment was undertaken.
- No detailed site layout is available due to the nature of the prospecting activities. The study is therefore undertaken as a holistic assessment of the overall site.
- The financial provision is based on an assumption of 5 boreholes, once the drilling programme has been finalized, the financial provision must be updated accordingly.

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

i) Reasons why the activity should be authorized or not

It is the opinion of the EAP that the activity may be authorized.

The proposed prospecting area is targeted as, historically, several kimberlite occurrences are known in the area. With the implementation of the recommended management measures, the impacts that could occur will be managed and no significant impacts should occur.

The option of not approving the activities will result in a significant loss to valuable information regarding the mineral status (in terms of diamonds) present on these properties. In addition to this, should economical reserves be present and the applicant does not have the opportunity to prospect, the opportunity to utilize these reserves for future phases will be lost.

ii) **Conditions that must be included in the authorisation**

The following conditions should be included into the authorisation:

- A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMR prior to the commencement of these activities;
- No activities may be undertaken in the pans;
- Heritage Impact Assessment must be undertaken where roads will be cleared and where drilling sites will be established, prior to the commencement of these activities; and
- No activities, with the exception of the soil sampling, may take place within 32m from any river.
- An Environmental Control Officer must remain present on site, at least once a month to ensure that all components of the EMP is addressed.
- A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners.
- All protected tree species will be identified and demarcated.

q) **Period for which the Environmental Authorisation is required.**

The Prospecting Right has been applied for a period of five years. The Environmental Authorisation should therefore allow for the five years of prospecting and one year for decommissioning and rehabilitation.

r) **Undertaking**

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

An undertaken by the EAP and the client is provided for in Section 2 of the EMP.

s) **Financial Provision**

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

The financial provision for the environmental rehabilitation and closure of any mine/prospecting and its

associated operations forms an integral part of the MPRDA. Sections 41(1), 41(2), 41(3) and 45 of the MPRDA deal with the financial provision for rehabilitation and closure. During 2012 the DMR made updated rates available for the calculation of the closure costs, where contractor's costs are not available these are used in assessments.

The "Guideline Document for the Evaluation of Financial Provision made by the Mining Industry" was developed by the DMR in January 2005, in order to empower the personnel at Regional DMR offices to review the quantum determination for the rehabilitation and closure of mining sites.

With the determination of the quantum for closure it must be assumed that the infrastructure has no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMR guidelines and is based, where possible, on actual costs provided by a third party contractor. The closure cost were amended after the Draft EMP due to a reduction in boreholes that is planned (only one borehole per farm approximately) and the length of roads required and are as follows:

➤ Sub-Total 1:	R 121,800.00(excluding VAT)
➤ Sub-Total 2:	R 148 596.00 (excluding VAT)
➤ Sub-Total 3 (clean closure cost):	R 169 399.44 (including VAT)

The following sections presents the methodology for the determination of the financial provision.

i) Explain how the aforesaid amount was derived.

(The following section details the methodologies adopted to calculate the quantities, associated rehabilitation (clean closure) rates and eventually the final (clean) closure cost estimate)

Most important to note is that the prescribed method for estimating a closure costs, as provided for by the DMR in the form of the Guideline Document for the Evaluation of Financial Provisions, only acts as a guideline, and therefore indicates the minimum requirements for assessing and reporting on a closure cost estimate.

➤ Method of Assessment

As mentioned before, EnviroGistics made use of the Guideline Document for the Evaluation of Financial Provisions made by the Mining Industry. The following table presents the step-by-step details on how the financial provision has been derived. For the purposes of determining the quantum for closures, it is assumed that the infrastructure will have no salvage value.

Table 18: DMR Financial Provision Methodology

Step	Description	MR Applicable Table	Outcomes
1	Determine primary mineral and saleable mineral by-products	Table B.12	Mineral: Diamond
2	Determine Risk Class	Table B.12	Primary Risk Class: C (Small operation, no waste, no processing). Risk Class C is considered a low risk with a low probability of occurrence of the impact with a negligible consequence.
3	Determine the Area Sensitivity	Table B.4	Medium to High Sensitivity. The area is largely is disturbed through cattle farming, however the natural state is still present in good condition. The pan and river systems in this area, although non-perennial is a tributary of the Vaal River. The landowners are in close proximity to the proposed prospecting activities, although the area is not densely inhabited and no well-established communities are present. The land in question is used for cattle farming and therefore the local communities (in this case the farmers) drive the bulk of their income directly from the area. The area can therefore be considered sensitive to further development past the prospecting application, should the prospecting activities prove that the area is economically viable for the purposes of a mining right application, which will compromise the existing economic activity.
4.1	Determine the level of information	N/A	Limited information is available which is based on desktop investigations and consultation with stakeholders.
4.2	Determine the closure components	Table B.5	See Table 19 of this report.
4.3	Determine the unit rates for closure components	Table B.6	See Table 19 of this report. The multiplication factor for all components is 1.00.
4.4	Determine and apply the weighting factors	Table B.7 Table B.8	Weighting factor 1 (Nature of the terrain): 1 (generally flat terrain) Weighting factor 2 (Peri-urban, less than 150km from a developed urban area): 1 .05(Rural/Urban).
4.5	Identify areas of disturbance	N/A	No areas of disturbance are considered in this assessment. The area in which the prospecting activities are planned is considered to be undisturbed.
4.6	Identify closure costs from specialist studies	Table B.9	Due to the fact that the operation in question is only a prospecting operation, no residual impacts should take place. During the Life of Prospecting and ongoing rehabilitation, the self-succession results should be assessed and monitored. If self-succession does not take place satisfactorily the client may be subjected to additional specialist investigations (ecological and pedology) to determine seeding and re-vegetation requirements.
4.7	Calculate Closure Costs	Table B.10	See the following section.

Quantity Estimation

For the purposes of this assessment, EnviroGistics can confirm that the method adopted to obtain and compile the schedule of quantities is sound, correct, and provides detail that is required by the DMR. The information will allow for continued monitoring and updating of quantities and provides the ideal platform to manage and monitor the actual on-site rehabilitation measures and costs incurred.

Determination of Rates

The method of determining the applicable rehabilitation rates is based on practical experience and information by third party contractors.

The following table summarises the unit rates for closure components as specified in the DMR Guideline Document and indicates which rates were used by EnviroGistics in this assessment.

Table 19: Master Rate Calculation

Iter	Closure Component	Unit	DMR Master Rate (2004)	Master Rate (Inflat 2014/2015)	Rates utilized	Comments
1	Dismantling of processing plant and associated structures (included into Section 2A and 2B)	m ³	R 6.82	R 13,42	N/A	-
2(A)	Demolition of steel buildings and structures (including floor slabs)	m ²	R 95.00	R 170,36	N/A	-
2(B)	Demolition of reinforced concrete buildings and structures including Processing Plant and related structures - including all admin and mine buildings and sewage facilities.	m ²	R 140.00	R 251,05	N/A	-
3(A)	Rehabilitation of access roads	m ²	R 17.00	R 30,48	N/A	-
3(B)	Rehabilitation of haul roads	m ²	N/A		Ripping: R 10.64 Topsoil: R 11.86	Third party contractors rate obtained from Lenfield
4(A)	Demolition of electrified railway lines	m	R 165.00	R 295,88	N/A	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	m	R 90.00	R 161,39	N/A	-
5	Demolition of housing and facilities (including floor slabs)	m	R 190.00	R 340,71	N/A	-
6	Opencast rehabilitation (including final voids and ramps) - Trenches and Bulk Sample areas	ha	N/A	N/A	N/A	DMR Master Rate
7	Sealing of shafts, adits and inclines (including concrete cap)	m ³	R 51.00	R 91,45	Borehole cement: R 450/m Borehole capping: R 1 750.00	Third party contractors rate obtained from Bennet Drilling Sanitary Seals (cement) was not included into the closure cost.
8(A)	Rehabilitation of overburden and spoils	ha	R 66,400.00	R 119 070,06	N/A	-
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	R 82,700.00	R 148 299,61	N/A	-

8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	R 240,200.00	R 430 732,37	N/A	-
9	Rehabilitation of subsided areas	ha	R 55,600.00	R 99 703,25	N/A	-
10	General surface rehabilitation, including grassing of all denuded areas - this has made provision for the opencast areas, overburden dumps and paste disposal area.	m ²	R 52,600.00	R 94 323,57	Topsoil: R 11.86 Ripping and Shaping: R 16.87	Third party contractors rate obtained from Lenfield
11	River diversions	ha	R 52,600.00	R 94 323,57	N/A	-
12	Fencing and power lines	m	R 60.00	R 107,59	N/A	-
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater, including treatment, when required)	ha	R 20,000.00	R 35 864,48	N/A	-
14	Two to three year maintenance and aftercare	ha	R 7,000.00	R 12 552,57	N/A	-

Preliminary Cost Estimation

The following table presents the closure cost rehabilitation undertaken in terms of the DMR Guideline Document.

Item No.	Description	Unit	Quantity	Weighting	Rate	Amount	Comment
1	Dismantling of Processing Plant and Associated Structures (including associated conveyors)	-	-		-	-	-
2(A)	Demolition of Steel Buildings and Structures (including floor slabs)	-	-		-	-	-
2(B)	Demolition of Reinforced Concrete Buildings and Structures Including Processing Plant and Related Structures	-	-		-	-	-
3(A)	Rehabilitation of Access Roads (surfaced roads)	-	-		-	-	-
3(B)	Rehabilitation of Haul Roads						
3(B).1	Ripping of Internal Roads (1.5km at 6m wide)	m ²	8 000		R 12.92	R 103 360.00	Third Party Contractor Rates
	Sub Total					R 103 360.00	
4(A)	Demolition of Electrified Railway Lines	-	-		-	-	-
4(B)	Demolition and Rehabilitation of Non-electrified Railway Lines	-	-		-	-	-
5	Demolition of Housing and Facilities (including floor slabs)	-	-		-	-	-
6	Opencast Rehabilitation (including final voids and ramps)	-	-		-	-	-
7	Sealing of Shafts, Adits and Inclines - Boreholes						
7.2	Borehole Capping	Unit	5		R 1 750.00	R 8 750.00	Bennet Drilling Rate
	Sub Total					R 8 750.00	

8(A)	Rehabilitation of Overburden and Spoils (Rip and Shape, Spread of Topsoil)	-	-	-	-	-
8(B)	Rehabilitation of Processing Waste Deposits and Evaporation Ponds (basic, salt-producing waste)	-	-	-	-	-
8(C)	Rehabilitation of Processing Waste Deposits and Evaporation Ponds (acidic, metal-rich waste)	-	-	-	-	-
9	Rehabilitation of Subsided Areas	-	-	-	-	-
10	General Surface Rehabilitation, Including Grassing of all Denuded Areas (this has made provision for the opencast areas, overburden dumps and paste disposal area [load and haul, rip and shape - even terrain])					
10.1	Overall Area (Boreholes) (at 150m2 rehabilitation each)	m ²	750.00	R 12.92	R 9 690.00	Third Party Contractor Rates
	Sub Total				R 9 690.00	
12	Fencing, Power Lines and Communication Lines	-	-	-	-	-
13	Water Management and Rehabilitation	-	-	-	-	-
14	2 - 3 Years Maintenance and Aftercare	-	-	-	-	-
	Sub Total 1				R 121 800.00	
	Weighting factor 2 (Step 4.4)			1		R 140 240.00
1	Preliminary and General		12% of Subtotal 1		R 16 828.80	
2	Contingencies		Add 10% to Subtotal 1		R 14 024.00	
	Subtotal 2 (Subtotal 1 plus sum of management and administrative items 1 to 6)					R 148 596.00
				14% Vat		R 20 803.44
	Grand Total (Subtotal 3)					R 169 399.44

Financial Provision

The financial provision required by the holder of the mining right must be provided for by one or more of the following methods in order to achieve the total quantum of rehabilitation and remediation of environmental impacts and damage as well as final closure:

- Approved dedicated trust fund;
- Financial guarantee from a South African registered bank or any other approved financial institution;
- Cash deposit to be deposited at the office of the Regional Manager; or
- Any other manner determined by the Minister.

The client is required to annually assess the total quantum of environmental liability for the operation and ensure that financial provision is sufficient to cover the current liability (in the event of premature closure), as well as the end of life liability.

As per Government Legislature, the client is required to ensure full financial cover for the current liability at any point in the life of the operation. Pecuniary provision must be made for the shortfall between the existing trust fund balance and the premature closure or current environmental rehabilitation liability if applicable.

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

The amount the finance the prospecting activities will amount to R 169,399.44. Financing will be sourced from the capital expenditure as planned by the company; this capital will come from the treasury of the company. As part of the Prospecting Works Programme, the applicant has provided the Finsch Diamond Mine's annual financial statement for 2013. The Mine's annual financial statement for 2013 was also submitted to the DMR for confirmation that the company has available funding to implement this proposed project.

It should be noted that the current expenditure provided for in the Prospecting Works Programme does not include the calculated Financial Provision as included into this Basic Assessment, as these values were not available at the time of the submission of the Prospecting Works Programme.

The provision for closure, should be updated into the Prospecting Works Programme prior the decision by the DMR should this decision be positive.

t) Specific Information required by the competent Authority

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

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix – No specialist study was undertaken, but a detailed Stakeholder Engagement Process was conducted)

No specific report was generated for the purposes of the socio-economic conditions. All findings are presented hereafter:

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

The following impacts are regarded as community impacts:

- Potential water and soil pollution resulting from hydrocarbon spills and soil erosion;
- Noise due to the undertaking of the site fly-overs;
- Loss of protected plant species
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime; and
- Visual Impact.

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

Measures to manage the potential impacts on communities, individuals or competing land uses in close proximity

- Pollution Prevention
 - Mitigation and management measures must be implemented to prevent environmental pollution which may impact on environmental resources utilized by communities, landowners and other stakeholders. These mitigation and management measures are discussed in the following section.
- Loss of protected tree species
 - Tree species such as the Kameeldoring Tree, Olienhout Tree and the shepherds Tree must be clearly demarcated when in proximity to prospecting activities. None of these species may be removed or damaged.
- Noise due to the undertaking of the site fly-overs and prospecting activities;
 - Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms.
 - Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, with a view to prevent possible injury or damage as a result of animals being startled by the noise.
 - Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.
- Poor access control resulting in impacts on cattle movement, breeding and grazing practices;
 - Access control procedures must be agreed on with farm owners and all staff trained on these procedures.
- Influx of persons (job seekers) to site as a result of increased activity and the possible resultant increase in opportunistic crime;

- Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
- The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.
- If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.
- Visual Impact
 - Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.
 - The 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.
 - A waste management system will be implemented and sufficient waste bins will be provided for on-site. A fine system will be implemented to further prohibit littering and poor housekeeping practices.

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

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

As outlined in Section d)ii), page 16 of this report, prospecting will be undertaken in phases; the first phase being a desktop assessment, followed by ground and / or aerial magnetic survey and soil sampling. Based on the outcome of these activities, soil sampling and potential drill sites will be determined. Potential heritage impact will only occur once soil sampling and geophysics have been used to identify sites for drilling, and it is therefore recommended that the Heritage Impact Assessment be undertaken prior to drilling activities, and that the Heritage Impact Assessment be conducted over identified localised drill sites and access routes, as opposed to the entire exploration area.

This recommendation will be submitted to the South African Heritage Resource Agency (SAHRA) for approval.

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

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

Please refer to Appendix G for the motivation of not investigating for reasonable or feasible alternatives.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. Draft environmental management programme

a) Details of the EAP

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

The requirement for the provision of the details and expertise of the EAP are included in PART A, section 1(a).

b) Description of the Aspects of the Activity

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

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

c) Composite Map

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

Please refer to Appendix H for the Composite Map.

d) Description of Impact management objectives including management statements

i) Determination of closure objectives.

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

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

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

Mapping of the prospecting activities could thus not be undertaken.

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

The closure objectives are to:

- Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.
- Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;
- 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
- 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.

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

In terms of Government Notices Regulation 399, the applicant will be allowed to abstract 75m³ of groundwater per hectare per annum from groundwater within the Quaternary Catchment of C92C and A. It is currently not anticipated that this quantity will be exceeded.

iii) Has a water use license has been applied for?

The use of abstracting groundwater will be Generally Authorised in terms of the NWA. Please refer to Table 4 indicating why a Water Use License will not be triggered.

iv) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity is presented in the following table.

ACTIVITIES	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational, Decommissioning, closure, post-	SCALE AND SIZE OF DISTURBANCE	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm- water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.) E.g.Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Phase 1: Data Acquisition and Desktop Study					
Data collection and assessment (desktop only)	Planning	3 855ha (size of property)	No mitigation proposed	Identification of the potential of invasive prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A
Data Assessment	Planning	3 855ha (size of property)	No mitigation proposed	Identification of the potential of invasive prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A

ACTIVITIES	PHASE	SCALE AND SIZE OF DISTURBANCE	MITIGATION TYPE	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Phase 2: Target Generation and Ground Truthing					
Site fly-over	Planning	3 855ha (size of property)	<ol style="list-style-type: none"> 1. Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms. 2. Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, which may result in injury or damage. 3. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 4. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 5. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 	Identification of the potential of invasive prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A
	Planning	3 855ha (size of property)	<ol style="list-style-type: none"> 6. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 	Identification of the potential of invasive prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A

ACTIVITIES	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)	SCALE AND SIZE OF DISTURBANCE	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.) E.g. Modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation.	COMPLIANCE STANDARDS WITH	TIME PERIOD FOR IMPLEMENTATION
Phase 2: Target Generation and Ground Truthing					
Ground surveys	Planning	3 855ha (size of property)	<ol style="list-style-type: none"> 7. Access control procedures must be agreed on with farm owners and all staff trained on these procedures. 8. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 9. Night security staff will be appointed during the presence of drilling equipment. 10. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 11. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. 12. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 	Identification of the potential of invasive prospecting activities to occur within sensitive environments such as the pans and river systems, in this event the necessary consultation must be initiated with the DWS.	N/A

			13. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.		
Phase 2: Target Generation and Ground Truthing					
Soil sampling (30kg of soil per sample)	No construction or site establishment activities will be undertaken	-	1. No mitigation proposed.	N/A	N/A

ACTIVITIES	PHASE	SCALE AND SIZE OF DISTURBANCE	MITIGATION TYPE	COMPLIANCE STANDARDS WITH	TIME PERIOD FOR IMPLEMENTATION
Phase 2: Target Generation and Ground Truthing					

Drilling	Construction Phase	Less than 8 000m ²	<ol style="list-style-type: none"> 2. A map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMR and DWS. Upon agreement of the location of the activities can the applicant proceed. 3. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 4. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 5. The area will be clearly demarcated and the EMP must be enforced. 6. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 7. The applicant will be responsible for all environmental disturbance 	<p>The prospecting activities must be undertaken in line with the approved Prospecting Works Programme.</p> <p>The financial provision required for rehabilitation must be guaranteed before the commencement of prospecting activities.</p> <p>Activities should stay clear of pans and outside of the 32m river buffer in order to avoid the need to apply for a Section 21 (c) and (i) Water Use License.</p>	Concurrently with the completion of prospecting activities in an area.
----------	--------------------	-------------------------------	--	--	--

			<p>on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.</p> <p>8. Use existing track and roads in all instances as far as is practicable.</p> <p>9. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided.</p> <p>10. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.</p> <p>11. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p> <p>12. No permanent housing will be provided. No accommodation will be provide for on-site. Personnel will be house in surrounding towns. However, for the purposes of the drilling, a number of personnel may reside on demarcated campsites on the site. This will however be consulted with the landowners.</p>		
	Construction Phase	Approximately 8000m ²	<p>13. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts.</p> <p>14. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.</p> <p>15. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.</p> <p>16. Access control procedures must be agreed on with farm owners and staff trained.</p>	<p>The prospecting activities must be undertaken in line with the approved Prospecting Works Programme.</p> <p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

			<p>17. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>18. Night security staff will be appointed during the presence of drilling equipment.</p> <p>19. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns.</p> <p>20. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	<p>results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	
<p>Site establishment activities including:</p> <p>(i) <i>Vegetation clearing of drill pad area</i></p> <p>(j) <i>Topsoil stripping and stockpiling</i></p> <p>(k) <i>Drill pad compaction</i></p> <p>(l) <i>Excavation and lining of drill water sump</i></p> <p>(m) <i>Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</i></p> <p>(n) <i>Erection of fuel storage tank</i></p> <p>(o) <i>Erection of safety barrier</i></p> <p>(p) <i>Waste generation and management</i></p>	<p>Construction Phase</p>	<p>Approximately 9500m²</p>	<p>21. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>22. The removal of vegetation within the drill pad area will be minimized.</p> <p>23. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts.</p> <p>24. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment.</p> <p>25. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire.</p> <p>26. An Environmental Control Officer must remain present on site, at</p>	<p>The prospecting activities must be undertaken in line with the approved Prospecting Works Programme. The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

			<p>least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>27. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.</p> <p>28. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching.</p> <p>29. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>30. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p>		
	Construction Phase	Approximately 9500m ²	<p>31. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil.</p> <p>32. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad.</p> <p>33. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>34. Vegetation removed through lower blade clearing will be mixed with topsoil to increase organic content</p>	<p>The prospecting activities must be undertaken in line with the approved Prospecting Works Programme.</p> <p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

			<p>and to preserve the seed bank in order to aid rehabilitation efforts.</p> <p>35. Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>36. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p>	<p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	
	Operational Phase		<p>37. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed.</p> <p>38. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

	Operational Phase	Included into the area of 1500m ²	<p>39. The shaded office area, portable ablation 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.</p> <p>40. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>41. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site.</p> <p>42. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>43. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p> <p>44. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>45. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>
--	-------------------	--	--	---	---

			of the farming activities.		
Exploration drilling and core sample collection and storage including:	Operational Phase	Included into the area of 1500m ²	46. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation. 47. The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.	The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.	Concurrently with the completion of prospecting activities in an area.
(f) <i>Scout and delineation drilling</i> (g) <i>Drill maintenance and re-fuelling</i> (h) <i>Core sample collection and storage</i> (i) <i>Drill fluid collection, storage and evaporation</i> (j) <i>Waste generation and management</i>			48. 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. 49. The topsoil stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. 50. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.	Concurrently with the completion of prospecting activities in an area.

	Operational Phase	Included into the area of 1500m ²	<ol style="list-style-type: none"> 51. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity. 52. Oils and lubricant will be stored within secondary containment structures. 53. Where practicable, vehicle maintenance will be undertaken off-site. 54. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil. 55. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop. 56. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified. 57. A sufficient number of waste receptacles will be provided. 58. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 59. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight. 60. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility. 61. Based on visual observation wet dust suppression will be undertaken as and when required 	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>
--	-------------------	--	---	---	---

			<p>to manage dust emissions from vehicle movement.</p> <p>62. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.</p> <p>63. Visual impact of structures will be mitigated through measures as included in Item 79.</p> <p>64. Visual dust dispersion will be mitigated through measures as included in Item 77-78.</p> <p>65. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.</p> <p>66. Access control procedures must be agreed on with farm owners.</p>		
	Operational Phase	Included into the area of 1500m ²	<p>67. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>68. The landowner will be notified of unauthorised persons encountered on site.</p> <p>69. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>70. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p> <p>71. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

			<p>suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>72. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p> <p>73. The prospecting areas must be clearly demarcated.</p> <p>74. No prospecting activities may be undertaken within the pan areas.</p> <p>75. All site plans must indicate the presence of pans.</p>		
<p>Removal of temporary infrastructure including:</p> <p>(a) <i>Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay</i></p> <p>(b) <i>Borehole capping</i></p> <p>Drill pad rehabilitation including:</p> <p>(d) <i>Ripping of drill pad and access road</i></p>	Decommissioning	Included into the size of 1500m ²	<p>76. 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.</p> <p>77. Drill holes must be permanently capped as soon as is practicable</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

<p>(e) <i>Re-spreading of stockpiled topsoil</i> (f) <i>Re-vegetation</i></p>	<p>Decommissioning</p>	<p>Approximately 9500m²</p>	<p>78. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement. 79. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources. 80. Access control procedures must be agreed on with farm owners and all staff trained. 81. An Environmental Control Officer must remain present on site, at least once a month to ensure that all components of the EMP is addressed. 82. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>
	<p>Decommissioning</p>	<p>Included into the size of 1500m²</p>	<p>83. All fuel storage tanks will be emptied prior to removal. 84. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination. 85. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided. The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>

	Decommissioning	Approximately 9500m ²	<p>86. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.</p> <p>87. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist.</p> <p>88. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding.</p> <p>89. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.</p>	<p>The applicant must adhere to the NEMA Section 2 Principle and ensure that a cradle to grave approach is followed in terms of waste management and that all activities are undertaken with a precautionary approach. Where impacts may result a proactive manner should be implemented to ensure that potential negative results are avoided.</p> <p>The applicant must comply with the conditions of the Environmental Authorisation at all times.</p>	<p>Concurrently with the completion of prospecting activities in an area.</p>
--	-----------------	----------------------------------	---	---	---

e) Impact Management Outcomes

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

ACTIVITY (whether listed or not listed).	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE (In which impact is anticipated)	MITIGATION TYPE	MITIGATION OBJECTIVE	STANDARD TO BE ACHIEVED
Phase1: Data Acquisition and Desktop Study						
Data collection and assessment (desktop only)	None identified.	N/A	Planning	No mitigation proposed	Control potential deviations from the approved Prospecting Works Programme through the effective implementation of the data acquisition and desktop study.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
Data Assessment	None identified.	N/A	Planning	No mitigation proposed	Control potential deviations from the approved Prospecting Works Programme through the effective implementation of the data acquisition and desktop study.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
Phase 2: Target Generation and Ground Truthing						
Site fly-over	Noise impacts resulting from site fly-overs affecting cattle and game farm animals.	Noise generation	Planning	1. Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms. 2. Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, which may result in injury or damage. 3. An Environmental Control Officer	Control potential deviations from the approved Prospecting Works Programme through the effective implementation of the site fly-over study. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

				<p>must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>4. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p> <p>5. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>		
	Nuisance noise impacts on communities and landowners and other persons.	Noise generation	Planning	<p>6. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	<p>Control potential deviations from the approved Prospecting Works Programme through the effective implementation of the site fly-over study.</p> <p>Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.</p>	<p>Remain within the Noise Regulation Standards for Rural Areas.</p>
Ground surveys	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of Cattle	Planning	<p>7. Access control procedures must be agreed on with farm owners and all staff trained on these procedures.</p> <p>8. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>9. Night security staff will be appointed during the presence of drilling equipment.</p> <p>10. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are</p>	<p>Control potential deviations from the approved Prospecting Works Programme through the effective implementation of the ground surveys.</p>	<p>Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.</p>

				<p>in line in support of the daily management of the farming activities.</p> <p>11. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns.</p> <p>12. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>13. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p>		
No construction or site establishment activities will be undertaken	No anticipated impacts.	N/A	N/A	14. No mitigation proposed.	N/A	N/A
Soil sampling (30kg of soil per sample)	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Operational Phase	<p>15. Use existing track and roads in all instances as far as is practicable.</p> <p>16. As part of the soil sampling programme, no tracks will be cleared for once-off access to sampling sites.</p> <p>17. Tree species such as the Kameeldoring Tree, Olienhout Tree and the shepherds Tree must be clearly demarcated when in proximity to prospecting activities. None of these species may be removed or damaged.</p> <p>18. 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.</p> <p>19. Site activities will be conducted during daytime hours 07h00 – 17h30 to</p>	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Works. No removal of vegetation outside of demarcated areas.

				<p>avoid night time noise disturbances and night time collisions with fauna.</p> <p>20. Vehicle speed will be reduced, particularly in highly vegetated areas to avoid deaths by vehicle impacts.</p> <p>21. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching.</p> <p>22. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>23. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p>		
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Noise generation	Operational Phase	<p>24. Access control procedures must be agreed on with farm owners and all staff trained on these procedures.</p> <p>25. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities</p>	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the Noise Regulation Standards for Rural Areas.
	Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of cattle and/or nuisance creation	Operational Phase	26. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Poor housekeeping could result in	Loss of aesthetic value, loss	Operational Phase	27. A waste management system will be implemented and sufficient waste bins will be provided for on site. A fine system	Control through the limiting of the activities to the day time and the implementation of an open and	Remain within the ambits of the Prospecting Works

	<p>littering and the associated impacts this will have on the aesthetics of the area, contamination of river systems in the rainy season and also the potential health hazard to cattle</p>	<p>of water resources, loss of fauna and flora</p>		<p>will be implemented to further prohibit littering and poor housekeeping practices. 28. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 29. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight. 30. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility. 31. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching. 32. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 33. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p>	<p>transparent channel of communication. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.</p>	<p>Programme and Environmental Authorisation. No removal of vegetation outside of demarcated areas.</p>
	<p>Activities within the river bed could result in the disturbance to the natural geomorpholog</p>	<p>Loss of fauna and flora, altering the river bed</p>	<p>Operational Phase</p>	<p>34. Only soil sampling may be undertaken in the river bed. No other activities (drilling, roads, etc.) may be undertaken. 35. Pans must be avoided, where possible. Where soil sampling is required this must be limited as far as practically possible and the area rehabilitated</p>	<p>Control through the clear delineation of the prospecting area.</p>	<p>Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.</p>

	y.			immediately.		
	Activities within the river bed could result in safety hazards during rainy periods.	Loss and/or damage to life	Operational Phase	36. No sampling within the riverbed will be permitted during rainy periods. 37. A first aid station and emergency plan must be available on site.	Control through the clear delineation of the prospecting area.	Maintain a 100% fatal and injury free operation.
	Soil disturbance from soil sampling resulting in soil structure destruction, compaction and erosion.	Loss soil resources	Operational Phase	38. Soil disturbances are to be limited as far as is practicable.	Control through the clear delineation of the prospecting area. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP.	Retain topsoil for the reuse in rehabilitation.
No decommissioning activities will be required	No anticipated impacts.	N/A	Decommissioning Phase	39. No mitigation proposed.	N/A	N/A
Phase 3: Scout Drilling and Delineation Drilling						
Site Access	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	40. A map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMR and DWS. Upon agreement of the location of the activities can the applicant proceed. 41. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 42. As far as practically possible the applicant will make use of local suppliers	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

			<p>(for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>43. The area will be clearly demarcated and the EMP must be enforced.</p> <p>44. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed.</p> <p>45. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.</p> <p>46. Use existing track and roads in all instances as far as is practicable.</p> <p>47. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided.</p> <p>48. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.</p> <p>49. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts.</p> <p>50. No permanent housing will be provided. No accommodation will be provide for on-site. Personnel will be house in surrounding towns. However, for the purposes of the drilling, a number of personnel may reside on demarcated campsites on the site. This will however</p>		
--	--	--	---	--	--

				be consulted with the landowners.		
	Soil compaction resulting from repeated use of access roads to drill sites.	Loss of soil resources	Construction Phase	51. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts. 52. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.	Control through the clear delineation of the prospecting area. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Vehicle traffic noise impact affecting cattle and / or wildlife.	Loss of fauna	Construction Phase	53. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.	Control through the clear delineation of the prospecting area. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of fauna	Construction Phase	54. Access control procedures must be agreed on with farm owners and staff trained. 55. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 56. Night security staff will be appointed during the presence of drilling equipment. 57. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. 58. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are	Control through the clear delineation of the prospecting area. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

				in line in support of the daily management of the farming activities.		
	Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase	59. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Control through the clear delineation of the prospecting area.	Comply with the requirements by SAHRA. No damage may result on heritage and cultural significant sites.
Site establishment activities including: <i>Vegetation clearing of drill pad area</i> <i>Topsoil stripping and stockpiling</i> <i>Drill pad compaction</i> <i>Excavation and lining of drill water sump</i> <i>Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay</i> <i>Erection of fuel storage tank</i> <i>Erection of safety barrier</i>	Destruction and / or disturbance of on-site fauna and flora.	Loss of Fauna and Flora	Construction Phase	60. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 61. The removal of vegetation within the drill pad area will be minimized. 62. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts. 63. The design of the drill fluid sump must incorporate effective fauna egress to avoid entrapment. 64. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire. 65. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 66. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner. 67. A very detailed induction	Control through the clear delineation of the prospecting area.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

<i>Waste generation and management</i>				<p>programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching.</p> <p>68. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>69. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p>		
	Soil disturbance and topsoil stockpiling resulting in soil compaction and erosion.	Loss of soil resources	Construction Phase	<p>70. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil.</p> <p>71. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad.</p> <p>72. Where practicable topsoil will be stripped to a depth of 10cm.</p> <p>73. 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.</p> <p>74. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3.</p> <p>75. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise slopes.</p>	Control through the clear delineation of the prospecting area. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Dust emission resulting from	Dust emissions	Construction Phase	76. Based on visual observation, wet dust suppression will be undertaken to	Control to the implementation of dust suppression methods, when	Remain within the designated area

	site clearing, soil stripping and construction activities (including vehicle entrained dust).			manage dust emissions from vehicle movement and other construction activities as and when needed. 77. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.	this is required. Dust suppression methods could include wet suppression.	demarcated for prospecting activities. Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	Visual Impact affecting visual character and "sense of place".	Loss in aesthetics	Construction Phase	78. 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.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. No removal of vegetation outside of demarcated areas.
	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Construction Phase	79. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 80. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site. 81. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site. 82. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place. 83. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Maintain a 100% crime free area within the control of the prospecting activities and applicant.

				<p>concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>84. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>		
	Potential destruction of heritage resources.	Loss of Cultural and/or Heritage Significance	Construction Phase	85. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks.	Comply with the requirements by SAHRA. No damage may result on heritage and cultural significant sites.
<p>Exploration drilling and core sample collection and storage including:</p> <p>(a) Scout and delineation drilling</p> <p>(b) Drill maintenance and re-fuelling</p> <p>(c) Core sample collection and storage</p>	Water and soil pollution resulting from disposal of drill fluids.	Loss of water resources, loss of soil resources	Operational Phase	<p>86. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation.</p> <p>87. The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.</p>	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP. Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Continued soil erosion	Loss of soil resources	Operational Phase	88. In the event that raise blade clearing is not undertaken, and the drill	Control through the clear delineation of the prospecting	Remain within the ambits of the

(d) <i>Drill fluid collection, storage and evaporation</i> (e) <i>Waste generation and management</i>	from topsoil stockpile and soil compaction from drill pad platform.			pad is cleared, topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3. 89. The topsoil stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. 90. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	area. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP	Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	Loss of water resources, loss of soil resources	Operational Phase	91. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity. 92. Oils and lubricant will be stored within secondary containment structures. 93. Where practicable, vehicle maintenance will be undertaken off-site. 94. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil. 95. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop. 96. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified. 97. A sufficient number of waste receptacles will be provided. 98. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 99. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight.	Control through the clear delineation of the prospecting area. Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.

				100. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.		
	Dust emissions from drilling and general site activities (including vehicle entrained dust)	Increase in dust emissions	Operational Phase	101. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement. 102. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.	Control to the implementation of dust suppression methods, when this is required. Dust suppression methods could include wet suppression.	Remain within the designated area demarcated for prospecting activities. Dust Control Emissions.
	Visual Impact affecting visual character and "sense of place"	Loss in aesthetic value	Operational Phase	103. Visual impact of structures will be mitigated through measures as included in Item 79. 104. Visual dust dispersion will be mitigated through measures as included in Item 77-78.	Control through the clear delineation of the prospecting area. Control through the implementation of the conditions in the EMP.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. No removal of vegetation outside of demarcated areas.
	Vehicle traffic and drill noise impact affecting wildlife game farm animals.	Loss of fauna	Operational Phase	105. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	Loss of cattle	Operational Phase	106. Access control procedures must be agreed on with farm owners.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the limiting of the	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

					activities to the day time and the implementation of an open and transparent channel of communication.	
	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	Increase in petty crimes	Operational Phase	<p>107. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.</p> <p>108. The landowner will be notified of unauthorised persons encountered on site.</p> <p>109. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.</p> <p>110. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.</p> <p>111. A local security company, in consultation with the landowners will be appointed, if required, to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized.</p> <p>112. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.</p>	Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Maintain a 100% crime free area as far as practically possible within the control of the prospecting activities and applicant.
	Impact on the pans and associated ecosystems in the area.	Loss of sensitive environments, loss of fauna, loss of flora	Operational Phase	<p>113. The prospecting areas must be clearly demarcated.</p> <p>114. No prospecting activities may be undertaken within the pan areas.</p> <p>115. All site plans must indicate the presence of pans.</p>	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

					well as the implementation of a fine system. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	
Removal of temporary infrastructure including: (a) <i>Removal of temporary site office shaded area, potable ablution facilities, water storage tanks and core bay Borehole capping</i> Drill pad rehabilitation including: (a) <i>Ripping of drill pad and access road</i> (b) <i>Re-spreading of</i>	Destruction and / or disturbance of on-site fauna.	Loss of sensitive environments, loss of fauna, loss of flora	Decommissioning	116. 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. 117. Drill holes must be permanently capped as soon as is practicable.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Dust emissions from decommissioning activities (including vehicle entrained dust).	Increase in dust emissions	Decommissioning	118. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement. 119. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.	Control to the implementation of dust suppression methods, when this is required. Dust suppression methods could include wet suppression.	Remain within the designated area demarcated for prospecting activities. Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	Poor access control resulting in impacts on cattle movement, breeding and	Loss of cattle	Decommissioning	120. Access control procedures must be agreed on with farm owners and all staff trained. 121. An Environmental Control Officer must remain present on site, at least once a month to ensure that all components of the EMP is addressed.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

(c) <i>stockpiled topsoil Re-vegetation</i>	grazing practices.			122. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.	fine system. Control through the limiting of the activities to the day time and the implementation of an open and transparent channel of communication.	
	Potential water and soil pollution resulting from hydrocarbon spills.	Loss of water resources, loss of soil resources	Decommissioning	123. All fuel storage tanks will be emptied prior to removal. 124. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination. 125. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the implementation of the NWA GN704 water management principles.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	Loss of soil resources	Decommissioning	126. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles. 127. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist. 128. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. 129. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.	Control through the clear delineation of the prospecting area. Control through the implementation of environmental induction and toolbox talks, as well as the implementation of a fine system. Control through the implementation of a soil management programme in terms of the correct topsoil removal, stockpiling and rehabilitation practices as discussed in the EMP.	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

f) Impact Management Actions

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

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
Phase1: Data Acquisition and Desktop Study				
Data collection and assessment (desktop only)	None identified.	No mitigation proposed	N/A	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
Data Assessment	None identified.	No mitigation proposed	N/A	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
Phase 2: Target Generation and Ground Truthing				
Site fly-over	Noise impacts resulting from site fly-overs affecting cattle and game farm animals.	<ol style="list-style-type: none"> 1. Directly affected, adjacent landowners and game farms in proximity to the site will be informed of the planned dates of the airborne geophysics survey and a grievance mechanism will be made available. Mitigation alternatives are limited to timing of the flyovers which may affect aspects such as hunting activities on game farms. 2. Farms owners must be consulted and informed of any low fly overs which may affect cattle being held in restricted holding pens, which may result in injury or damage. 3. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 4. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 5. The applicant will prior to the commencement of prospecting ac ensure that the prospecting schedules are in line in support daily management of the farming activities.. 	N/A	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	Nuisance noise impacts on communities and landowners and other persons.	6. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.	N/A	Remain within the Noise Regulation Standards for Rural Areas.
Ground surveys	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	7. Access control procedures must be agreed on with farm owners and all staff trained on these procedures. 8. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 9. Night security staff will be appointed during the presence of drilling equipment. 10. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 11. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. 12. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 13. Meetings must be scheduled between the applicant and the landowners to ensure that concerns are identified at an early stage and management measures in line with the farming activities are in place.	N/A	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
No construction or site establishment activities will be undertaken	No anticipated impacts.	14. No mitigation proposed.	N/A	N/A
Soil sampling (30kg of soil per sample)	Destruction and / or disturbance of on-site fauna and flora.	15. Use existing track and roads in all instances as far as is practicable. 16. As part of the soil sampling programme, no tracks will be cleared for once-off access to sampling sites. 17. Tree species such as the Kameeldoring Tree, Olienhout Tree and the shepherds Tree must be clearly demarcated when in proximity to prospecting activities. None of these species	Concurrently with completion of prospecting activities in an area.	Remain within the ambits of the Prospecting Works. No removal of vegetation outside of demarcated areas.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
		<p>may be removed or damaged.</p> <p>18. 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.</p> <p>19. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna.</p> <p>20. Vehicle speed will be reduced, particularly in highly vegetated areas to avoid deaths by vehicle impacts.</p> <p>21. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching.</p> <p>22. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities.</p> <p>23. Meetings must be scheduled between the applicant and the n ensure that concerns are identified at an early stage an management measures in line with the farming activities are place.</p>		
	<p>Poor access control resulting in impacts on cattle movement, breeding and grazing practices.</p>	<p>24. Access control procedures must be agreed on with farm owne all staff trained on these procedures.</p> <p>25. The applicant will prior to the commencement of prospecting ac ensure that the prospecting schedules are in line in support daily management of the farming activities.</p>	<p>Concurrently with completion of prosp activities</p>	<p>Remain within the Noise Regulation Standards for Rural Areas.</p>
	<p>Vehicle traffic noise impact affecting cattle and / or wildlife.</p>	<p>26. Site activities will be conducted during daytime hours 07h00 – to avoid night time noise disturbances and night time collisior fauna.</p>	<p>Concurrently with completion of prosp activities</p>	<p>Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.</p>
	<p>Poor housekeeping could result in littering and the associated impacts this will have on the aesthetics of the area, contamination of river systems in the rainy season</p>	<p>27. A waste management system will be implemented and sufficient bins will be provided for on site. A fine system will be impleme further prohibit littering and poor housekeeping practices.</p> <p>28. Waste separation will be undertaken at source and se receptacles will be provided (i.e. general waste, recyclable hazardous waste).</p> <p>29. Receptacles will be closed (i.e. fitted with a lockable lid) to eli the possibility of access by animals overnight.</p> <p>30. Wastes will be removed and disposed of at an appropriately lic</p>	<p>Concurrently with completion of prosp activities in an area.</p>	<p>Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. No removal of vegetation outside of demarcated areas.</p>

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	and also the potential health hazard to cattle	landfill (facility disposal licenses will be verified) and recyclable waste to be taken to a licensed recycling facility. 31. A very detailed induction programme will be developed on site will focus on the landowners' requirements for environmental management and concerns regarding poaching. 32. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 33. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and monthly thereafter to ensure that all components of the EMP are addressed.		
	Activities within the river bed could result in the disturbance to the natural geomorphology.	34. Only soil sampling may be undertaken in the river bed. No other activities (drilling, roads, etc.) may be undertaken. 35. Pans must be avoided.	Concurrently with completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Activities within the river bed could result in safety hazards during rainy periods.	36. No sampling within the riverbed will be permitted during rainy periods. 37. A first aid station and emergency plan must be available on site.	Concurrently with completion of prospecting activities	Maintain a 100% fatal and injury free operation.
	Soil disturbance from soil sampling resulting in soil structure	38. Soil disturbances are to be limited as far as is practicable.	Concurrently with completion of prospecting activities in an area.	Retain topsoil for the reuse in rehabilitation.
No decommissioning activities will be required	No anticipated impacts.	39. No mitigation proposed.	N/A	N/A
Phase 3: Scout Drilling and Delineation Drilling				
Site Access	Destruction and / or disturbance of on-site fauna and flora.	40. A map indicating the location of each of the drilling sites must be submitted to the relevant landowners, as well as to the DMR and DWS. Upon agreement of the location of the activities the applicant proceed.	Concurrently with completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
		41. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities. 42. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 43. The area will be clearly demarcated and the EMP must be enforced. 44. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 45. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner. 46. Use existing track and roads in all instances as far as is practicable. 47. Where track clearing is necessary, raised blade clearing will be conducted to minimise disturbance and aid rehabilitation efforts and significant vegetation such as trees and large shrubs will be avoided. 48. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances and night time collisions with fauna. 49. Vehicle speed will be reduced, particularly in highly vegetated areas is one way to avoid deaths by vehicle impacts. 50. No permanent housing will be provided. No accommodation will be provide for on-site. Personnel will be house in surrounding towns. However, for the purposes of the drilling, a number of personnel may reside on demarcated campsites on the site. This will however be consulted with the landowners.		
	Soil compaction	51. Where track clearing is necessary, raised blade clearing be conducted to minimise disturbance and aid rehabilitation efforts.	Concurrently with completion of prosp activities	Remain within the ambits of the Prospecting Works Programme and Environmental

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
		52. As part of rehabilitation, all compacted roads and drill pads will be ripped and re-vegetated.		Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Vehicle traffic noise impact affecting cattle and / or wildlife.	53. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	54. Access control procedures must be agreed on with farm owners and staff trained. 55. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 56. Night security staff will be appointed during the presence of drilling equipment. 57. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. 58. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Potential destruction of heritage resources.	59. Prior to the establishment of new access roads, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Concurrently with the completion of prospecting activities	Comply with the requirements by SAHRA. No damage may result on heritage and cultural significant sites.
Site establishment activities including: (a) <i>Vegetation clearing of drill pad area</i> (b) <i>Topsoil stripping and stockpiling</i> (c) <i>Drill pad compaction</i>	Destruction and / or disturbance of on-site fauna and flora.	60. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 61. The removal of vegetation within the drill pad area will be minimized. 62. If practicable, raised blade clearing be conducted for the entire drill pad to minimise disturbance and aid rehabilitation efforts. 63. The design of the drill fluid sump must incorporate effective	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
(d) Excavation and lining of drill water sump (e) Erection of temporary site office shaded area, potable ablution facilities and water storage tanks and core bay (f) Erection of fuel storage tank (g) Erection of safety barrier (h) Waste generation and management		fauna egress to avoid entrapment. 64. A fire emergency procedure will be developed to contain and minimise the destruction of flora and faunal habitat which may result from fire. 65. An Environmental Control Officer must remain present on site, at least once every two weeks for the two months of the project and then monthly thereafter to ensure that all components of the EMP is addressed. 66. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner. 67. A very detailed induction programme will be developed on site which will focus on the landowners' requirements for environmental management and concerns regarding poaching. 68. An open channel of communication will be developed, with designated personnel responsible to remain in contact with the farmers throughout the prospecting activities. 69. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place.		
	Soil disturbance and topsoil stockpiling resulting in soil compaction and erosion.	70. In the event that the drill pad is cleared of all vegetation, lower blade clearing will be undertaken prior to the stripping of topsoil. 71. Topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. 72. Where practicable topsoil will be stripped to a depth of 10cm. 73. 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. 74. Topsoil will be stockpiles to a maximum height of 1.5m with a side slope of not more than 1:3. 75. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles to stabilise	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
		slopes.		
	Dust emission resulting from site clearing, soil stripping and construction activities (including vehicle entrained dust).	76. Based on visual observation, wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other construction activities as and when needed. 77. Depending on the need and quantity of water used for wet suppression, a suitable, low environmental impact chemical suppression alternative must be considered in order to conserve water resources.	Concurrently with the completion of prospecting activities	Remain within the designated area demarcated for prospecting activities. Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	Visual Impact affecting visual character and "sense of place".	78. 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.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. No removal of vegetation outside of demarcated areas.
	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	79. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 80. The landowner (all private and state land owners) will be notified of unauthorised persons encountered on site. 81. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site. 82. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place. 83. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 84. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.		Maintain a 100% crime free area within the control of the prospecting activities and applicant.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	Potential destruction of heritage resources.	85. Prior to the site establishment, a heritage impact assessment must be undertaken and mitigation and / or management measure for the protection of such resources must be implemented	Concurrently with the completion of prospecting activities	Comply with the requirements by SAHRA. No damage may result on heritage and cultural significant sites.
Exploration drilling and core sample collection and storage including: (a) Scout and delineation drilling (b) Drill maintenance and re-fuelling (c) Core sample collection and storage (d) Drill fluid collection, storage and evaporation Waste generation and management	Water and soil pollution resulting from disposal of drill fluids.	86. A sump will be constructed with a sufficient capacity to receive drill fluids and allow for evaporation. 87. The sump will be constructed to divert storm water away and / or around the sump to avoid clean storm water inflow.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Continued soil erosion from topsoil stockpile and soil compaction from drill pad platform.	88. 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. 89. The topsoil stockpile will be shaped to divert storm water around the drill pad to minimise soil erosion of the pad. 90. Management efforts through the use of mechanical erosion control methods will be implemented if required. This may include the use of geotextiles.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	Potential water and soil pollution resulting from hydrocarbon spills and drill maintenance activities.	91. Fuel storage tanks will have a secondary containment structure with a capacity of 110% of the total tank capacity. 92. Oils and lubricant will be stored within secondary containment structures. 93. Where practicable, vehicle maintenance will be undertaken off-site. 94. In the event that vehicle maintenance is undertaken on-site (i.e. such as breakdown maintenance), drip trays and / or UPVC sheets will be used to prevent spills and leaks onto the soil. 95. Unused machinery must be completely drained of oil and other hydrocarbons to ensure that leaks do not develop. 96. Regular inspections of all vehicles must be carried out to ensure that all leaks are identified early and rectified. 97. A sufficient number of waste receptacles will be provided. 98. Waste separation will be undertaken at source and separate receptacles will be provided (i.e. general waste, recyclables and hazardous waste). 99. Receptacles will be closed (i.e. fitted with a lockable lid) to eliminate the possibility of access by animals overnight. 100. Wastes will be removed and disposed of at an appropriately licensed landfill (facility disposal licenses will be verified) and recyclables will be taken to a licensed recycling facility.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. Retain topsoil integrity for the reuse in rehabilitation.
	Dust emissions from drilling and general site activities (including vehicle entrained dust)	101. Based on visual observation wet dust suppression will be undertaken as and when required to manage dust emissions from vehicle movement. 102. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be considered in order to conserve water resources.	Concurrently with the completion of prospecting activities	Remain within the designated area demarcated for prospecting activities. Remain within the National Environmental Management: Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	Visual Impact affecting visual character and "sense of place"	103. Visual impact of structures will be mitigated through measures as included in Item 78. 104. Visual dust dispersion will be mitigated through measures as included in Item 76.	Concurrently with completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation. No removal of vegetation

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
				outside of demarcated areas.
	Vehicle traffic and drill noise impact affecting wildlife game farm animals.	105. Site activities will be conducted during daytime hours 07h00 – 17h30 to avoid night time noise disturbances.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	106. Access control procedures must be agreed on with farm owners.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Influx of persons (job seekers) to site as a result of increased activity resulting in increased incidents of theft and opportunistic crime.	107. Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment. 108. The landowner (the Department of Rural Development and Land Reform) will be notified of unauthorised persons encountered on site. 109. If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site. 110. Meetings must be scheduled between the applicant and the mine to ensure that concerns are identified at an early stage and that management measures in line with the farming activities are put in place. 111. A local security company, in consultation with the landowners will be appointed to eliminate the potential increase in theft and security concerns. As far as practically possible the applicant will make use of local suppliers (for example drilling contractors) in consultation with the landowners. Only registered and contractors with a good track record will be utilized. 112. The applicant will prior to the commencement of prospecting activities ensure that the prospecting schedules are in line in support of the daily management of the farming activities.	Concurrently with the completion of prospecting activities	Maintain a 100% crime free area within the control of the prospecting activities and applicant.

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	Impact on the pans and associated ecosystems in the area.	113. The prospecting areas must be clearly demarcated. 114. No prospecting activities may be undertaken within the pan areas. 115. All site plans must indicate the presence of pans.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
Removal of temporary infrastructure including: (a) Removal of temporary site office shaded area, potable ablution facilities, 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.	116. 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. 117. Drill holes must be permanently capped as soon as is practicable	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Dust emissions from decommissioning activities (including vehicle entrained	118. Based on visual observation wet dust suppression will be undertaken to manage dust emissions from vehicle movement. 119. Depending on the need and quantity of water used for wet suppression, chemical suppression alternatives must be	Concurrently with the completion of prospecting activities	Remain within the designated area demarcated for prospecting activities. Remain within the National Environmental Management:

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE STANDARDS WITH
	dust).	considered in order to conserve water resources.		Air Quality Act, 2004 Dust Regulation guidelines for rural communities.
	Poor access control resulting in impacts on cattle movement, breeding and grazing practices.	120. Access control procedures must be agreed on with farm owners and all staff trained. 121. An Environmental Control Officer must remain present on site, at least once every month to ensure that all components of the EMP is addressed. 122. The applicant will be responsible for all environmental disturbance on site as a result of prospecting and will rehabilitate these impacts to the satisfaction of the landowner.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Potential water and soil pollution resulting from hydrocarbon spills.	123. All fuel storage tanks will be emptied prior to removal. 124. Drill holes must be permanently capped as soon as is practicable to eliminate the risk of groundwater contamination. 125. 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 a licensed recycling facility. 127.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.
	Soil erosion resulting from the re-spreading of topsoil before vegetation is re-established.	128. Mechanical erosion control methods will be implemented if required. This may include the use of geotextiles. 129. Re-vegetation will be conducted through hand seeding exposed areas using indigenous grass species as determined by a suitably qualified ecologist. 130. Re-vegetation efforts will be monitored every second month for a period of six months after initial seeding. 131. An effective vegetation cover of 45% must be achieved. Re-seeding will be undertaken if this cover has not been achieved after six months.	Concurrently with the completion of prospecting activities	Remain within the ambits of the Prospecting Works Programme and Environmental Authorisation.

i) Financial Provision

(1) Determination of the amount of Financial Provision.

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

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

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

Mapping of the prospecting activities could thus not be undertaken.

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

The closure objectives are to:

- Eliminate any safety risk associated with drill holes and sumps through adequate drill hole capping and backfilling.
- Remove and / or rehabilitate all pollution and pollution sources such as waste materials and spills;
- 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
- 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.

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

This Basic Assessment Report and Environmental Management Plan will be made available to each registered stakeholder for review and comment. All comments will be captured in the issues and response section and will be included into the final report.

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

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

Please take note that no mining will be undertaken.

As previously mentioned, each phase of the prospecting activities is dependent on the success of the previous. Depending on the outcome of the Phase 1 assessment, an airborne / ground geophysics survey



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

The location and extent of soil sampling and drill sites can therefore not be determined at this stage. Mapping of the prospecting activities could thus not be undertaken.

Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities.

The only rehabilitation that will specifically be required is borehole capping and revegetation:

☞ Borehole capping

Drill holes must be permanently capped as soon as is practicable. Figure 18 below provides the prepared procedure for the secure plugging of exploration drill holes.

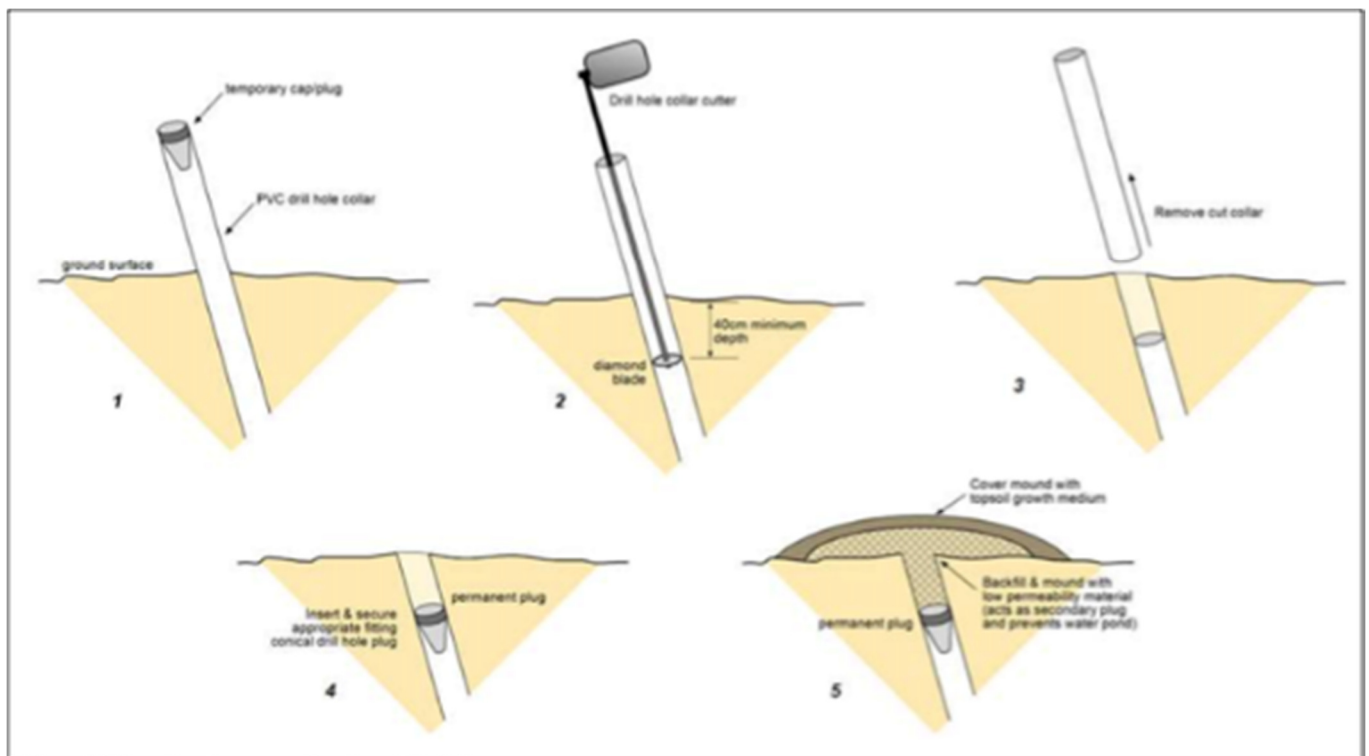


Figure 18: Borehole capping (Source: Department of Mines and Petroleum, DRAFT Guidelines for Environmentally Responsible Mineral Exploration & Prospecting in Western Australia, March 2012)

☞ 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.



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

Due to the nature of the activities, the impacts will be very limited and of short duration. The management plan is provided in such a manner as to ensure concurrent rehabilitation. The areas for drilling purposes will be the main area experiencing impacts. In this event the activities will be temporary in nature, and a detailed management plan has been provided to address potential impacts associated with these activities.

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

The financial provision for the environmental rehabilitation and closure of any mine/prospecting and its associated operations forms an integral part of the MPRDA. Sections 41(1), 41(2), 41(3) and 45 of the MPRDA deal with the financial provision for rehabilitation and closure. During 2012 the DMR made updated rates available for the calculation of the closure costs, where contractor's costs are not available these are used in assessments.

The "Guideline Document for the Evaluation of Financial Provision made by the Mining Industry" was developed by the DMR in January 2005, in order to empower the personnel at Regional DMR offices to review the quantum determination for the rehabilitation and closure of mining sites.

With the determination of the quantum for closure it must be assumed that the infrastructure has no salvage value (clean closure). The closure cost estimate (clean closure) was determined in accordance with the DMR guidelines and is based, where possible, on actual costs provided by a third party contractor. The closure costs are as follows:

➤ Sub-Total 1:	R 121,800.00(excluding VAT)
➤ Sub-Total 2:	R 148 596.00 (excluding VAT)
➤ Sub-Total 3 (clean closure cost):	R 169 399.44 (including VAT)

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

The amount the finance the prospecting activities will amount to R 169,399.44. Financing will be sourced from the capital expenditure as planned by the company; this capital will come from the treasury of the company. As part of the Prospecting Works Programme, the applicant has provided the Finsch Diamond Mine's annual financial statement for 2013. The Mine's annual financial statement for 2013 was also submitted to the DMR for confirmation that the company has available funding to implement this proposed project.

It should be noted that the current expenditure provided for in the Prospecting Works Programme does not included the calculated Financial Provision as included into this Basic Assessment, as these values were not available at the time of the submission of the Prospecting Works Programme.

The provision for closure, should be updated into the Prospecting Works Programme prior the decision by the DMR should this decision be positive.



Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

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

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Phase1: Data Acquisition and Desktop Study	Planning finalisation.	A detailed prospecting plan must be developed and submitted to the relevant and adjacent landowners. The buffers (100m) around the pans and rivers must be maintained for the purposes of drilling activities. These buffers must be indicated on the prospecting plan. All sensitive tree species must be demarcated on the prospecting plan. The ECO or specialist in the field of Northern Cape Tree Species must fulfill this role. No sensitive or protected tree	Project Manager Project Manager (in consultation with the ECO) ECO	Once off Once off Once off

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		species may be relocated without approval from the relevant departments in the form of a permit.		
Phase 2: Target Generation and Ground Truthing	Noise impacts resulting from site fly-overs affecting cattle and game farm animals	Adjacent landowners will be informed of the planned dates of the Airborne geophysics survey and a grievance mechanism will be made available.	Prospecting Manager	Once-off upfront consultation with affected parties. As required as grievances are received. 1. Consultation to be signed-off by Environmental Management. 2. All grievances to be signed-off by Environmental Management. 3. All corrective action and close out of grievances to be signed-off by Environmental Management. 4. Proof of consultation to be submitted to the Department of Mineral Resources prior to airborne survey is conducted. 5. Record of grievances, corrective action taken and close out to be submitted to the Department of Mineral resources at the end of the project phase.
Phase 3: Ground Geophysics and Soil Sampling	All site activities to be undertaken must be communicated with directly affected landowners.	As soon as the extent of site activities are known. These must be communicated with directly affected landowners. The following procedures must developed in conjunction with these landowners: 1. Emergency Preparedness and Response Plan; and	Prospecting Manager	1. Confirmation of the extent of site activities to be submitted to the Department of Mineral Resources prior to such activities been undertaken. 2. Proof of consultation with directly affected landowners and the outcome of such consultation to be submitted to the Department of Mineral Resources. 3. Continuous monitoring of compliance with the access control procedure will be undertaken.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		2. Access control procedures and requirements.		
Phase III: Exploratory Drilling	Visual inspection of soil erosion and / or compaction	All exposed areas, access roads, the drill pad and soil stockpiles must be monitored for erosion on a regular basis and specifically after rain events.	Prospecting Manager Contractor	Weekly and after rain events 1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources.
	Dust generated will be assessed through visual observation	If dust outfall is excessive and regarded to affect any sensitive receptors a monitoring programme must be initiated based on the input of a suitably qualified air quality specialist.	Prospecting Manager Contractor	On-going 1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources.
	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 1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	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	Weekly 1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources. 4. Incident reporting will be undertaken as required in terms of the relevant legislation including, but not limited to, the: a) Mineral and Petroleum Resources Development Act 28 of 2002; and b) National Water Act 36 of 1998.
Post Closure Monitoring	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 around drill holes and undertake additional backfilling if required.	Prospecting Manager	Monthly for a period of 6 months after rehabilitation activities are concluded. 1. Monthly monitoring reports to be signed-off by the Environmental Manager. 2. Corrective action to be confirmed and signed-off by the Environmental Manager. 3. Consolidated monthly monitoring reports (including the corrective action taken) to be submitted to the Department of Mineral Resources. 4. Final impact and risk assessment report for site closure to be submitted to the Department of Mineral Resources for approval.

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

Annual performance assessments must be undertaken on the EMP. These reports must also include the assessment of the financial provision. The reports should be submitted to the DMR.

(m) Environmental Awareness Plan

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

An Environmental Awareness and Risk Assessment Schedule have been developed and is outline in Table 20. The purpose of this schedule is to ensure that employees are not only trained but that the principles are continuously re-enforced.

Table 20: Environmental Training and Awareness Schedule

Frequency	Time allocation	Objective
Induction (all staff and workers)	1 hour training on environmental awareness training as part of site induction	<ol style="list-style-type: none"> 1. Develop an understanding of what is meant by the natural environmental and social environment and establish a common language as it relates to environmental, health, safety and community aspects. 2. Establish a basic knowledge of the environmental legal framework and consequences of non-compliance. 3. Clarify the content and required actions for the implementation of the Environmental Management Plan. 4. Confirm the spatial extent of areas regarded as sensitive and clarify restrictions. 5. Provide a detailed understanding of the definition, the method for identification and required response to emergency incidents.
Monthly Awareness Talks (all staff and workers)	30 minute awareness talks	Based on actual identified risks and incidents (if occurred) reinforce legal requirements, appropriate responses and measures for the adaptation of mitigation and/or management practices.
Risk Assessments (supervisor and workers involved in task)	Daily task based risk assessment	Establish an understanding of the risks associated with a specific task and the required mitigation and management measures on a daily basis as part of daily tool box talks.

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

As prescribed in Table 20, 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.

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.

- o 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
 - Content and implementation of the approved Environmental Management Plan
 - Allocated responsibilities and functions
 - Management and Mitigation Measures
 - Identification of risks and requirements adaptation
 - Sensitive environments and features
 - Description of environmentally sensitive areas and features
 - Prohibitions as it relates to activities in or in proximity to such areas
 - 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.

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.

Emergency Preparedness and Response

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

Incident Reporting Procedure

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

- 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;
- Provide details of the incident (time, date, location);
- The details of the cause of the incident;
- Identify the aspects of the environment impacted;
- The details corrective action taken, and
- The identification of any potential residual or secondary risks that must be monitored and corrected or managed.

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.

(n) Specific information required by the Competent Authority

No specific information was required by the Competent Authority.

2. UNDERTAKING

The EAP herewith confirms

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

Signature of the Environmental Assessment Practitioner:

EnviroGistics (Pty))td

Name of company:

29 June 2015

Date:

Undertaking by the client:

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 guidelines 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
Designation	
Signature	
Date	

PLEASE TAKE NOTE THAT THE UNDERTAKING WILL BE SIGNED, AS PART OF THE FINAL EMP, ONCE ALL COMMENTS ON THIS DRAFT REPORT HAVE BEEN RECEIVED FROM STAKEHOLDERS

-END-

Annexures

Annexure A: Environmental Authorisation Acceptance Letter

Annexure B: Tanja Bekker Curriculum Vitae

Annexure C: Public Participation Process

Annexure D: Land Claims Request Letter

Annexure E: SAHRA Heritage Resources Notification and Response

Annexure F: EIA Rating

Annexure G: Motivation for not investigating Alternatives

Annexure H: Composite Map