

**PROPOSED PROSPECTING RIGHT WITH BULK SAMPLING  
OVER VARIOUS FARMS IN THE HAY AND KURUMAN  
ADMINISTRATIVE DISTRICTS, NORTHERN CAPE**

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT &  
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

***DEPARTMENTAL REFERENCE NUMBER:***

***NC 30/5/1/1/2/13826 PR***

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The Applicant, K2022641005 (SOUTH AFRICA) (Pty) Ltd, applied for a prospecting footprint of 15 602.0765 ha over the properties listed in Table 1 (excluding Farm No 570). During the EIA process the need to incorporate Farm No 570 (Zaai Plaats) in this application arose and the farm is therefore discussed as part of this DEIAR & EMPR. An amended EA Application Form will be submitted with the FEIAR & EMPR to the DMRE to incorporate Farm No 570 (Zaai Plaats) in the application footprint (16 162.1945 ha with Farm No 570 (Zaai Plaats)).

Should the PR be issued, the proposed project will comprise of six phases that can be divided into non-invasive- and invasive prospecting (Table 4). The targeting of all sample sites will be dependent on the results obtained during the preceding phases of prospecting. The prospecting activities do not require the use of permanent equipment/infrastructure. A central site camp will be established at an area agreed to by the landowner where mobile containers will be used as office space and for storage. Chemical ablutions will be established, and the site camp will be fenced to control access. All chemicals/hydrocarbons will be kept in the storage containers or bunded areas with impermeable surfaces. Rehabilitation will include continuous reinstatement of prospected areas, and the management of invasive plant species and/or erosion.

### **Outcome of Project Alternatives**

Refer to Table 9 for a summary of the final project proposal.

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

The initial project proposal was amended following a remote sensing exercise to target the farms with the greatest mineral potential. **Consequently, the farm Devon No 277 will not be prospected as it will be omitted from the application footprint.**

If mineralisation is confirmed on the other earmarked farms, the study areas will be geologically mapped in detail to determine the extents of the mineralisation and provide a basis for additional exploration to quantify the mineralisation. Invasive prospecting will then only target the farms/areas with promising results. Presently it is proposed that invasive prospecting will be conducted in the target areas of the following farms:

- ◆ Bermolli No 583/5 (*unless declared a Nature Reserve before granting of the PR*),
- ◆ Engelsdraai No 221/RE,
- ◆ Witdraai No 204/1,
- ◆ Vaalwater No 84/1 & RE, and
- ◆ Farm No 570 (Zaai Plaats).

b) The property on which, or location where, it is proposed to undertake the activity.

The project proposal is to prospect the study area with bulk sampling.

c) Design and layout of the activity.

The invasive prospecting plan (showing drilling, and pit sampling locations) will be determined based on the outcome of phases 1, 2, 4, and 6 (Table 4). Thus far the remote sensing data and initial freshwater- and terrestrial sensitivity results (refer to *Part A(1)(g)(iv)(1)(c) Description of the specific environmental features and infrastructure on the site – Site Specific Geology, Site Specific Hydrology and Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna*) are the main factors steering the design/layout proposal regarding invasive prospecting. The project proposal entails the following regarding the design and layout of the project:

- ◆ *Devon No 277* – no prospecting;
- ◆ *Botha No 313* – no invasive prospecting;
- ◆ *Bermolli No 583/4* – no invasive prospecting;
- ◆ *Bermolli No 583/5* – invasive prospecting subject to the management and mitigation measures proposed in this document. *However, if declared a nature reserve before the granting of the PR this farm will be omitted from the PR programme;*
- ◆ *Engelsdraai No 221/1* – no invasive prospecting;
- ◆ *Engelsdraai No 221/RE* – invasive prospecting subject to the management and mitigation measures proposed in this document;
- ◆ *Witdraai No 204/RE* – no invasive prospecting;
- ◆ *Witdraai No 204/1* – invasive prospecting subject to the management and mitigation measures proposed in this document;
- ◆ *Vaalwater No 84/1 & RE* – invasive prospecting subject to the management and mitigation measures proposed in this document;
- ◆ *Vaalwater No 84/2* – no invasive prospecting; and
- ◆ *Farm No 570 (Zaai Plaats)* – invasive prospecting subject to the management and mitigation measures proposed in this document.

d) Technology to be used in the activity.

A specialised coring drill, that does not require the use of water, will collect core samples down to a maximum of 10 m. Geophysical equipment will be needed for ground electro-magnetic, magnetic and gravity surveys. The bulk sampling trenches/pits will be dug by excavator, upon which the loosened material will be moved by FEL to the crushing/milling plant. The material will be crushed, screened, and sized to product stockpiles from where it will be transported off-site by trucks.

e) Operational aspects of the activity.

The project allows some flexibility in terms of when, where, and how the sampling and surveying is conducted. The Applicant confirmed that sampling sites will remain >100 m from all confirmed active

watercourses. Should the proposed mitigation measures be implemented no need for alternative operational aspects could be identified.

f) Option of not implementing the activity (No-go Alternative).

The Northern Cape is known for its mineral riches, and the remote sensing study showed that some of the earmarked areas have a high mineral potential. Should the no-go option be applied to this application, the areas will most likely see another application by another party within the near future. Therefore, applying the no-go option presently will not prevent the prospecting of the area but most likely only postpone it. Considering this, it is proposed that if the recommended management and mitigation measures are implemented the environmental risks can be managed and the area will be rehabilitated that will allow landowners to continue the use of the prospected areas.

However, based on the findings of the EIA it is proposed that the no-go option be implemented for the farm Devon No 277. Should Portion 5 of Bermolli No 583 be promulgated as a nature reserve before the prospecting right is granted this farm must also be removed from the PR footprint.

It is further proposed that the following farms are removed from the invasive prospecting programme:

- ◆ Portion 1 and Remaining Extent of Botha No 313;
- ◆ Portion 4 of Bermolli No 583;
- ◆ Portion 1 of Engelsdraai No 221;
- ◆ Remaining Extent of Witdraai No 204;
- ◆ Portion 2 of Vaalwater No 84

### **Public Participation Process**

The relevant landowners, stakeholders and I&AP's were informed of the prospecting right application by an advertisement in the Noordkaap Bulletin, and on-site notices that were placed at nine (9) conspicuous places. A notification letter inviting comments on the DSR over a 30-days commenting period (ending 25 March 2024) was also distributed. Further to this an advertisement was placed in the Noordkaap Bulletin inviting the surrounding landowners whose contact details could thus far not be obtained to register on the project. The comments received on the DSR were incorporated into the final Scoping Report (FSR) that was approved by the DMRE on 29 July 2024.

KMR lodged an appeal in terms of Section 96 of the MPRDA against the acceptance of this application with the DMRE (National) that was granted on 10 September 2024. Following discussions with the national and regional DMRE offices, the Applicant lodged its own Section 96 appeal against the decision of the DMRE (National) to suspend the acceptance letter on the basis that the farm Devon No 277 will be omitted from the prospecting right application. This application is pending with the DMRE.

Following discussions with the DMRE-NC (competent authority) it was confirmed that the public participation process can continue while the Applicant's Section 96 application is being considered by the DMRE (National). This report the Draft Environmental Impact Assessment Report (DEIAR) was therefore compiled and will be circulated for public comments over a 30-day period that extends until 04 November 2024. The comments received on the draft EIA & EMPR will be incorporated into the final EIA & EMPR to be submitted to the DMRE for decision making.

### **Environmental Impact Assessment Report**

The environmental impact assessment report identifies the potential positive and negative impacts that the proposed activity will have on the environment and the community as well as the aspects that may impact on the socio-economic conditions of directly affected persons and proposes possible mitigation measure that could be applied to modify / remedy / control / stop the identified impacts. The key finding of the environmental impact assessment regarding the proposed project entail the following:

#### **Land Use**

The land capability of Bermolli No 583/5, Engelsdraai No 221/RE, Witdraai No 204/1, Vaalwater No 84/1 and RE, Farm No 570 (Zaai Plaats) (earmarked for invasive prospecting) range between Low and Medium. The farms are mainly used for grazing with Bermolli No 583/5 earmarked as a potential biodiversity off-set area of Kolomela. The Applicant will engage the landowners of the earmarked properties regarding co-existence agreements prior to commencement of invasive prospecting, and no site camp and/or drill site will be sited on sensitive areas. Once rehabilitated, all sampling sites will again be available for agricultural use.

#### **Topography**

The invasive prospecting activities will temporarily impact the topography of the areas during the operational phase. Thereafter all boreholes will be capped, and the trenches/bulk sampling sites will be backfilled. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance. Should the mitigation measures proposed in this report be implemented during the decommissioning phase, the activity will have no residual impact on the topography upon closure of the PR.

#### **Visual Characteristics**

The area of disturbance is expected to be  $\pm 200$  m<sup>2</sup> per drill site and between 2 500 m<sup>2</sup> (0.25 ha) and 10 000 m<sup>2</sup> (1 ha) per bulk sampling area that will continuously be rehabilitated as prospecting progresses. The prospecting activities does not require the alteration of vast vegetated areas, and no permanent infrastructure will be erected. Considering this, the potential impact of the prospecting operation on the visual characteristics of the receiving environment is deemed to be of low-medium significance once the mitigation measures are implemented.

## **Air Quality and Noise Ambiance**

The prospecting activity does not trigger an application in terms of the NEM:AQA, 2004. Emissions to be generated will mainly consist of dust due to drilling, sampling and driving on site. Due to the small scale of the operation (per sample site) the noise levels to be generated will be low and will mainly stem from the operation of the prospecting equipment and vehicles traveling on the roads. The dust emissions and/or noise levels that may arise from the proposed prospecting activities, if mitigated by the Applicant, will therefore have a low impact on the receiving environment.

## **Geology**

The remote sensing study suggests that the following farms hold the greatest kieselguhr potential and invasive prospecting will most likely target these farms:

- ◆ Witdraai No 204, 1
- ◆ Engelsdraai No 221/RE;
- ◆ Bermolli No 583/5
- ◆ Vaalwater No 84/1 and RE; and
- ◆ Farm No 570 (Zaai Plaats).

## **Hydrology**

The initial sensitivity layers created for freshwater ecosystems (Figure 79 – 84) are crucial for planning purposes. The hydrologists recommended that the exact location of the freshwater ecosystems be groundtruthed through a second phase investigation. Once the invasive prospecting programme (sampling pattern) is available the hydrologist will need to revisit the target areas to refine the identified sensitivities.

The findings of the second phase investigation must be approved, with the sampling plan, by the DMRE prior to commencement. The Applicant confirmed that the sampling sites will remain >100 m from all confirmed active watercourses. Upon closure the sampled areas must be backfilled and rehabilitated to an acceptable state to be determined by the hydrologist.

## **Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna**

The initial sensitivity layers created for terrestrial ecosystems (Figure 79 – 84) are crucial for planning purposes. It is imperative to avoid sensitive areas classified as 'High' sensitivity (once groundtruthed), to protect the environment and minimize project risks. Furthermore, it's anticipated that additional fieldwork will be necessary (by the ecologist) at selected prospecting sites to refine the identified sensitivities. The findings of the second phase investigation must be approved, with the sampling plan, by the DMRE prior to commencement.

Should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.

### **Cultural and Heritage Environment**

The desktop study provided an overview of potential heritage resources that could be affected by the proposed activity. The impact to heritage resources is expected to be low provided that the recommendations of the specialists are adhered to, and SAHRA approval is obtained. Once the sampling sites have been confirmed these areas must be subjected to a heritage walk down, prior to the commencement of invasive prospecting activities. Burial sites, memorials and graves must be avoided with a 30 m buffer zone.

### **Palaeontology**

Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. Since there is an extremely high chance that diatoms will be found and destroyed, and a small chance that trapped or transported fossils occur in the sands and may be disturbed a Fossil Chance Find Protocol has been proposed by the specialist. Taking account of the defined criteria, the potential impact to fossil heritage resources is extremely high. Therefore, samples must be collected and deposited in a recognised repository, such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action was taken.

### **Site Specific Infrastructure**

The prospecting method is such that it can be moved away from build structures and existing infrastructure. Jeep-tracks to some of the areas will be developed in agreement with the landowner, and it is not expected that the proposed activity will impact on or necessitate the removal of existing infrastructure. No prospecting will be done on Devon No 277 and no invasive prospecting on Botha No 313, safeguarding the infrastructure and current land use of these farms (including the railway line on Devon No 277/1) against disturbance.

### **Environmental Management Programme (EMPR)**

The EMPR provides a description of the impact management outcomes and closure objectives. It presents the impacts to be mitigated in their respective phases as well as stipulates the mitigation measures to be applied on site.

The financial provision amount that will be necessary for the rehabilitation of damages caused by the operation, both sudden closures during the normal operation of the project and at final, planned closure gives a sum of R 266 173.93. The Applicant proposes the payment schedule as presented in the following table regarding the financial provision amount:

PHASE	ACTIVITY	SKILLS REQUIRED	TIMEFRAME	PROPOSED REHABILITATION GUARANTEE AMOUNT (ANNUALLY CUMULATIVE)
1	<b>Non-Invasive Prospecting</b>  Desktop Geological Study: Literature Survey / Review	Geologist	Month 1-6	-
2	<b>Non-Invasive Prospecting</b>  Geological Field Mapping	Geologist & Field Crew	Month 6-12	Environmental liability <b><u>Year 1</u></b>  R 89 500.00
3	<b>Invasive Prospecting</b>  Exploration pits and sampling  Phase 1 – Bulk Sampling 50 000 m <sup>3</sup> @ density of 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 12-36	Environmental liability <b><u>Year 2</u></b>  R 89 500.00
4	<b>Non-Invasive Prospecting</b>  Geological Feasibility Target Selection  Metallurgical Testing and Analysis	Geologist / Laboratory Technicians / Metallurgical Specialists	Month 36-42	Environmental liability <b><u>Year 3</u></b>  R 45 000.00
5	<b>Invasive Prospecting</b>  Exploration pits and sampling  Phase 2 Bulk Sampling 50 000 m <sup>3</sup> @ density 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 36 - 54	Environmental liability <b><u>Year 4 &amp; 5</u></b>  R 42 173.93
6	<b>Non-Invasive Prospecting</b>  Analytical Desktop Pre-Feasibility Study.  Feasibility Study and Mining Right Application.	Economic Geologist / Mining Engineer / Project Engineer / Consulting Company	Month 54-60	-



ASTM	American Society for Testing and Materials
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Areas
CDH	Cliffe Dekker Hofmeyr
CR	Critically Endangered
DAERL	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
DEIAR	Draft Environmental Impact Assessment Report
DFFE	Department of Forestry, Fisheries and Environmental Affairs
DMRE	Department of Mineral Resources and Energy
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
ECZ	Environmental Control Zones
EIA	Environmental Impact Assessment
EIA	Early Iron Age
EMF	Environmental Management Framework
EMPR	Environmental Management Programme
EN	Endangered
ESA	Ecological Support Area
ESA	Earlier Stone Age
FEIAR	Final Environmental Impact Assessment Report
FEL	Front-end-loader
FEPA	Freshwater Ecosystem Priority Area
FSR	Final Scoping Report
GDP	Gross Domestic Product
GNR	Government Notice Number
GPS	Global Positioning System
GVA	Gross Value Added
HAS	Hazardous Substances Act, 1973 (Act No 15 of 1973)
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
JMLM	Joe Morolong Local Municipality

JTGDM	John Taolo Gaetsewe District Municipality
KMR	Kudumane Manganese Resources (Pty) Ltd
LC	Least Concern
LIA	Late Iron Age
LN	Listing Notice
LSA	Late Stone Age
LT	Least Threatened
MHSA	Mine Health and Safety Act, 1996 (Act No 29 of 1996)
MIA	Middle Iron Age
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)
MSA	Middle Stone Age
NCNCA	Northern Cape Nature Conservation Act, 2009 (Act No 9 of 2009)
NCPAERC	Northern Cape Protected Area Expansion Review Committee
NEM:AQA	National Environmental Management: Air Quality Control Act, 2004 (Act No 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NFA	National Forest Act, 1998 (Act No 84 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NRTA	National Road Traffic Act, 1996 (Act No 25 of 1996)
NT	Near Threatened
NWA	National Water Act, 1998 (Act No 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act No 85 of 1993)
PAOI	Project Area of Influence
PCB's	Polychlorinated Biphenyls
PCO	Pest Control Officer
PES	Present Ecological State
PIA	Palaeontological Impact Assessment
PKSDM	Pixley Ka Seme District Municipality
POC	Species of Conservation Concern Potential Occurrence
PPE	Personal Protection Equipment
PR	Prospecting Right
PSM	Palaeontological Sensitivity Map
RS	Remote Sensing
SAHRA	South African Heritage Resources Agency
SAMRAD	South African Mining Mineral Resources Administration System
SAMREC	South African Mineral Resource Committee
SANBI	South African National Biodiversity Institute

SANS	South African National Standards
SCC	Species of Conservation Concern
SIOC	Sishen Iron Ore Company (Pty) Ltd
SHERQ	Health & Safety, Environmental and Quality
SLM	Siyancuma Local Municipality
SWMA	Sub-Water Management Area
SWSA	Strategic Water Source Area
TFR	Transnet Freight and Rail
TLM	Tsantsabane Local Municipality
ToPS	Threatened or Protected Species
UMK	United Manganese of Kalahari (Pty) Ltd
WMA	Water Management Area
WUA	Water Use Authorisation
WUL	Water Use Licence
VU	Vulnerable
ZAR	Zuid-Afrikaansche Republiek
ZFMDM	ZF Mgcawu District Municipality



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**mineral resources**

Department:  
Mineral Resources  
**REPUBLIC OF SOUTH AFRICA**

## **ENVIRONMENTAL IMPACT 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).

<b>NAME OF APPLICANT:</b>	K2022641005 (SOUTH AFRICA) (Pty) Ltd
<b>TEL NO:</b>	078 045 0316
<b>FAX NO:</b>	N/A
<b>POSTAL ADDRESS:</b>	Postnet Suite No 356, Private Bag X15, Somerset West, 7129
<b>PHYSICAL ADDRESS:</b>	Suite 2.1 On the Greens, Golf Village, De Beers Avenue, Somerset West, 7130
<b>FILE REFERENCE NUMBER SAMRAD:</b>	NC 30/5/1/1/2/13826 PR

## 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 Authorization 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 Regulation, 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 considered 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 authorization 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 failure to meet the requirements of the Regulation and will lead to the Environmental Authorization 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 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.

The objective of the environmental impact assessment process is to, through a consultative process-

- (a) determine the policy and legislative context within the activity is located and document how the proposed activity complies with and responds to the policy and legislative context,
- (b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location,
- (c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment,
- (d) determine the –
  - (i) nature, significance, consequence, extent, duration, and probability of the impacts occurring to inform identified preferred alternatives, and
  - (ii) degree to which these impacts-
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources, and
    - (cc) can be avoided, managed, or mitigated;
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- (f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measures to manage, avoid or mitigate identified impacts, and
- (h) identify residual risks that need to be managed and monitored.

## PART A

# SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT

## 1. CONTACT PERSON AND CORRESPONDENCE ADDRESS

### a) Details of Greenmined Environmental (Pty) Ltd

In terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) the proponent/applicant must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the Act. K2022641005 (Pty) Ltd (hereinafter the "Applicant") appointed Greenmined Environmental (Pty) Ltd (hereinafter "Greenmined") to undertake the study needed. Greenmined has no vested interest in the Applicant or the proposed project and hereby declares its independence as required by the EIA Regulations, 2014 (as amended).

#### i) Details of the EAP

Name of the Practitioner: Ms Christine Fouché  
Tel No: 021 850 8875 / 082 811 8514  
Fax No: 086 546 0579  
E-mail address: [christine.f@greenmined.co.za](mailto:christine.f@greenmined.co.za)

#### ii) Expertise of the EAP

##### (1) The qualifications of the EAP

(With evidence).

Ms Fouché has a Diploma in Nature Conservation and a B.Sc. in Botany and Zoology. Full curriculum vitae with evidence is attached as Appendix M.

##### (2) Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

Ms Fouché has nineteen years' experience in doing Environmental Impact Assessments and mining related applications in South Africa. Ms Fouché is a registered Environmental Assessment Practitioner (registration no: 2019/1003) with EAPASA (Environmental Assessment Practitioners Association of South Africa) since 2019. See a list of past projects attached as Appendix M.

## b) Description of the property

*In this document any reference that is made to a specific farm includes all the relevant portions and remainders of that property unless otherwise noted.*

Table 1: Property description.

<b>Farm Name:</b>	<ol style="list-style-type: none"> <li>1. Remaining Extent of the farm Botha No 313</li> <li>2. Portion 1 of the farm Botha No 313</li>   <li>3. Remaining Extent of the farm Devon No 277</li> <li>4. Portion 1 of the farm Devon No 277</li> </ol> <p><b><i>(Devon No 277 will be removed from the PR application upon granting of the Applicant's Section 96 application in terms of the MPRDA pending with the DMRE)</i></b></p> <ol style="list-style-type: none"> <li>5. Portion 4 of the farm Bermolli No 583</li> <li>6. Portion 5 of the farm Bermolli No 583</li>   <li>7. Remaining Extent of the farm Engelsdraai No 221</li> <li>8. Portion 1 of the farm Engelsdraai No 221</li>   <li>9. Remaining Extent of the farm Witdraai No 204</li> <li>10. Portion 1 of the farm Witdraai No 204</li>   <li>11. Remaining Extent of the farm Vaalwater No 84</li> <li>12. Portion 1 of the farm Vaalwater No 84</li> <li>13. Portion 2 of the farm Vaalwater No 84</li>   <li>14. Farm No 570 (Zaai Plaats)</li> </ol> <p><i>(In this document any reference that is made to a specific farm includes all the relevant portions and remainders of that property unless otherwise noted.)</i></p>
<b>Application area (Ha)</b>	16 162.1945 ha
<b>Magisterial District:</b>	<ul style="list-style-type: none"> <li>◆ Hay Administrative District, and</li> <li>◆ Kuruman Administrative District</li> </ul>
<b>Distance and direction from nearest town</b>	<p>Farms Botha No 313 and Devon No 277 are ±20 km east of Hotazel when travelling along the R380 in a south-eastern direction.</p> <p>Farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204, Vaalwater No 84, and Farm No 570 (Zaai Plaats) are between 30 km and 60 km south-west of Postmasburg when driving along the R383 in a southern direction.</p>
<b>21-digit Surveyor General Code for each farm portion</b>	<ol style="list-style-type: none"> <li>1. C0410000000031300000</li> <li>2. C0410000000031300001</li>   <li>3. C0410000000027700000</li> </ol>



	4. C04100000000027700001
	5. C03100000000058300004
	6. C03100000000058300005
	7. C03100000000022100000
	8. C03100000000022100001
	9. C03100000000020400000
	10. C03100000000020400001
	11. C03100000000008400000
	12. C03100000000008400001
	13. C03100000000008400002
	14. C03100000000057000000

**c) Locality map**

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

The requested maps are attached as Appendix B1 – B3.

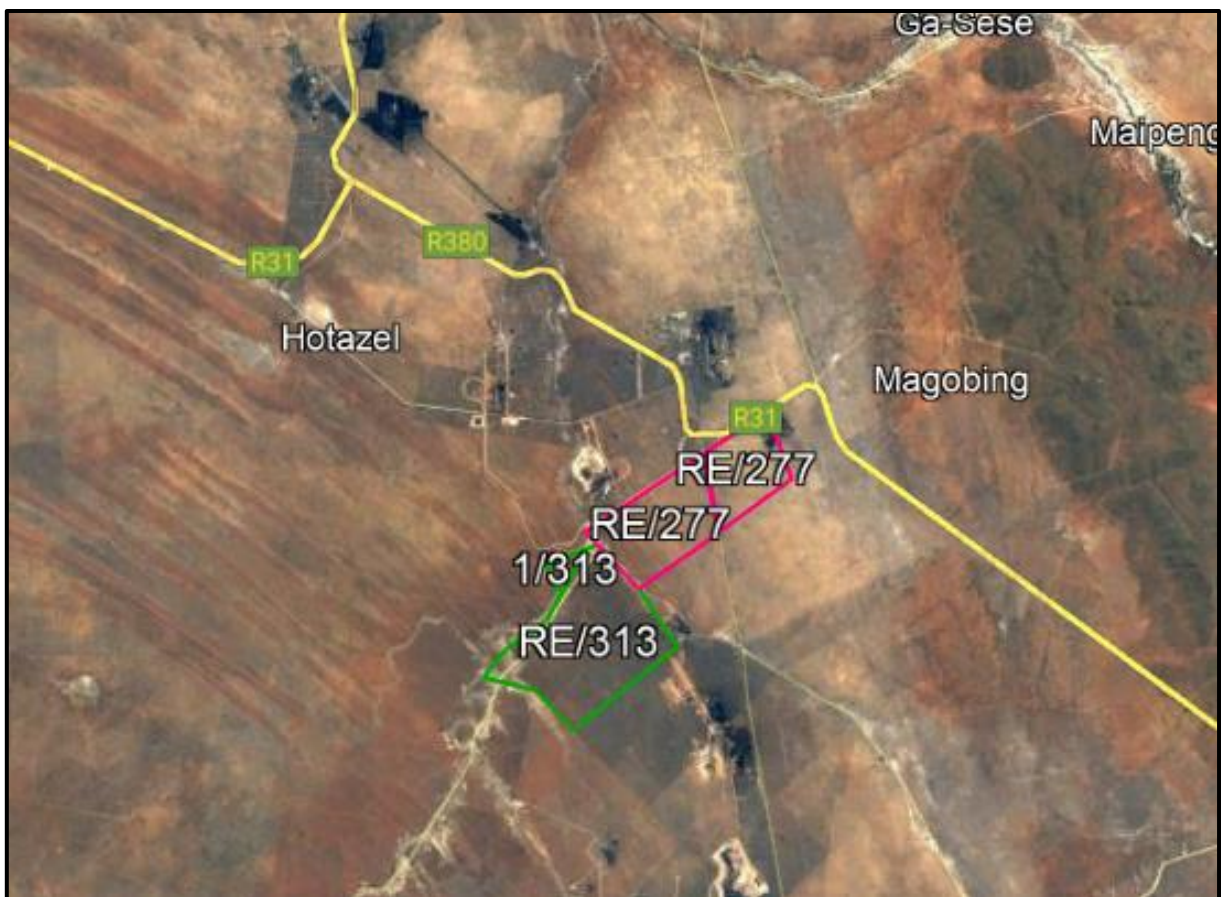


Figure 1: Satellite view showing the proposed prospecting right footprint over the farms Botha No 313 and Devon No 277. (Image obtained from Google Earth)

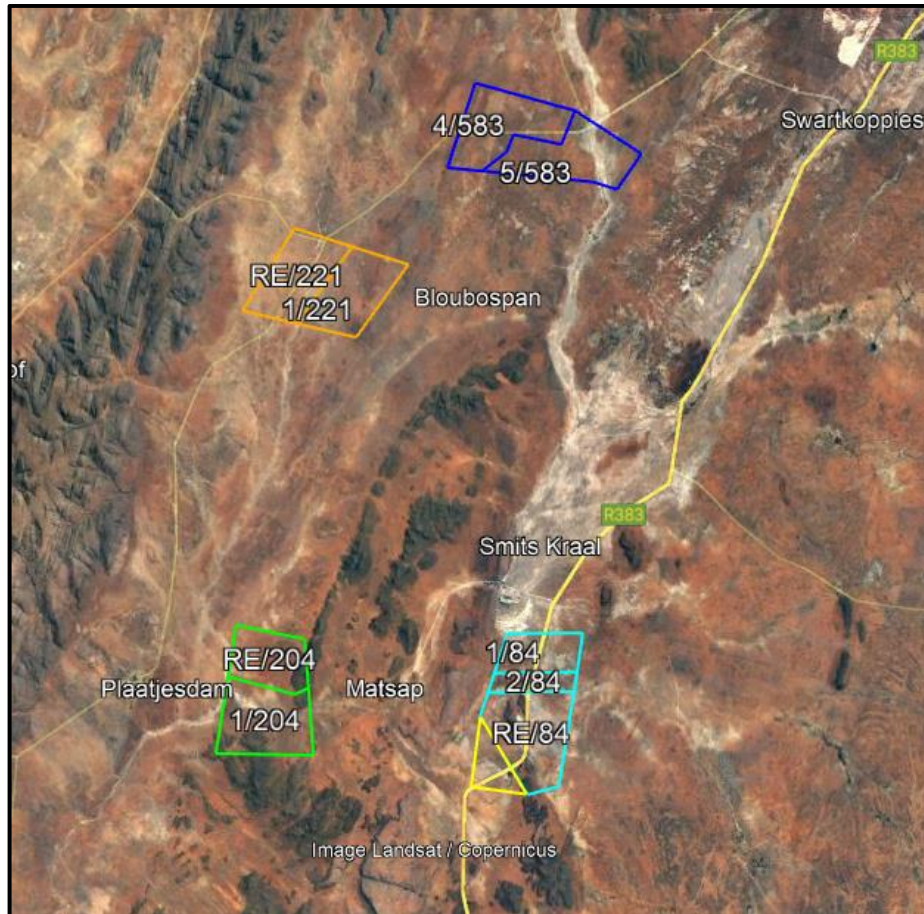


Figure 2: Satellite view showing the proposed prospecting right footprint over the farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204, Vaalwater No 84, and Farm No 570 (Zaai Plaats). (Image obtained from Google Earth)

#### 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, K2022641005 (SOUTH AFRICA) (Pty) Ltd, applies for a prospecting right (PR) with bulk sampling, and environmental authorisation (EA) for diatomite ( $\text{SiO}_2 \cdot n\text{H}_2\text{O}$ ) / diatomaceous earth / kieselguhr (hereafter referred to as kieselguhr) over 16 162.1945 ha that extends over the properties listed in Table 1 above within the Hay and Kuruman Administrative Districts of the Northern Cape.

Should the relevant authorisations be granted, and the project commence the principal prospecting activities will entail the following:

- ◆ Non-Invasive Prospecting:
  - ▶ Desktop geological studies (Phase 1),
  - ▶ Geological field mapping (Phase 2),
  - ▶ Feasibility studies and target selection (Phase 4 & 6),
  - ▶ Metallurgical Testing and Analysis (Phase 4),

- ◆ Invasive Prospecting (with bulk sampling):
  - Drilling and excavation of trenches, exploration pits and collecting of bulk samples (Phase 3 & 5),
  - Sloping, landscaping, and rehabilitation the affected areas (Phase 3 & 5).

Upon commencement, the proposed project will trigger listed activities (see table below) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended) and therefore requires an environmental impact assessment (EIA) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

The site layout plan can only be compiled once the final sampling target areas were identified following the non-invasive prospecting phases. However, Figure 5 provides a schematic representation of the proposed prospecting activities, and the site sensitivity maps (Figure 79 - 84) highlight the areas where invasive prospecting is dissuaded.

**i) Listed and specified activities**

*Table 2: Listed and specified activities triggered by the proposed application.*

<b>NAME OF ACTIVITY</b> (All activities including activities not listed) (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	<b>AERIAL EXTENT OF THE ACTIVITY</b> Ha or m <sup>2</sup>	<b>LISTED ACTIVITY</b> Mark with an X where applicable or affected.	<b>APPLICABLE LISTING NOTICE</b> (GNR 544, GNR 545 OR GNR 546)/NOT LISTED
<b>Phase 1: Non-Invasive Prospecting:</b> Desktop Geological Study: Literature Survey / Review	N/A: Non-invasive Prospecting	N/A	Not listed.
<b>Phase 2: Non-Invasive Prospecting:</b> Geological Field Mapping	N/A: Non-invasive Prospecting		
<b>Phase 3: Invasive Prospecting:</b> Exploration pits and sampling, Slope, landscape, and rehabilitate the affected areas.	15 pits/trenches of 2 500 m <sup>2</sup> 15 pits/trenches of 10 000 m <sup>2</sup> 15 pits/trenches of 7 500 m <sup>2</sup>	X	◆ GNR 983 of 2014 (as amended) Activity 20 ◆ GNR 984 of 2014 (as amended) Activity 19

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
<p>GNR 983 of 2014 (as amended) Activity 20:</p> <p><i>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, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the prospecting right.</i></p>			
<p>GNR 984 of 2014 (as amended) Activity 19:</p> <p><i>The removal and disposal of a mineral, which requires a permission ated in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.</i></p>			
<p><b>Phase 4: Non-Invasive Prospecting:</b></p> <p>Geological Feasibility, Target Selection, Metallurgical Testing and Analysis.</p>	<p>N/A: Non-invasive Prospecting</p>	<p>N/A</p>	<p>Not listed.</p>
<p><b>Phase 5: Invasive Prospecting:</b></p> <p>Exploration pits and sampling, Slope, landscape, and rehabilitate the affected areas.</p>	<p>15 pits/trenches of 2 500 m<sup>2</sup></p> <p>15 pits/trenches of 10 000 m<sup>2</sup></p> <p>15 pits/trenches of 7 500 m<sup>2</sup></p>	<p>X</p>	<p>◆ GNR 983 of 2014 (as amended) Activity 20</p> <p>◆ GNR 984 of 2014 (as amended) Activity 19</p>
<p><b>Phase 6: Non-Invasive Prospecting</b></p> <p>Analytical Desktop Pre-Feasibility Study.</p> <p>Feasibility Study and Mining Right Application (if applicable).</p>	<p>N/A: Non-invasive Prospecting</p>	<p>N/A</p>	<p>Not listed.</p>

**ii) Description of the activities to be undertaken**

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

**1. BACKGROUND INFORMATION**

*(Information obtained from the article by Hobart M. King: Diatomite; The sedimentary rock used as a filter, absorbent, filler, abrasive and more. <https://geology.com/rocks/diatomite.shtml>)*

Kieselguhr, diatomaceous earth and diatomite are the names commonly used for remarkably light, dull white or pale-coloured, massive to finely laminated chalky-looking, highly porous sediment composed mainly of the minute hollow opaline protective shells of unicellular aquatic plants known as diatoms.

Diatomite (kieselguhr) is a very porous rock with a fine particle size and a low specific gravity. These properties make it useful as a filter media, an absorbent, and as a lightweight filler for rubber, paint, and plastics. Crushed diatomite is usually called "diatomaceous earth".

Diatoms are members of a large, diverse group of algae that drift freely in the waters of oceans and lakes. A few types of diatoms live on the bottom of these water bodies and in soils. Most diatoms are microscopic, but a few species are up to two millimetres in length. As a group, diatoms are unique because they are single-celled organisms that produce an external cell wall composed of silica, called a frustule. These frustules are very thin and have a delicate structure. (H.M. King).

Dr King further notes that when diatoms die, their siliceous frustules sink. If the associated sediment is composed of over 30% diatom frustules by weight, it would be called a "diatom ooze" or a "siliceous ooze." These are the sediments that are lithified into the rock known as diatomite.



*Figure 3: Images of white diatomite (first frame), and in the second frame diatomaceous earth that is crushed diatomite. (Images from geology.com)*

According to the U.S. Geological Survey (USGS), the production of diatomite in the USA in 2022 was estimated to be 1.1 million tons. Approximately 55% of the diatomite is used in filtration products, while the remaining 45% is used in absorbents, fillers lightweight aggregates and other applications. Less than 1% is used for specialized pharmaceutical and biomedical purposes. The amount of domestically produced diatomite sold or used by USA producers in 2022 was 10% higher than that in 2021. The United States remained the leading global producer and consumer of diatomite. Filtration (including the purification of beer, liquors, and wine and the cleansing of greases and oils) continued to be the leading end use for diatomite. An important application for diatomite is the removal of microbial contaminants, such as bacteria, protozoa, and viruses in public water systems. Domestically, diatomite used in the production of cement was the second-ranked use. Other applications for diatomite include filtration of human blood plasma, pharmaceutical processing, and use as a nontoxic insecticide (Crangle, RD [(703) 648-6410, rcrangle@usgs.gov]).

## 2. PROJECT PROPOSAL

The Applicant applies for a prospecting right (PR) for kieselguhr over 16 162.1945 ha of the properties listed in Table 1. The following table lists the GPS coordinates of the proposed prospecting area as shown on the maps attached as Appendix A, B and D respectively.

Table 3: GPS coordinates of the proposed prospecting footprint.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	27°13'31.18"	22°59'27.07"	-27.225327°	22.990852°
B	27°14'43.45"	22°59'57.15"	-27.245403°	22.999209°
C	27°16'43.26"	22°56'51.27"	-27.278683°	22.947575°
D	27°17'46.13"	22°57'37.70"	-27.296147°	22.960471°
E	27°19'16.82"	22°55'30.37"	-27.321338°	22.925102°
F	27°18'33.13"	22°54'44.87"	-27.309202°	22.912464°
G	27°18'18.37"	22°53'40.54"	-27.305103°	22.894594°
H	27°17'48.10"	22°54.07.19"	-27.296695°	22.901997°
J	27°17'15.40"	22°54'57.90"	-27.28761°	22.916082°
K	27°16'42.75"	22°55'18.62"	-27.278541°	22.92184°
L	27°16'42.73"	22°55'07.54"	-27.278537°	22.918762°
M	27°16'16.44"	22°54'56.97"	-27.271234°	22.915825°
N	27°15'59.34"	22°55'46.17"	-27.266483°	22.929491°
P	27°15'40.10"	22°55'46.44"	-27.261138°	22.929568°
Q	28°25'57.52"	22°45'55.49"	-28.432645°	22.765414°
R	28°26'43.77"	22°49'07.10"	-28.445493°	22.818639°
S	28°27'56.46"	22°51'14.80"	-28.465682°	22.854112°
T	28°28'56.73"	22°50'27.64"	-28.482424°	22.84101°
U	28°28'43.96"	22°49'42.04"	-28.478879°	22.828344°
V	28°25'38.29"	22°45'02.11"	-28.472303°	22.750587°
W	28°30'09.44"	22°40'02.49"	-28.502623°	22.667358°
X	28°31'04.47"	22°43'45.64"	-28.517907°	22.729344°
Y	28°33'05.42"	22°42'04.99"	-28.551506°	22.701385°
Z	28°32'20.74"	22°38'27.75"	-28.539094°	22.641042°
1A	28°41'11.73"	22°38'12.14"	-28.686593°	22.636705°
1B	28°41'35.15"	22°40'26.40"	-28.693097°	22.673999°
1C	28°44'51.26"	22°40'39.46"	-28.747572°	22.677628°
1D	28°44'47.89"	22°37'32.40"	-28.746637°	22.625668°
1E	28°41'25.86"	22°46'55.75"	-28.690518°	22.782153°
1F	28°41'25.06"	22°49'19.54"	-28.690294°	22.822095°
1G	28°45'47.24"	22°48'34.62"	-28.763123°	22.809618°
1H	28°46'00.53"	22°47'33.77"	-28.766814°	22.792715°
1J	28°43'44.94"	22°46'02.74"	-28.72915°	22.767429°
1K	28°45'45.08"	22°45'46.76"	-28.762523	22.762990°

Also refer to Figure 1 and 2 above for satellite images of the proposed prospecting area in relation to the surrounding landscape.

Should the PR be issued, and the activities be allowed, the proposed project will comprise of six phases that can be divided into non-invasive- and invasive prospecting as presented in the following table.

Table 4: Proposed prospecting activities to be implemented.

PHASE	ACTIVITY	SKILL(S) REQUIRED	TIMEFRAME	OUTCOME
1	<b>Non-Invasive Prospecting</b>  Desktop Geological Study: Literature Survey / Review	Geologist	Month 1-6	Initial geological targeting report supported by historical records and existing data.
2	<b>Non-Invasive Prospecting</b>  Geological Field Mapping	Geologist & Field Crew	Month 6-12	Detailed geological targeting report accompanied by maps & plans of ground truthing of initial geological targeting.
3	<b>Invasive Prospecting</b>  Exploration pits and sampling Phase 1 – Bulk Sampling 50 000 m <sup>3</sup> @ density of 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 12-36	Exploration pit data: lithological logs, geophysical exploration pit surveys, assay results for mineralized intercepts. Modelling of data. Interpretation and 3D modelling of potential deposits. Generation and ranking of mineralized targets.
4	<b>Non-Invasive Prospecting</b>  Geological Feasibility Target Selection Metallurgical Testing and Analysis	Geologist / Laboratory Technicians / Metallurgical Specialists	Month 36-42	Borehole data & RAB data: lithological logs, geophysical down hole surveys, assay results for mineralized intercepts, results for metallurgical testing and analysis.
5	<b>Invasive Prospecting</b>  Exploration pits and sampling Phase 2 Bulk Sampling 50 000 m <sup>3</sup> @ density 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 36-54	Exploration pit data: lithological logs, geophysical exploration pit surveys, assay results for mineralized intercepts. Modelling of data. Interpretation and 3D modelling of potential deposits. Generation and ranking of mineralized targets. Resource estimation work producing a SAMREC Mineral Resource.
6	<b>Non-Invasive Prospecting</b>  Analytical Desktop Pre-Feasibility Study.  Feasibility Study and	Economic Geologist / Mining Engineer / Project Engineer / Consulting Company	Month 54-60	Geological and pre-feasibility reports, maps, and plans.  Risk assessment study to determine if a full feasibility is warranted.

PHASE	ACTIVITY	SKILL(S) REQUIRED	TIMEFRAME	OUTCOME
	Mining Right Application (if applicable).			

**Invasive Prospecting (with bulk sampling)**

1. *Site Commencement/Establishment Phase*

Once the final target areas were identified (during non-invasive prospecting) and invasive prospecting commences (phase 3 & 5), site commencement/establishment will entail discussions with the landowners regarding access to the properties, the clearance of vegetation (where necessary) from the areas to be sampled, the stripping and stockpiling of the topsoil (where applicable), and the introduction of the prospecting equipment as detailed below.

Should this application be successful, and the invasive prospecting commence, the Applicant will engage the relevant landowners of the earmarked properties regarding technical arrangements for the co-existence of the applicable entities on the same land.

Also refer to *Part A(1)(g)(i) Details of the development footprint alternatives considered*, and *Part A(1)(m) Final proposed alternatives*.

◆ **Clearing of Vegetation**

The proposed footprint of a typical drill site will be ±200 m<sup>2</sup> in size, while a bulk sampling site will be between 2 500 m<sup>2</sup> (0.25 ha) and 10 000 m<sup>2</sup> (1 ha) as stated in Table 5. The prospecting contractor will need to remove the vegetation cover from the largest part of the earmarked area to allow the sampling activities. The vegetation cover will only be removed from the exact area to be prospected and immediately prior to commencement, no blanket clearing will be allowed. The plant material that will be removed will be stockpiled with the topsoil (if any) to be returned during the rehabilitation of the area.

Also refer to *Part A(1)(g)(iv)(1)(c) Description of Specific Environmental Features and Infrastructure on the Site - Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover, and Fauna*.



#### ◆ **Topsoil Stripping**

Although kieselguhr usually extends up to surface level, it is proposed that any available topsoil in the earmarked areas will be stripped and stockpiled for the duration of the activities. Topsoil removal will be restricted to the exact footprint of each prospecting site during the invasive phases of the activity. The topsoil will be stockpiled at a designated signposted area to be replaced during the rehabilitation of the area. It will be the responsibility of site management to prevent the mixing of topsoil heaps with overburden/other soil heaps. The complete A-horizon (the top 100 – 200 mm of soil which is generally darker coloured due to high organic matter content) will be removed when present. If it is unclear where the topsoil layer ends the top 300 mm of soil will be stripped. The topsoil berm will measure a maximum of 2 m in height to preserve micro-organisms within the topsoil.

#### ◆ **Access Roads**

Access to the prospecting areas will, as far as possible, follow the existing internal farm roads. The farm roads will be upgraded where necessary to allow the comfortable movement of the prospecting machinery/vehicles. Where needed jeep-tracks will be opened from the main farm road to the specific prospecting sites in agreement with the landowners. These tracks will be temporary and will be rehabilitated once prospecting ceases and if the landowner do not wish the track to remain. The jeep-track route will as far as possible avoid sensitive vegetated areas (refer to Figures 79 - 84), watercourses, and cultivated area and must be approved by the ECO prior to use. Presently the maximum width of a track is expected to be  $\pm 5$  m.

Public roads cross through all the farms presently earmarked for invasive prospecting from where access can be obtained:

- ▶ Bermolli No 583 & Engelsdraai No 221:  
R308/9 between Kolemela Mine and Plaatjesdam
  
- ▶ Witdraai No 204:  
Gravel road between Plaatjesdam and Smits Kraal
  
- ▶ Vaalwater No 84 & Farm No 570 (Zaai Plaats):  
R383 between Swartkoppies and the road joining with the N8 national road.

#### ◆ Establishment of Site Equipment/Infrastructure

The prospecting activities does not require the use of permanent equipment/infrastructure. A central site camp (with an approximate footprint of 0.5 ha) will be established at an area agreed to by each landowner where mobile containers will be used as office space and for storage. Chemical ablutions will be established, and the site camp will be fenced to control access. No bulk storage of fuel (>30 000 l) will be necessary. All chemicals/hydrocarbons will be kept in the storage containers or bunded areas with impermeable surfaces.

Presently, it is proposed that a typical drill site will entail the following:

- ◆ Drill rig,
- ◆ Sample laydown area,
- ◆ Chemical toilet,
- ◆ Refuse bins and bunded area for applicable chemicals.

A typical bulk sampling site will entail the following:

- ◆ Site camp with approximately three container offices, a generator, and a 5 000 l fuel bowser,
- ◆ Earthmoving equipment including a 30 ton excavator, two front-end-loaders (FEL) and a 30 ton tipper truck,
- ◆ Crushing and milling plant to size the samples,
- ◆ Tipper trucks transporting samples,
- ◆ Chemical toilet,
- ◆ Refuse bins and bunded area for applicable chemical storage.

## 2. Operational Phase (Trenching and Sampling Pits)

The targeting of all drilling and/or trenching activities will be dependent on the results obtained during the preceding non-invasive phases of prospecting, namely geological mapping. As such it is currently not possible to include a finalized surface plan showing the intended location, extent, and depth of boreholes/exploration pits to be prospected. However, the remote sensing study by Minrom (refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Geology*) identified target areas with a high kieselguhr potential thereby narrowing the list of farms earmarked for invasive prospecting.

The initial planned invasive exploration activities will consist of exploration drilling, trenches, and pits to appropriate depths to target anomalies and testable material identified during phases 1 & 2 of the non-invasive prospecting. Down the hole geophysical surveying will take

place upon completion of the exploratory trenching and pits along with ground surveys to determine positions of geological materials.

The work will consist of:

- ◆ Trenching and digging of sample pits,
- ◆ Sampling and assaying,
- ◆ Quality assurance and quality control programs,
- ◆ Metallurgical test work (off-site),
- ◆ Rehabilitation of drill and trenching/pit sites, and
- ◆ Recording and integration of data.

The following table describes the bulk sampling activities to be undertaken.

Table 5: Bulk Sampling Activities.

ACTIVITY		DETAILS		
Number of pits/trenches planned		±90		
Dimensions of pits/trenches, per pit/trench	Number of pits/trenches	Length	Breath	Depth
	30	50 m	50 m	5 m
	30	100 m	100 m	5 m
	30	150 m	50 m	5 m
Volume Overburden (Waste)		10 000 m <sup>3</sup>		
Volume Ore		100 000 m <sup>3</sup>		
Density Overburden		1.68		
Density Ore		2.25		
Phase(s) when bulk sampling will be required		Phases 3 & 5		
Timeframe(s)		Months 12 - 54		

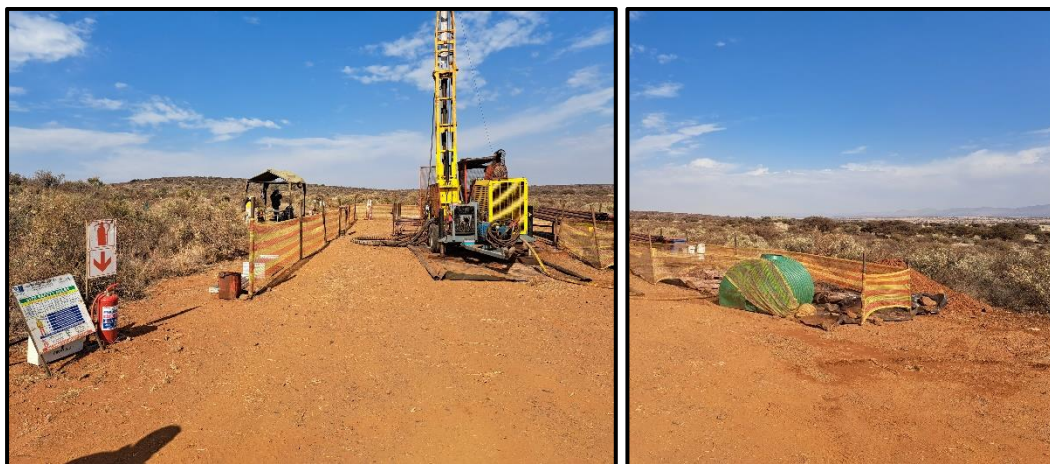


Figure 4: Example of a typical drill site.

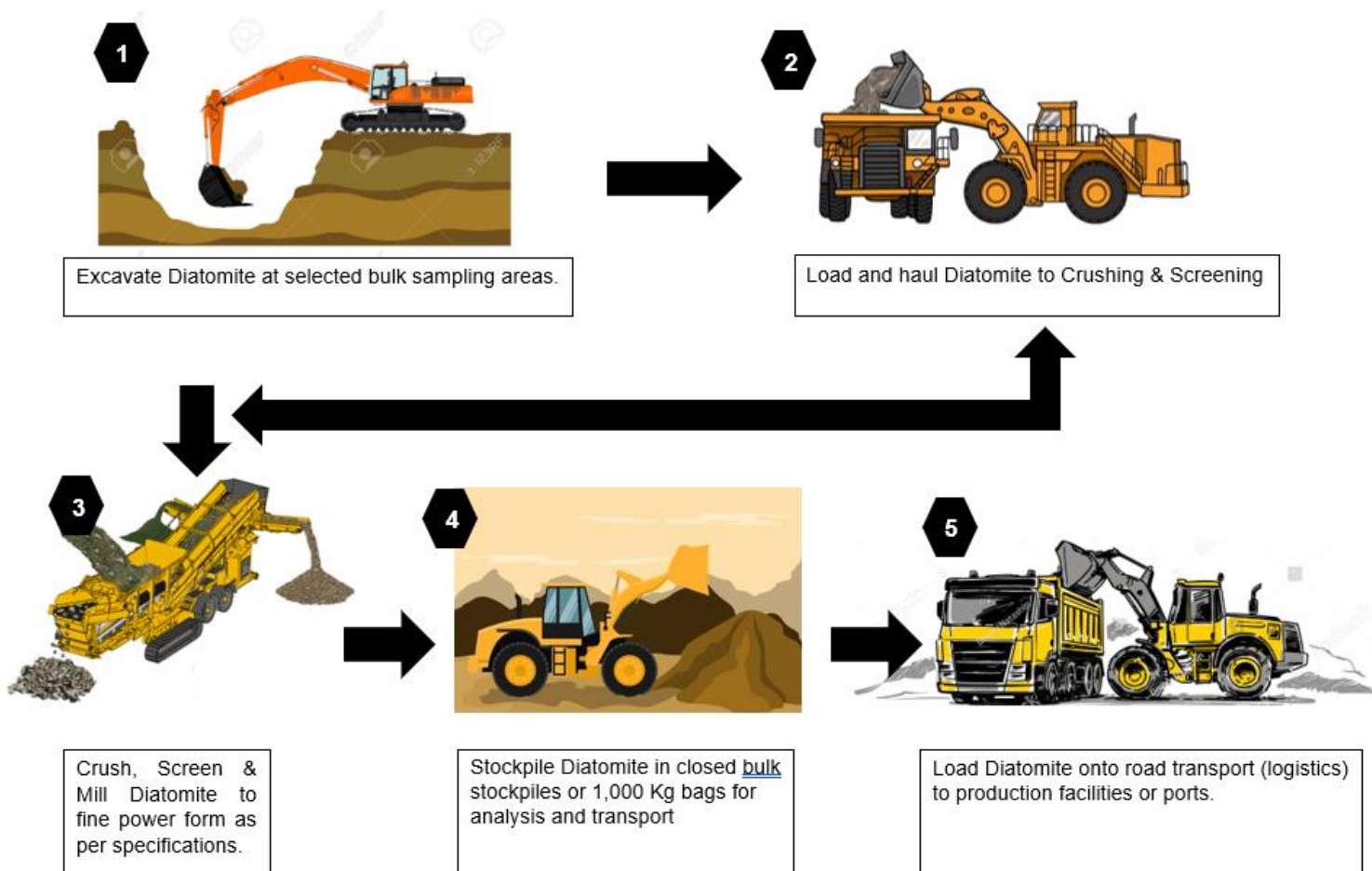


Figure 5: Schematic diatomite bulk sampling flow diagram.

◆ **Assaying**

Rock chip / soil samples will be sent to a laboratory of the Applicant’s choice (off-site) to be crushed, split, pulverized, and assayed. Samples from the drill cores will be split using a core cutter before it is sent to the laboratory for analysis.

◆ **Metallurgical Test Work**

Metallurgical test work will start during phase 4 of the prospecting activities. These tests will be done off-site by and in consultation with a preferred and accredited Laboratory of the Applicant's choice. No metallurgical work will be done at the prospecting areas and/or site camp.

◆ **Electricity Need**

The prospecting activities does not require electricity as all equipment will be powered with generators.

◆ **Water Use**

The drilling operation does not require water while the bulk sampling activities will necessitate  $\pm 10\,000$  l/day. Water will be used for dust suppression at the prospecting sites and access roads. Potable water will daily be transported to site by the employees, while the process water will be bought from registered local sources (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s).

◆ **Waste Handling**

Due to the nature of the project, the small scale of each prospecting site, and the fact that maintenance work will be done off-site, very little general waste will be generated as a direct result of the prospecting activities. All the general waste generated at the prospecting sites will be transported to the site camp where it will be contained in refuse bins. Once full the refuse bins will be emptied, and the waste will be disposed of at a registered landfill site in the vicinity of the project. Proof of safe disposal will be filed for auditing purposes.

Hazardous waste will mainly be the result of accidental spillages or breakdowns. Such contaminated areas will be cleaned up immediately (within two hours of the occurrence) and the contaminated soil will be contained in designated hazardous waste containers to be removed daily to the hazardous waste storage area at the site camp. A registered contractor will be appointed to collect and dispose of the hazardous waste at a registered hazardous waste handling facility and the site will file the proof of safe disposal for auditing purposes.

The chemical toilets will weekly be serviced by an appropriately qualified sewerage handling contractor who will furnish the site with proof of safe disposal.

◆ **Traffic Requirements**

The prospecting operations will daily be visited by approximately ten (10) vehicles. The bulk sampling activities will require approximately four 30-ton flatbed trucks to transport the material from the farm to the port, Johannesburg, or various other production facilities.

◆ **Servicing and Maintenance**

No workshop, wash bay or service areas will be established at the prospecting sites and/or site camp. When needed maintenance/servicing of the equipment will be performed at the contractor's off-site workshop.

3. *Decommissioning phase*

Rehabilitation will include activities that can be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of prospected areas, and the management of invasive plant species and/or erosion. In the long term, rehabilitation will involve the reinstatement of the remaining disturbed areas (not yet reinstated), prior to the submission of a closure application to the Department of Mineral Resources and Energy (DMRE). The PR holder will further be responsible for the seeding of all rehabilitated areas should vegetation not establish through succession within the first six months.

The following rehabilitation actions are proposed:

- ◆ Rehabilitation of all the disturbed surface areas shall entail landscaping, levelling, sloping, top dressing, land preparation, seeding (if required), and invasive plant clearing.
- ◆ All unwanted infrastructures, equipment, and other items used during the prospecting period will be removed from the site in accordance with section 44 of the MPRDA, 2002.
- ◆ Waste material of any description, including receptacles, scrap, rubble, and tyres, will be removed entirely from the prospecting area, and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- ◆ The rehabilitation area will be cleared of invader plant species. Priority will be given to species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto).

Once the full prospecting area was rehabilitated the PR holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or*

completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report”. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998.

### e) Policy and Legislative Context

Table 6: Applicable legislation and guidelines used to compile the report.

<b>APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT</b>  (A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process);	<b>REFERENCE WHERE APPLIED</b>  (i.e. Where in this document has it been explained how the development complies with and responds to the legislation and policy context)	<b>HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT</b>  (E.g. in terms of the National Water Act: Water use license has/has not been applied for).
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Part A(1)(g)(iv)(1)(b) Description of the current land uses.  Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Management of Invasive Plant Species.	Assessment of biophysical environment and current land use.  The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Final IDP 2023-24 John Taolo Gaetsewe District Municipality.  ZF Mgcawu District Municipality Final Integrated Development Plan 2021/2022.  IDP 2022-2027 Pixley Ka Seme District Municipality.	Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Socio-economic Environment.	The description of the study area’s socio-economic status is in accordance with that IDP’s of the various municipal areas.
Integrated Environmental Management Guideline: Guideline on Need and Desirability (2017).	Part A(1)(f) Need and desirability of the proposed activities.	The need and desirability of the project was assessed in accordance with these guidelines.
Mine Health and Safety Act, 1996 (Act No 29 of 1996) read together with applicable amendments and regulations thereto including relevant OHSA regulations.	Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Management of Health and Safety Risks.	The mitigation measures proposed for the site includes specifications of the MHSA, 1996.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT
<p>Mineral and Petroleum Resources Development Act, 2002, (Act No. 28 of 2002) read together with applicable amendments and regulations thereto.</p>	<p>Part A(1)(d) Description of the scope of the proposed overall activity.</p>	<p>Application for a prospecting right with bulk sampling. Reference number: NC30/5/1/1/2/13826PR</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended):</p> <ul style="list-style-type: none"> <li>◆ GNR 983 of 2014 (as amended) Activity 20</li> <li>◆ GNR 984 of 2014 (as amended) Activity 19</li> </ul>	<p>Part A1(d)(i) Listing and specified activities.</p>	<p>Application for environmental authorisation. Reference number: NC30/5/1/1/2/13826PR.</p>
<p>National Environmental Management: Air Quality Control Act, 39 (Act No 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827</p>	<p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Air Quality and Noise Ambiance.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Air Quality and Noise Ambiance.</p>	<p>The mitigation measures proposed for the site consider the NEM:AQA, 2004 and the National Dust Control Regulations.</p>
<p>National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) read together with applicable amendments and regulations thereto.</p>	<p>Part A1(g)(iv)(1)(a) Type of environment affected by the proposed activity - Biological Environment</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Terrestrial Biodiversity, Conservation Areas, Groundcover, and Fauna.</p>	<p>The description of the biodiversity aspects considered the requirements of the NEM:BA, 2004.</p> <p>The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.</p>
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) read together with applicable amendments and regulations thereto.</p>	<p>Part A(1)(d)(ii) Description of the activities to be undertaken: 2.2.4 Waste Handling</p>	<p>The mitigation measures proposed for the site consider the NEM:WA, 2008.</p>



APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT
NEM:WA, 2008: National norms and standards for the storage of waste (GN 9260).	Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Waste Management.	
National Heritage Resources Act No 25 of 1999.	<p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Human Environment.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Cultural and Heritage Environment.</p>	<p>The heritage, cultural, and palaeontological aspects of the project area considered the requirements of the NHRA, 1999.</p> <p>The mitigation measures proposed for the site includes specifications of the NHRA, 1999.</p>
National Road Traffic Act, 1996 (Act No. 93 of 1996)	<p>Part A(1)(d)(ii) Description of the activities to be undertaken – Access Roads.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied on the level of risk – Existing Infrastructure.</p>	The mitigation measures proposed for the project consider the NRTA, 1996.
<p>National Water Act, 1998 (Act No. 36 of 1998) read together with applicable amendments and regulations thereto.</p> <p>Department of Water Affairs and Forestry Best Practice Guideline Series (2007).</p>	<p>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Hydrology.</p> <p>Part B(1)(d)(viii) Has a water use licence been applied for?</p>	Prospecting within proximity to watercourses may require a water use authorisation in terms of Section 39 of the NWA, 1998 for water uses as defined in section 21 of the Act. However, the proposed activities are not currently expected to need authorisation in terms of the NWA as sampling sites will remain >100 m from active watercourses.
Northern Cape Nature Conservation Act, 2009 (Act No 9 of 2009) read together with applicable amendments and regulations thereto.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity - Biological Environment.	Assessment of biophysical environment.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE POLICY AND LEGISLATIVE CONTEXT
Public Participation Guideline in terms of the NEMA EIA Regulations.	Part A(1)(g)(ii) Details of the Public Participation Process Followed	Public participation was conducted in accordance with the public participation guidelines.
The South African Constitution.	Implied throughout the document.	To be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases.

**f) Need and desirability of the proposed activities.**

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

As mentioned earlier, kieselguhr is a highly sought after mineral in the absorbent, cement, filtration, medical, and other industries. Other uses of kieselguhr include animal feed applications, natural de-wormer for animals, insect, and ant killer. Kieselguhr also has wide application for an anti-caking agent in grain storage as well as mixed feeds.

◆ **Filter Media**

Kieselguhr is used at drinking water treatment plants, swimming pools, breweries, wineries, chemical plants, and where juices and syrups are made. These fluids are forced through a layer of wet diatomaceous earth, and suspended particles are trapped because it cannot fit through the pores.

◆ **Cement Additive**

Kieselguhr is often used as an additive in the manufacture of portland cement. High-quality kieselguhr contains over 80% silica, and it is added to the cement-making process to boost the silica content of the product.

◆ **Filler**

Diatomaceous earth is used as a lightweight, inert filler in some manufactured products. It is added to paint as a whitening agent and extender. It is added to plastics as a lightweight filler. It is used as a filler and anti-stick agent in asphalt shingles and to improve adhesion resistance in many rubber products.

◆ **Absorbent**

If dry diatomaceous earth is placed on a liquid spill, it can absorb and hold an amount of liquid equivalent to its own weight. This absorption facilitates containment, cleanup, and removal. These same properties make diatomaceous earth able to absorb skin oils when used in cosmetics and facial masks. Diatomaceous earth is an absorbent ingredient of some kitty litters. It is also used as a soil treatment to absorb and hold water.

◆ **Mild Abrasive**

Diatomaceous earth is used as a mild abrasive in some toothpastes, facial scrubs, and metal polishes. Its silica particles are small, friable, have a high surface area, and are angular in shape. These are properties that help it perform well as a mild abrasive.

◆ **Gardening**

Diatomaceous earth is used as a growing medium in hydroponic gardens. It is inert, holds water, and has a porosity that allows the soil to breathe. To help grain and other seeds from sticking together and remain dry, they are dusted with diatomaceous earth.

◆ **Insect and Slug Control**

Diatomaceous earth is an abrasive and an absorbent. These properties make it effective in controlling slugs and certain insects.

◆ **Flea and Tick Control**

Dogs and cats can be treated with food-grade diatomaceous earth to control fleas and ticks.

Within the Griqualand West area, kieselguhr appear to overlay either lava of the Ongeluk Sub-Group, or Dwyka shale (Base Kalahari Formation) along ancient water courses and paleo-marshes. This prospecting right application intends to identify feasible kieselguhr sources in the Northern Cape that can economically be exploited and contribute to the economy of the region.

The proposed labour component of the proposed project will be ±15 to 20 labourers that will be hired from the local communities.

The need and desirability of the proposed operation was assessed in terms of the National Department of Environmental Affairs' Guideline on Need and Desirability (first version published in terms of section 24J of the NEMA in 2014, and second version in 2017). The following table shows the questions that were considered in this regard.

Table 7: Need and desirability determination.

1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES		
How will this development impact on the ecological integrity of the area?		
Question	Response	Level of Desirability
How were ecological integrity considerations taken into account?	<p>The DFFE Screening Report indicates various ESA and CBA's over the earmarked properties. Various watercourses cross the properties and pans occur on especially Vaalwater No 84. The farms Bermolli No 583 and Engelsdraai No 221 are within FEPA's. The vegetation of the study area include at least seven types all of which have a conservation status of Least Threatened. CDH (on behalf of SIOC) informed that Bermolli No 583 (Portion 4 and 5) forms part of the proposed Kolomela Biodiversity Off-Set Area to be declared a nature reserve once the required administrative processes have been completed.</p> <p>Kindly refer to the following sections where the ecological importance and potential impact of the proposed project were discussed:</p> <ul style="list-style-type: none"> <li>◆ Part A(1)(d)(ii) Description of the activities to be undertaken;</li> <li>◆ Part A(1)(g)(i) Details of the development footprint alternatives considered;</li> <li>◆ Part A(1)(g)(iv) The environmental attributes associated with the development footprint alternatives;</li> <li>◆ Part (A)(1)(g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site.</li> <li>◆ Part A(1)(h) 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;</li> <li>◆ Part A(1)(k) Environmental impact statement.</li> </ul>	Desirable should the management and mitigation measures be implemented.
How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity?		
How were a risk-averse and cautious approach applied in terms of ecological impacts?		
How will this development pollute and/or degrade the biophysical environment?	<p>Kindly refer to the following discussions:</p> <ul style="list-style-type: none"> <li>◆ Part A(1)(d)(ii) Description of the activities to be undertaken – Invasive Prospecting (with bulk sampling).</li> <li>◆ Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk.</li> </ul>	Highly desirable should the management and mitigation
What waste will be generated by this development?		



**1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES**

How will this development impact on the ecological integrity of the area?

Question	Response	Level of Desirability
	<p>Due to the nature of the project, very little general waste, as a direct result of the prospecting activities, is expected. The general waste will mainly consist of paper, plastic, glass, metal and potentially tin that will be contained in sealable refuse bins at the site camp from where it will be removed to a registered landfill site when the capacity of the containers is reached.</p> <p>Likewise, very little generation of hazardous waste is expected. Hazardous waste will mainly be the result of accidental spillages/breakdowns. The hazardous waste to be generated will be kept in designated hazardous waste containers to be removed from the site by a registered hazardous waste handling contractor.</p> <p>Chemical ablution facilities will be available to the employees that will be serviced at least weekly by a registered sewerage handling contractor.</p> <p>No waste will be disposed of or treated on the farms.</p>	<p>measures be implemented.</p>
<p>How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?</p>	<p>Kindly refer to the following discussions:</p> <ul style="list-style-type: none"> <li>◆ <i>Part (A)(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Cultural and Heritage Environment.</i></li> <li>◆ <i>Part (A)(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Cultural and Heritage Environment.</i></li> <li>◆ <i>Part (A)(1)(u)(i)(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.</i></li> </ul>	<p>Desirable should the management and mitigation measures be implemented.</p>
<p>How will this development use and/or impact on non-renewable natural resources?</p>	<p>The Applicant proposes to collect ±100 000 m<sup>3</sup> of kieselguhr samples across the application area. Considering this, the potential impact of the proposed activity on non-renewable natural resources is deemed negligible.</p>	<p>Highly Desirable</p>



**1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES**

How will this development impact on the ecological integrity of the area?

Question	Response	Level of Desirability
How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?	The proposed activity will use generators to power the site infrastructure and obtain water from legal sources. The water will mainly be needed for dust suppression purposes and a maximum use of 10 000 l/day is anticipated. The impact on renewable natural resources will therefore be low.	Highly Desirable
How were a risk-averse and cautious approach applied in terms of ecological impacts?	The proposed activity will be managed in accordance with the agricultural practices of the farms and/or other land uses. As mentioned in <i>Part A(1)(u)(i)(1) Impact on the socio-economic condition of any directly affected person</i> , the activity may have a temporary impact on the land use, visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. However, should the management and mitigation measures proposed in this report be implemented the potential impacts can be minimised and upon rehabilitation the areas will revert to agricultural use. The project will therefore not have an impact on the people's environmental right.	Highly Desirable
How will the ecological impacts resulting from this development impact on people's environmental right?		
Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts.	<p>The Applicant will engage the landowners of the earmarked properties regarding co-existence agreements during the planning stage prior to the commencement of invasive prospecting. As mentioned earlier, the potential impacts associated with this project can be managed/minimised through the implementation of the proposed management and mitigation measures.</p> <p>Further to this, the landowners will be compensated for the use of their properties, and the Applicant intends to employ between 15 and 20 residents from the community.</p>	Desirable should the management and mitigation measures be implemented.
Based on all the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?	<p>Kindly refer to the following discussions:</p> <ul style="list-style-type: none"> <li>◆ <i>Part (A)(1)(g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site.</i></li> </ul>	



**1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES**

How will this development impact on the ecological integrity of the area?

Question	Response	Level of Desirability
<p>Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified, resulted in the selection of the “best practicable environmental option” in terms of ecological considerations</p>	<ul style="list-style-type: none"> <li>◆ Part (A)(1)(g)(i) Details of the development footprint alternatives considered.</li> <li>◆ Part (A)(1)(g)(iv) The Environmental attributes associated with the alternatives.</li> <li>◆ Part (A)(1)(g)(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.</li> <li>◆ Part (A)(1)(h) 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.</li> <li>◆ Part (A)(1)(k)(i) Summary of the key findings of the environmental impact assessment.</li> </ul>	

**2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT**

What is the socio-economic context of the area?

Question	Response	Level of Desirability
<p>What is the socio-economic context of the area?</p>	<p>Please refer to Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity - Socio-economic Environment.</p>	<p>Desirable</p>
<p>Considering the socio-economic context, what will the socio-economic impacts be of the development, and specifically also on the socio-economic objectives of the area?</p>	<p>The proposed activity will be managed in accordance with the agricultural practices of the farms and/or other land uses. As mentioned in Part A(1)(t)(i)(1) Impact on the socio-economic condition of any directly affected person, the activity may temporarily have an impact on the land use, visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. However, should the management and mitigation measures proposed in this report be implemented the potential impacts can be minimised and after closure the area will return to agricultural use. The project will therefore not have an impact on the people’s environmental right.</p>	<p>should the management and mitigation measures be implemented.</p>



2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
<u>What is the socio-economic context of the area?</u>		
Question	Response	Level of Desirability
	<p>The Applicant entered a partnership with an international company (provided that the PR application is approved) for the metallurgical testing of the kieselguhr samples and should the results be favourable the project may lead to a mining right application that could establish South Africa in the international kieselguhr market.</p> <p>The project will further contribute directly to the greater society through the employment of 15 to 20 residents as well as compensating the landowners for the use of their land.</p>	
How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	<p>If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, the prospecting activities will not affect the physical, psychological, cultural, or social needs of the community in a permanent negative manner, nor will it impact negatively on the socio-economic status of the area.</p> <p>Also refer to the discussion under <i>Part A(1)(g)(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.</i></p>	
Will the development result in equitable impact distribution, in the short- and long-term?	The Applicant intends to employ 15 to 20 people from the local community for the duration of the prospecting right ( $\pm 5$ years). This is of crucial importance in municipal areas with high unemployment rates. The landowners will also receive compensation for the use of their land.	Highly Desirable
In terms of location, describe how the placement of the proposed development will contribute to the area.	The project was initiated to identify the kieselguhr in the earmarked areas. Due to the nature of invasive prospecting activities, the location of drill holes and sampling sites can to a certain extent be moved to avoid structures and/or sensitive areas where possible. The landowners will also be compensated for the use of their land.	Highly Desirable
How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	The mitigation measures proposed in this report were compiled in consultation with the specialists to reduce the potential impact that the proposed activity may have on the receiving environment. Once approved, the	Desirable





2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	Response	Level of Desirability
	<p>management outcomes are legally binding to be implemented by site management for the duration of the site establishment-, operational- and decommissioning phases.</p> <p>The Applicant will also engage the landowners of the farms earmarked for invasive prospecting regarding technical arrangements for the co-existence of the applicable entities on the same land.</p>	
<p>How will the socio-economic impacts resulting from this development impact on people’s environmental right?</p> <p>Considering the linkages and dependencies between human wellbeing, livelihoods, and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development’s socio-economic impacts will result in ecological impacts?</p>	<p>The proposed activity will be managed in accordance with the agricultural practices of the farms and/or other land uses. As mentioned in <i>Part A(1)(u)(i)(1) Impact on the socio-economic condition of any directly affected person</i>, the activity may have a temporary impact on the land use, visual characteristics of the surrounding environment, and may potentially affect air quality and possibly the noise ambiance of the study area. However, should the management and mitigation measures proposed in this report be implemented the potential impacts can be minimised and the project will not have an impact on the people’s environmental right.</p>	<p>Desirable should the management and mitigation measures be implemented.</p>
<p>What measures were taken to pursue the selection of the “best practicable environmental option” in terms of socio-economic considerations?</p> <p>What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly</p>	<p>The findings of the specialists were assessed, and their recommendations were incorporated into this report to minimise the impact of the activity on biophysical/culturally sensitive areas. These recommendations were also incorporated into the EMPR that will, once approved, become a legally binding document.</p> <p>Also refer to the following discussions:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(i) Details of the development footprint alternatives considered.</i></li> <li>◆ <i>Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment.</i></li> </ul>	<p>Desirable should the management and mitigation measures be implemented.</p>



2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
<u>What is the socio-economic context of the area?</u>		
Question	Response	Level of Desirability
discriminate against any person, particularly vulnerable and disadvantaged persons?		
<p>What measures were taken to pursue equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</p> <p>What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?</p>	<p>Prospecting will operate in accordance with, amongst others, the following:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983 – to ensure agriculture related compliance;</li> <li>◆ Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation;</li> <li>◆ Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety;</li> <li>◆ MPRDA, 2002 (as amended) – to ensure prospecting related compliance;</li> <li>◆ NEM:AQA, 2004 – to ensure air quality related compliance;</li> <li>◆ NEM:BA, 2004 – to ensure biodiversity related compliance;</li> <li>◆ NEM:WA, 2008 – to ensure waste related compliance;</li> <li>◆ NEMA, 1998 (as amended) – to ensure environmental related compliance;</li> </ul> <p>Should the proposed application be approved, the prospecting areas will also be subject to compliance with the above listed.</p>	Highly Desirable
Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community that is consistent with the priority needs of the local area.	The Northern Cape is well known for its mineral riches. Prospecting for kieselguhr will contribute to the mineral wealth of the province and could assist landowners to extend the land use of their properties.	Highly Desirable
What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be	The activities must operate in accordance with the specifications of the Mine Health and Safety Act, 1996 (MHSA). Site management will have daily discussions with the staff regarding the work to be performed and the environment in which the work will take place. Grievances/concerns can be lodged during the daily site meetings. The MHSA	Highly Desirable



2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
<u>What is the socio-economic context of the area?</u>		
Question	Response	Level of Desirability
harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected.	further requires the submission of quarterly occupational hygiene reports that record site specific occupational hygiene exposure assessments.	
Describe how the development will impact on job creation in terms of, amongst other aspects?	The Applicant intends to appoint 15 - 20 employees should the project advance to the invasive prospecting phases. These employees will be sourced from the local community.	Highly Desirable
What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage.	The proposed activity will operate under a valid environmental authorisation and prospecting right to be issued by the DMRE-NC. Compliance of the site with the approved EMPR and EA conditions will be reported on as per departmental specification. Considering this, the proposed activity will take place in an environmentally sustainable manner with the least possible impact on the receiving environment.	Highly Desirable
Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left.	The mitigation measures proposed in this document are realistic and can be implemented (when needed). Should the prospected areas be rehabilitated successfully, no long-term management burden will be left behind.	Highly Desirable
What measures were taken to ensure that the costs of remedying pollution, environmental degradation, and consequent adverse health effects and of preventing, controlling or minimising further pollution	In terms of Section 41 of the MPRDA, 2002 a prospecting right holder must submit a financial provision to the DMRE that is sufficient to rehabilitate or manage the negative environmental impacts related to the activity. Upon approval of this application, the Applicant will lodge a financial guarantee with the DMRE that will be deemed sufficient to cover the financial provision amount needed to rehabilitate the affected areas. The environmental	Highly Desirable



2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
<u>What is the socio-economic context of the area?</u>		
Question	Response	Level of Desirability
environmental damage or adverse health effects will be paid for by those responsible for harming the environment.	liability of the operation will annually be reviewed and if a shortfall is indicated, the guarantee will be accordingly adjusted.	
<p>Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified, resulted in the selection of the best practicable environmental option in terms of socio-economic considerations</p> <p>Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and other planned developments in the area.</p>	<p>Kindly refer to the following sections of this report:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(i) Details of the development footprint alternatives considered.</i></li> <li>◆ <i>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – Socio-Economic Environment.</i></li> <li>◆ <i>Part A(1)(g)(vii) The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected.</i></li> <li>◆ <i>Part A(1)(u)(i)(1) Impact on the socio-economic conditions of any directly affected person.</i></li> </ul>	Desirable should the management and mitigation measures be implemented.

**g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site.**

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

Also refer to *Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment.*

**i) Details of the development footprint alternatives considered.**

With reference to the site plan provided as Appendix 4 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.

During the EIA phase the following alternatives were assessed upon receipt of the site-specific information, comments received from the public, and the results of the specialist studies.

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

The Applicant applied for a prospecting footprint of 15 602.0765 ha over the properties listed in Table 1 (excluding Farm No 570) and presented in Appendix A1 & A2. During the EIA process the need to incorporate Farm No 570 (Zaai Plaats) in this application arose and the farm is therefore discussed as part of this DEIAR & EMPR. An amended EA Application Form will also be submitted with the FEIAR & EMPR to the DMRE to incorporate Farm No 570 (Zaai Plaats) in the application footprint (16 162.1945 ha with Farm No 570 (Zaai Plaats)).

Applicants can only apply for prospecting rights within areas where such rights are not yet held by other companies/applicants. Furthermore, the prospecting activities are dependent upon the presence of the desired minerals which are again dependent upon geological formations. As the intention of the proposed prospecting operations is to determine the presence of economically viable kieselguhr deposits in the Northern Cape, an area known/expected to contain these resources needs to be selected.

As discussed in *Part A(1)(g)(iv)(1)(c) Description of Specific Environmental Features and Infrastructure on the Site – Site Specific Geology* Minrom was contracted to evaluate the mineralisation potential and exploration targets for kieselguhr on the earmarked properties. The Minrom rankings suggest that the following farms hold the greatest kieselguhr potential (see Figure 69 - 74).

- ◆ Portion 5 of Bermolli No 583;
- ◆ Remaining Extent of Engelsdraai No 221;
- ◆ Portion 1 of Witdraai No 204;
- ◆ Portion 1 and Remaining Extent of Vaalwater No 84; and
- ◆ Farm No 570 (Zaai Plaats).

1. Current Project Proposal

Considering the abovementioned, the project proposal regarding the properties on which invasive prospecting will most likely continue (should the application be approved) was amended to target the farms with the greatest mineral potential.

Devon No 277 will not be prospected as it will be omitted from the application footprint.

If mineralisation is confirmed (during non-invasive prospecting) on the other earmarked farms, the study areas will be geologically mapped in detail to determine the extents of the mineralisation and provide a basis for additional exploration to quantify the mineralisation. Invasive prospecting will then only target the farms/areas with promising results.

The following table lists the farms that were applied for and specify whether invasive/non-invasive prospecting is proposed.

Table 8: Summary of the properties on which invasive/non-invasive prospecting is proposed.

PROPERTY DESCRIPTION	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING
Portion 1 and Remaining Extent of Devon No 277	No	No
Portion 1 and Remaining Extent of Botha No 313	Yes	No
Portion 4 of Bermolli No 583	Yes	No

PROPERTY DESCRIPTION	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING
Portion 5 of Bermolli No 583	Yes	Yes <i>(Provided that the farm is not promulgated as nature reserve prior to the granting of the PR)</i>
Remaining Extent of Engelsdraai No 221	Yes	Yes
Portion 1 of Engelsdraai No 221	Yes	No
Portion 1 of Witdraai No 204	Yes	Yes
Remaining Extent of Witdraai No 204	Yes	No
Portion 1 and Remaining Extent of Vaalwater No 84	Yes	Yes
Portion 2 of Vaalwater No 84	Yes	No
Farm No 570 (Zaai Plaats)	Yes	Yes

**b) Type of activity to be undertaken**

The proposed activity entails prospecting with bulk sampling. Presently it is proposed that prospecting will be conducted using a combination of non-invasive and invasive activities. The invasive prospecting will include drilling and trenching that will entail the collection of large samples ( $\pm 50\,000\text{ m}^3$  per phase) that constitutes bulk sampling. The proposed bulk sampling methods have been developed over many years by the mining industry and are the preferred method for resource estimation. These methods cannot easily be replaced by other methods.

The only alternative would be to prospect the area without bulk sampling. However, the Applicant entered a partnership with an international firm (provided that the PR application is successful) regarding the testing of the kieselguhr samples for metallurgical and production compatibility with their production plants. The company requires bulk samples of at least 20 000 ton (per sample) to facilitate the metallurgical and production compatibility testing. Should bulk sampling be excluded from the project proposal the prospect of a possible international market for South African kieselguhr (should a mining right be considered) will remain unexploited. Further to

this, kieselguhr has varying qualities and thus the samples must be distributed to a wide range of prospective clients from cement manufactures, paint manufacturers, filtration specialists etc. that requires the collection of large samples.

1. Current Project Proposal

Considering the abovementioned, the project proposal is to prospect the study area with bulk sampling.

c) Design and layout of the activity

The invasive prospecting plan (showing drilling, and pit sampling locations) will be determined based on the outcome of phases 1, 2, 4, and 6 (Table 4). Thus far the remote sensing data and initial freshwater- and terrestrial sensitivity results (refer to *Part A(1)(g)(iv)(1)(c) Description of the specific environmental features and infrastructure on the site – Site Specific Geology, Site Specific Hydrology and Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna*) are the main factors steering the design/layout proposal regarding invasive prospecting. The following figures compare the mineral potential of the earmarked areas with the initial freshwater- and terrestrial sensitivity ratings.

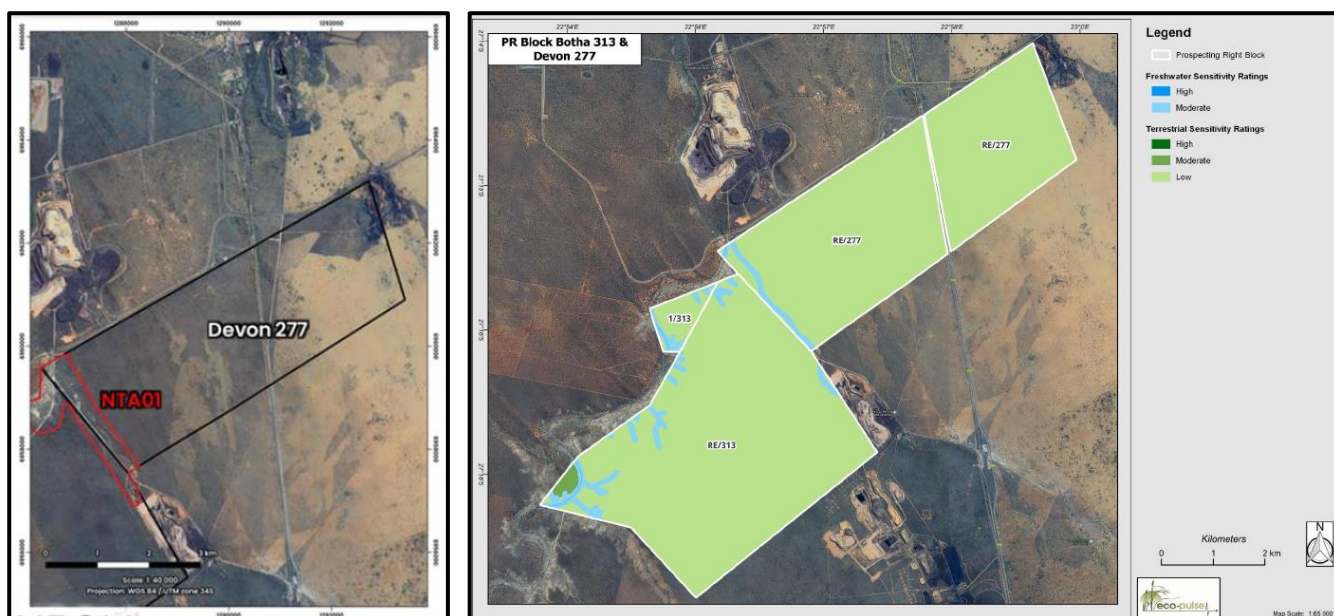


Figure 6: Comparison between the identified target area (red polygon in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Devon No 277.



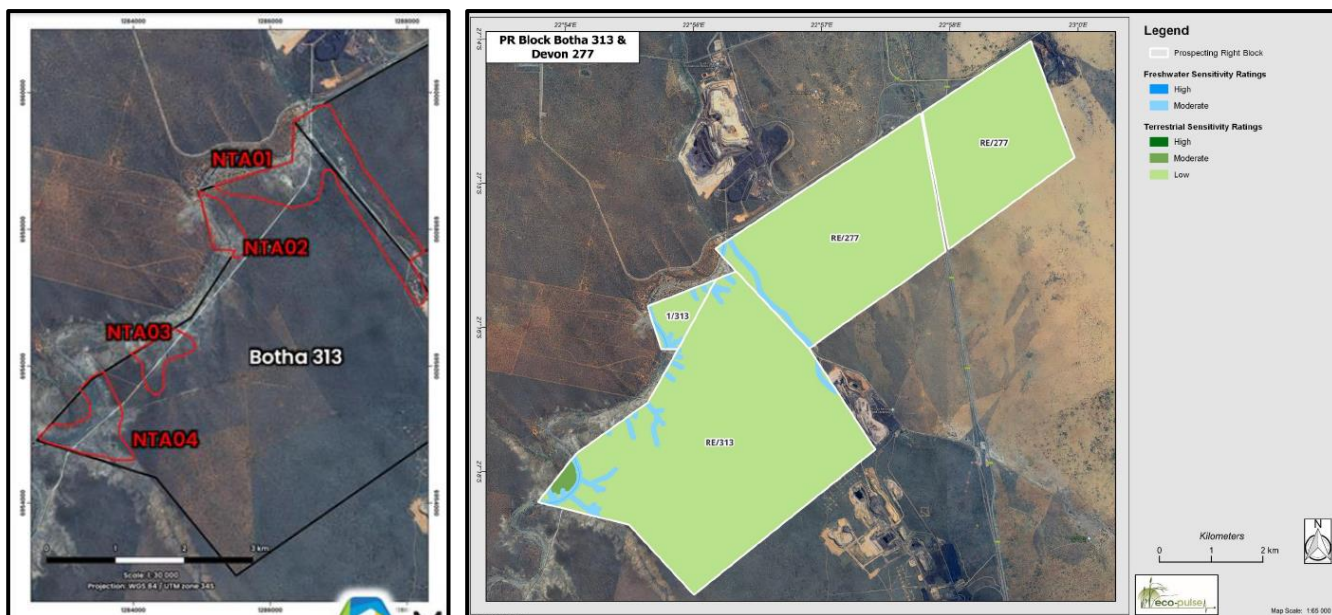


Figure 7: Comparison between the identified target area (red polygons in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Botha No 313.

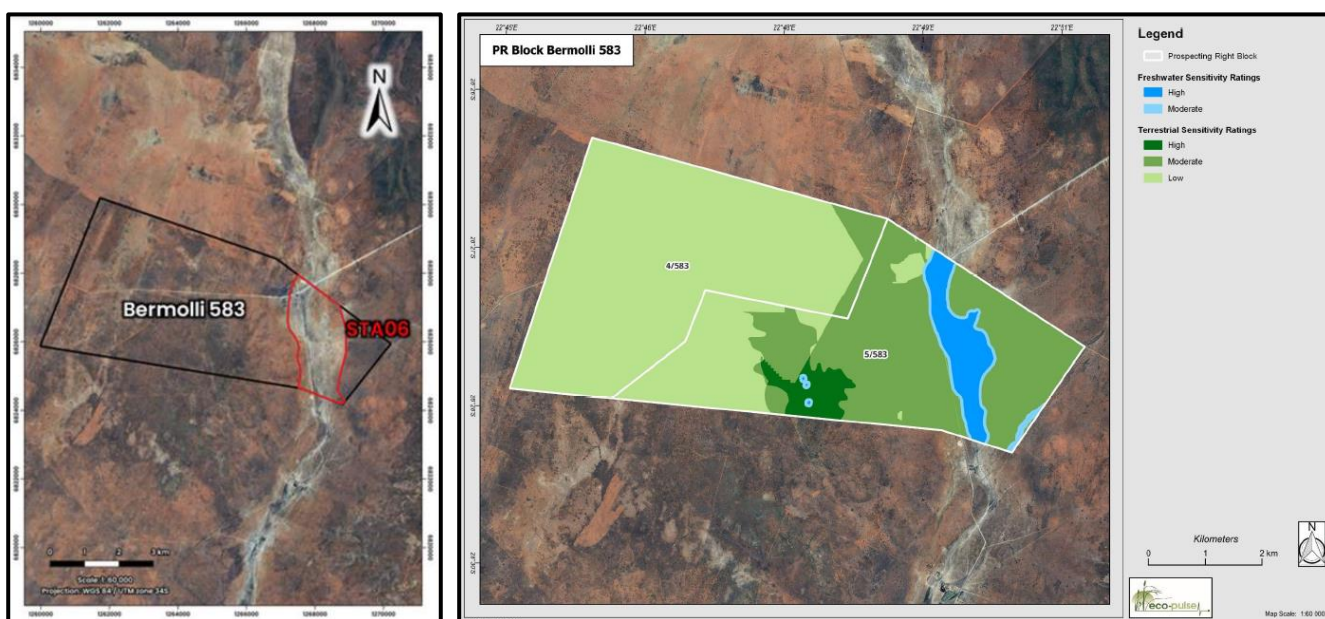


Figure 8: Comparison between the identified target area (red polygon in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Bermolli No 583.

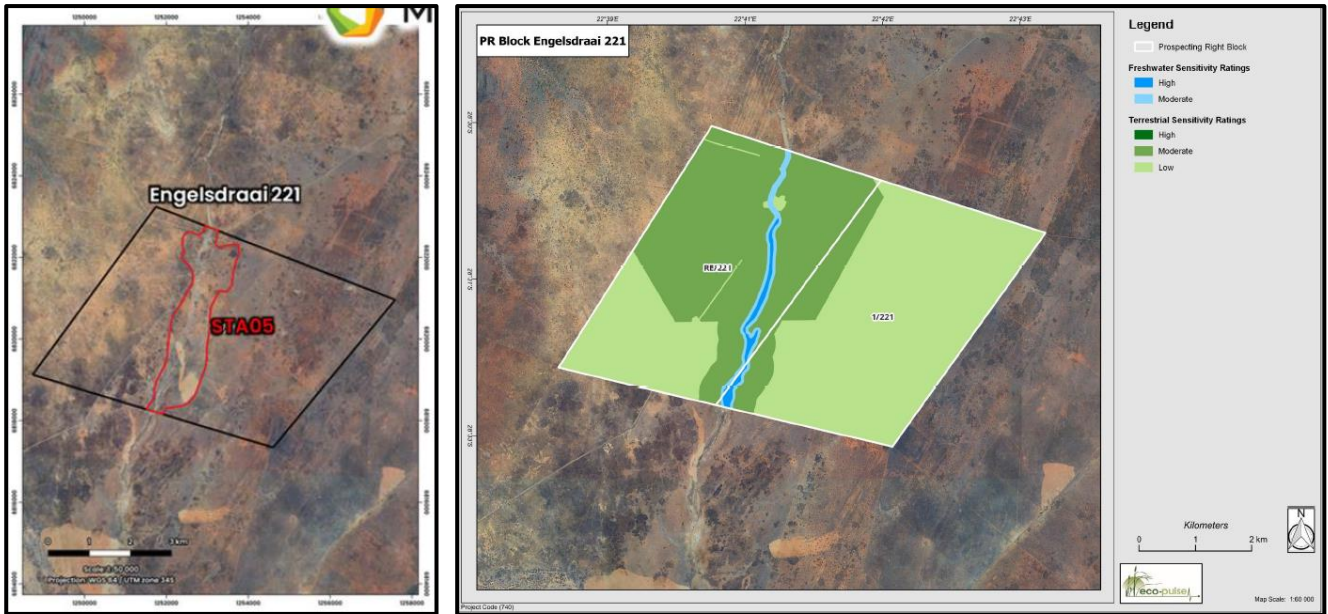


Figure 9: Comparison between the identified target area (red polygon in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Engelsdraai No 221.

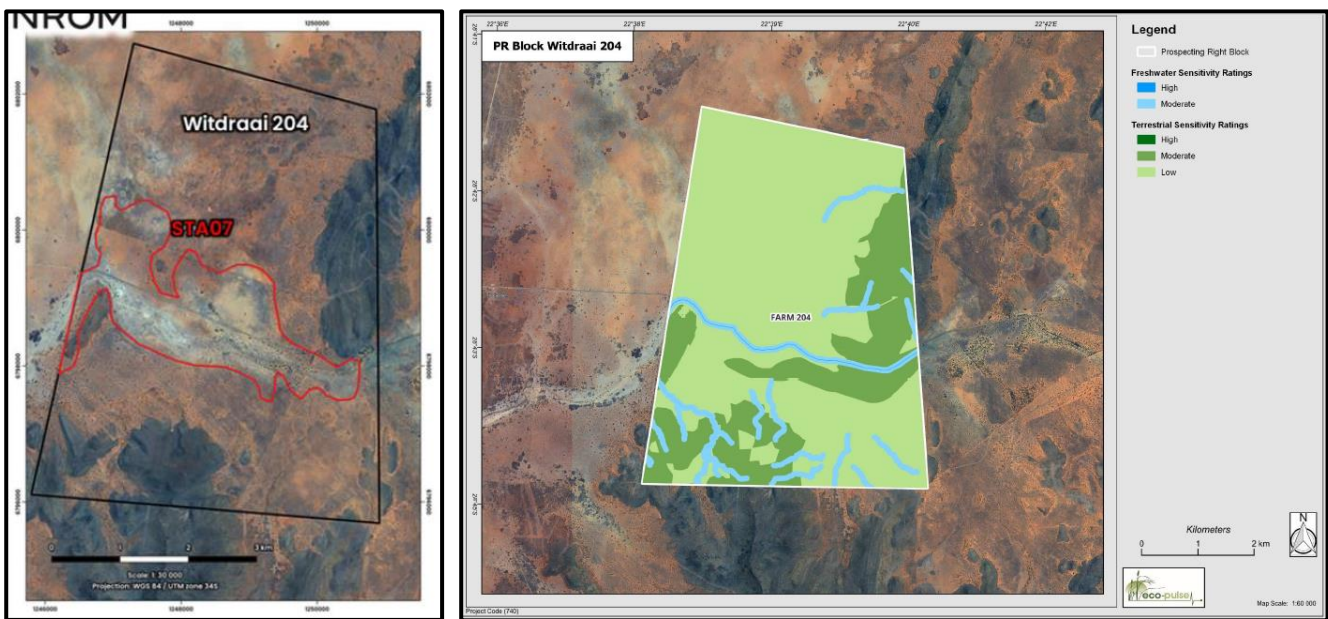


Figure 10: Comparison between the identified target area (red polygon in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Witdraai No 204.

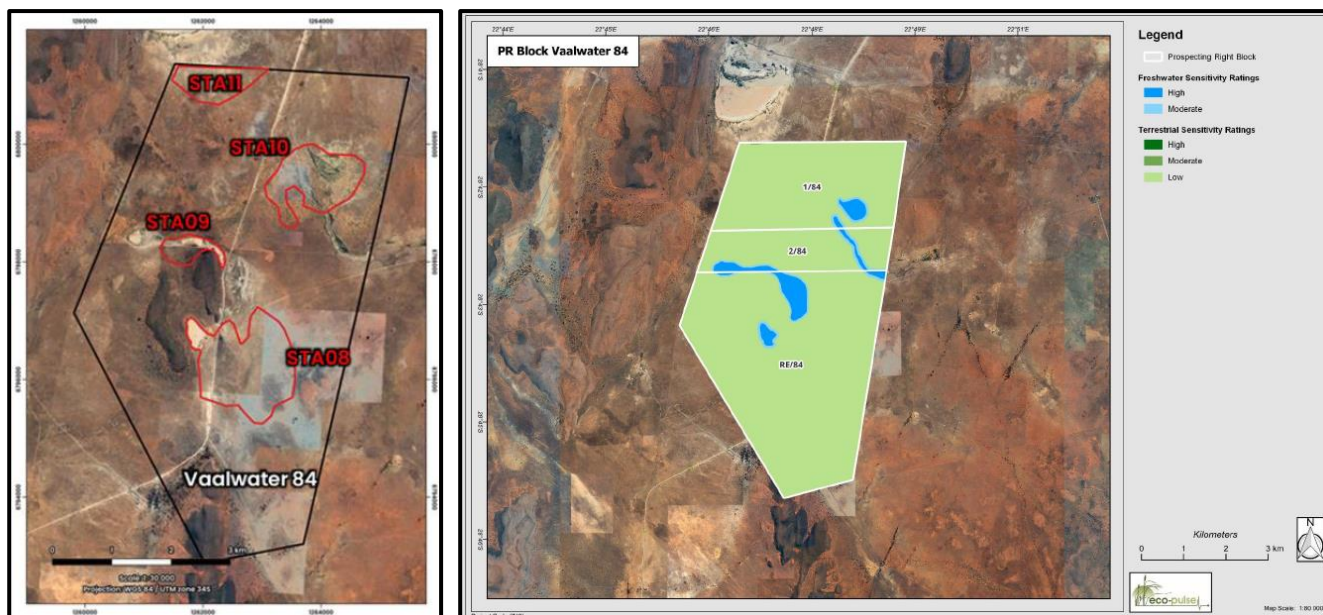


Figure 11: Comparison between the identified target area (red polygons in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Vaalwater No 84.

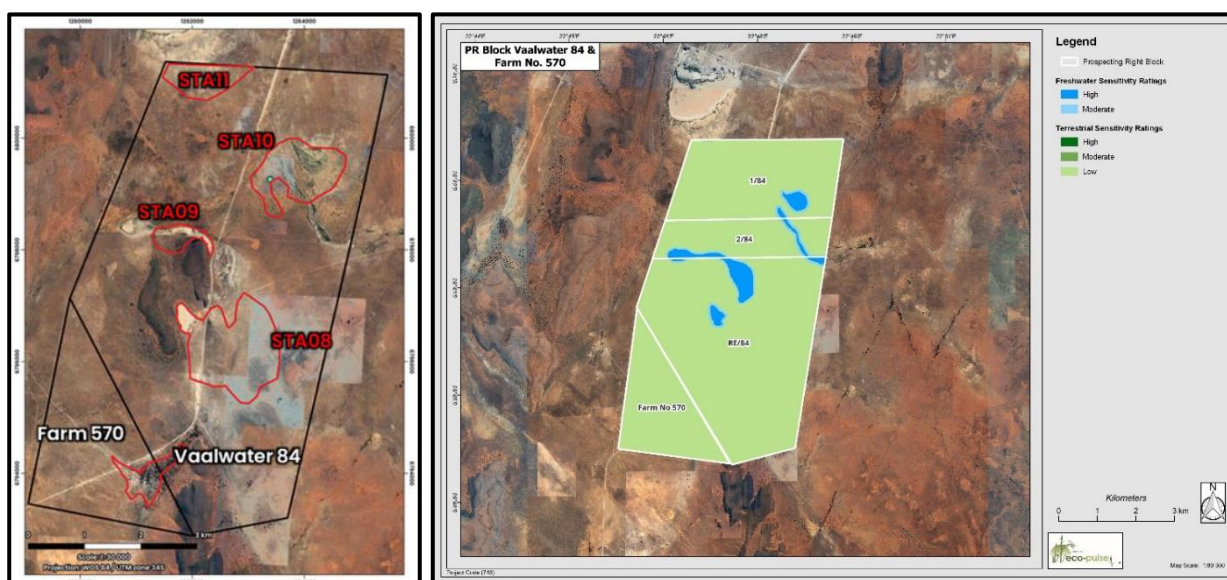


Figure 12: Comparison between the identified target area (red polygon in left pane) and the freshwater- and terrestrial sensitivity (right pane) of Farm No 570 (Zaai Plaats).

1. Current Project Proposal - Devon No 277 & Botha No 313

Although Minrom identified potential target areas on the farms Devon No 277 and Botha No 313 (Figure 74), the Applicant decided that Devon No 277 (including all relevant portions and remainders) will be excluded from the prospecting programme, and Botha No 313 will be omitted from the invasive prospecting and/or bulk sampling programme. Therefore no invasive prospecting will take place on these properties.

2. Current Project Proposal – Portion 4 and 5 of Bermolli No 583

No target areas were identified on Portion 4 of Bermolli No 583, and therefore the Applicant will not conduct invasive prospecting activities on this portion of the farm.

Remote sensing identified a “High” mineral potential on ±430 ha of Bermolli No 583/5 that appears to correspond with the preliminary layout of the ephemeral drainage that crosses through the eastern part of the farm. As presented in Figure 81 the initial freshwater sensitivity rating of the corresponding area is “High”, while the terrestrial sensitivity rating is “Medium” (Moderate).

CDH (on behalf of SIOC) also informed that Portion 4 and 5 of Bermolli No 583 forms part of the proposed Kolomela Biodiversity Off-Set Area to be declared a nature reserve once the required administrative processes have been completed.

Considering the above, the Applicant proposes the following regarding Bermolli No 583/5:

- ◆ Should the PR application be successful and phases 1 and 2 identify Portion 5 of Bermolli No 583 for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed ±430 ha area where invasive prospecting will have the lowest impact. Sampling will remain >100 m from all confirmed active watercourses.
- ◆ The site camp will be established on a previously disturbed/altered area.
- ◆ Bulk sampling will be restricted to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s identified by the specialists.
- ◆ The Applicant will enter discussions with the landowner prior to prospecting and should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.
- ◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.
- ◆ The area will be backfilled once sampling concluded and rehabilitated to a state to be determined and approved by the hydrologist.

3. Current Project Proposal – Portion 1 and Remaining Extent of Engelsdraai No 221

Only a very small portion of the target area enters Portion 1 of Engelsdraai No 221, and therefore the Applicant will not conduct invasive prospecting activities on this portion of the farm.

Minrom identified a target area of  $\pm 423$  ha on the Remaining Extent of Engelsdraai No 221. As presented in Figure 82 the initial freshwater sensitivity rating of the corresponding area ranges between Medium – High, while the terrestrial sensitivity rating is “Medium” (Moderate).

Considering the above, the Applicant proposes to the following regarding Engelsdraai No 221/RE:

- ◆ Should the PR application be successful and phases 1 and 2 identify Engelsdraai No 221/RE for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed  $\pm 423$  ha area where invasive prospecting will have the lowest impact. Sampling will remain  $>100$  m from all confirmed active watercourses.
- ◆ The site camp will be established on a previously disturbed/altered area.
- ◆ The Applicant will enter discussions with the landowner prior to prospecting.
- ◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.
- ◆ The area/s will be backfilled once sampling concluded and rehabilitated to a state to be determined and approved by the hydrologist.

4. Current Project Proposal – Portion 1 and Remaining Extent of Witdraai No 204

No target areas were identified on the Remaining Extent of Witdraai No 204, and therefore the Applicant will not conduct invasive prospecting activities on this portion of the farm.

The target area identified on Witdraai No 204/1 is  $\pm 542$  ha that mainly corresponds to the position of the Soutloop Stream. As presented in Figure 83 the initial freshwater sensitivity rating for the Soutloop Stream ranges between Medium – High, while the terrestrial sensitivity rating ranges between Low - Medium (Moderate).

Considering the above, the Applicant proposes to the following regarding Witdraai No 204/1:

- ◆ Should the PR application be successful and phases 1 and 2 identify Witdraai No 204/1 for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed  $\pm 542$  ha area where invasive prospecting will have the lowest impact. Sampling will remain  $>100$  m from all confirmed active watercourses.
- ◆ The Applicant will enter discussions with the landowner prior to prospecting.
- ◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.
- ◆ The area will be backfilled once sampling concluded and rehabilitated to a state to be determined and approved by the hydrologist.

5. Current Project Proposal – Portion 1, 2 and Remaining Extent of Vaalwater No 84

Only a small portion of the target areas were identified on Portion 2 of Vaalwater No 84, and therefore the Applicant will not conduct invasive prospecting activities on this portion of the farm.

Presently one target area ( $\pm 134$  ha) was identified on Vaalwater No 84/1 and one ( $\pm 228$  ha) on Vaalwater No 84/RE. As shown previously, the kieselguhr target area appear to correspond with depressions/water courses on the properties. According to Figure 84 the initial freshwater sensitivity rating for the pans identified on the farm ranges between Medium – High, while the terrestrial sensitivity rating of the farm is Low.

Considering the above, the Applicant proposes to the following regarding Portion 1 and the Remaining Extent of Vaalwater No 84:

- ◆ Should the PR application be successful and phases 1 and 2 identify Portion 1 and/or the Remaining Extent of Vaalwater No 84 for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed ±362 ha area where invasive prospecting will have the lowest impact. Sampling will remain >100 m from all confirmed active watercourses.
- ◆ The Applicant will enter discussions with the landowner prior to prospecting.
- ◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.
- ◆ The area will be backfilled once sampling concluded and rehabilitated to a state to be determined and approved by the hydrologist.

6. Current Project Proposal – Farm No 570 (Zaai Plaats)

Remote sensing identified a target area of ±44 ha on Farm No 570 (Zaai Plaats). The initial freshwater study did not identify aquatic areas of concern, and the terrestrial sensitivity rating of the farm is Low.

Considering the above, the Applicant proposes to the following regarding Farm No 570 (Zaai Plaats):

- ◆ Should the PR application be successful and phases 1 and 2 identify Farm No 570 (Zaai Plaats) for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed ±44 ha area where invasive prospecting will have the lowest impact.
- ◆ The Applicant will enter discussions with the landowner prior to prospecting.
- ◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.
- ◆ The area will be backfilled once sampling concluded and rehabilitated.

d) Technology to be used in the activity

Although several types of drilling tools and machinery exists for prospecting, the Applicant proposes to use specialised coring equipment that takes core samples down to a maximum depth of 10 m without any water need.

Geophysical equipment will be needed for ground electro-magnetic, magnetic and gravity surveys.

The bulk sampling trenches/pits will be dug by excavator, upon which the loosened material will be moved by FEL to the crushing/milling plant. The material will be crushed, screened, and sized to product stockpiles from where it will be transported off-site by trucks.

Although sample collection will require various mechanical equipment to be on site, the process do not require highly specialised technology as secondary processing and metallurgical testing will occur off-site. Therefore no technology alternatives were deemed viable for this project.

**e) Operational aspects of the activity**

The operational aspects of the invasive prospecting activities will be based on the non-invasive prospecting results. The project allows some flexibility in terms of when, where, and how the sampling and surveying is conducted. For instance, the site camp location and jeep-track routes will be determined in accordance with the landowner agreement and identified sensitive areas that must be avoided. Sampling will also remain >100 m from all confirmed active watercourses.

The project can further consider mitigating impacts such as dust generation, workhours, prospecting during agriculturally important seasons etc. Mitigation measures to this regard were incorporated into the EMPR (Part B) that forms part of this report and will become legally binding once approved.

Should the mitigation measures proposed in this report be implemented no need for alternative operational aspects could thus far be identified.

**f) Option of not implementing the activity (No-go Alternative)**

The no-go alternative entails no change to the status quo and is therefore a real alternative that needs to be considered. If the no-go alternative is implemented the land in question will not be prospected by the Applicant and the *status quo* will prevail.



However, the reality is that the Northern Cape is known for its mineral riches, and the remote sensing study (by Minrom) showed that some of the earmarked farms have a high mineral potential. Therefore, should the no-go option be applied to this application, the areas will most likely see another application by another party within the near future. Applying the no-go option presently will therefore not prevent the prospecting of the area but most likely only postpone it.

Another cause of not pursuing this application is the potential loss of an economically viable natural resource that can be used in a variety of industries. The no-go option will further entail a loss of employment opportunities, as well as socio-economic benefits and growth development opportunities for the employees. Given the high level of unemployment and poverty in the earmarked magisterial districts the loss of such opportunities is considered significant.

The positive implication of the no-go alternative is that there will (temporarily) be no impact on the current land use, bio- and geophysical environment of the earmarked areas.

Considering the above, it is proposed that if the management and mitigation measures proposed in this report are implemented the environmental risks can be managed and the area will be rehabilitated afterwards that will allow landowners to continue the use of the prospected areas. The Applicant will also compensate the landowners should invasive prospecting be conducted on their properties. Based on the above it is proposed that the no-go option (regarding the project application) is not a preferred/viable option.

However, based on the findings of the EIA it is proposed that the no-go option be implemented for the farm Devon No 277. Should Portion 5 of Bermolli No 583 be promulgated as a nature reserve before the prospecting right is granted this farm must also be removed from the PR footprint.

It is further proposed that the following farms are removed from the invasive prospecting programme:

- ◆ Portion 1 and Remaining Extent of Botha No 313;
- ◆ Portion 4 of Bermolli No 583;
- ◆ Portion 1 of Engelsdraai No 221;

- ◆ Remaining Extent of Witdraai No 204;
- ◆ Portion 2 of Vaalwater No 84.

**g) Final Project Proposal**

The following table summarizes the final project proposal.

*Table 9: Summary of the final project proposal.*

<b>EARMARKED FARMS</b>	<b>NON-INVASIVE PROSPECTING</b>	<b>INVASIVE PROSPECTING</b>	<b>NO-GO OPTION</b>	<b>TYPE / TECHNOLOGY / OPERATIONAL ASPECTS</b>
Portion 1 and Remaining Extent of Devon No 277	<b>NO</b>	<b>NO</b>	<b>YES</b>	◆ No prospecting.
Portion 1 and Remaining Extent of Botha No 313	<b>YES</b>	<b>NO</b>	<b>YES FOR INVASIVE PROSPECTING</b>	◆ Non-invasive prospecting.
Portion 4 of Bermolli No 583	<b>YES</b>	<b>NO</b>	<b>YES FOR INVASIVE PROSPECTING</b>	◆ Non-invasive prospecting.
Portion 5 of Bermolli No 583	<b>YES</b>	<b>YES</b>	<b>NO</b>	<ul style="list-style-type: none"> <li>◆ Non-invasive prospecting,</li> <li>◆ Specialised coring equipment,</li> <li>◆ Invasive prospecting (with bulk sampling) restricted to 1 ha supported by the specialists.</li> <li>◆ <u>No prospecting should the area be declared a nature reserve prior to granting of the PR.</u></li> <li>◆ Management and mitigation measures proposed in the EMPR.</li> </ul>
Remaining Extent of Engelsdraai No 221	<b>YES</b>	<b>YES</b>	<b>NO</b>	<ul style="list-style-type: none"> <li>◆ Non-invasive prospecting,</li> <li>◆ Specialised coring equipment,</li> <li>◆ Invasive prospecting (with bulk sampling).</li> <li>◆ Management and mitigation measures proposed in the EMPR.</li> </ul>

EARMARKED FARMS	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING	NO-GO OPTION	TYPE / TECHNOLOGY / OPERATIONAL ASPECTS
Portion 1 of Engelsdraai No 221	YES	NO	YES FOR INVASIVE PROSPECTING	◆ Non-invasive prospecting.
Remaining Extent of Witdraai No 204	YES	NO	YES FOR INVASIVE PROSPECTING	◆ Non-invasive prospecting.
Portion 1 of Witdraai No 204	YES	YES	NO	◆ Non-invasive prospecting,
Portion 1 and Remaining Extent of Vaalwater No 84	YES	YES	NO	◆ Specialised coring equipment, ◆ Invasive prospecting (with bulk sampling). ◆ Management and mitigation measures proposed in the EMPR.
Portion 2 of Vaalwater No 84	YES	NO	YES FOR INVASIVE PROSPECTING	◆ Non-invasive prospecting.
Farm No 570 (Zaai Plaats)	YES	YES	NO	◆ Non-invasive prospecting, ◆ Specialised coring equipment, ◆ Invasive prospecting (with bulk sampling). ◆ Management and mitigation measures proposed in the EMPR.

## 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 attend 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).

The relevant landowners, stakeholders and I&AP's were informed of the prospecting right application by means of an advertisement in the Noordkaap Bulletin, and on-site notices that were placed at conspicuous places. A notification letter inviting comments on the DSR over a 30-days commenting period (ending 25 March 2024) was sent to the landowners, lawful occupier, neighbouring landowners, stakeholders, and any other I&AP that may be interested in the project. Further to this an advertisement was placed in the

Noordkaap Bulletin inviting the surrounding landowners whose contact details could thus far not be obtained to register on the project. All the notices and advertisements were available in both Afrikaans and English. The comments received on the DSR were incorporated into the final Scoping Report (FSR) that was approved by the DMRE on 29 July 2024.

The following table provides a list of the I&AP's and stakeholders that were informed/invited to comment/register on the project during the first public participation period:

Table 10: List of the landowners, I&AP's and stakeholders that were informed/invited to comment/register on the project during the first public participation period.

LANDOWNERS	SURROUNDING LANDOWNERS
<p><b><u>Landowner:</u></b></p> <ul style="list-style-type: none"> <li>◆ United Manganese of Kalahari (Pty) Ltd Remaining Extent of the farm Botha No 313 Portion 1 of the farm Botha No 313</li> <li>◆ Kudumane Manganese Resources (Pty) Ltd Remaining Extent of the farm Devon No 277</li> <li>◆ Transnet Ltd Portion 1 of the farm Devon 277</li> <li>◆ Mr PJ van der Byl Lambrechts Portion 4 of the farm Bermolli No 583</li> <li>◆ Sishen Iron Ore Company (Pty) Ltd Portion 5 of the farm Bermolli No 583</li> <li>◆ Me VMH Sieberhagen Remaining Extent of the farm Engelsdraai No 221</li> <li>◆ Van der Byl Boerdery (Pty) Ltd Portion 1 of the farm Engelsdraai No 221</li> <li>◆ Me EGA Maritz Remaining Extent of the farm Witdraai No 204</li> <li>◆ KG Mining (Pty) Ltd Portion 1 of the farm Witdraai No 204</li> <li>◆ Abraham Willem Adriaan van Wyk Testamentêre Trust &amp; Me TJ van Wyk Remaining Extent of the farm Vaalwater No 84</li> </ul>	<p><b><u>Surrounding Landowners and I&amp;AP's:</u></b></p> <ul style="list-style-type: none"> <li>◆ J&amp;B van Wyk Familie Trust Remaining Extent of Moodraai No 310</li> <li>◆ Amari Manganese (Pty) Ltd Portion 1 of Kongoni No 311</li> <li>◆ Assmang Ltd Remaining Extent of Telele No 312</li> <li>◆ Mr GA Coetsee Remaining Extent of Roldraai No 333</li> <li>◆ Me AS Anthonissen Remaining Extent of Perth No 276</li> <li>◆ United Manganese of Kalahari (Pty) Ltd Remaining Extent of Smartt No 314</li> <li>◆ Saltrim Ranches (Pty) Ltd Remaining Extent of Middelplaats No 332</li> <li>◆ Kudumane Manganese Resources (Pty) Ltd Portion 2 of York A No 279, Portion 11 of York A No 279, Portion 1 of Telele No 312</li> <li>◆ Mr DH Fourie Remaining Extent of Annex Langdon No 278</li> <li>◆ Mr JP Jansen Remaining Extent of York A No 279</li> </ul>

LANDOWNERS	SURROUNDING LANDOWNERS
<ul style="list-style-type: none"> <li>◆ Me M and Mr PJ van Biljon Portion 1 of the farm Vaalwater No 84 Portion 2 of the farm Vaalwater No 84</li> </ul>	<ul style="list-style-type: none"> <li>◆ DP World (formerly known as Imperial Logistics South Africa Group (Pty) Ltd) Portion 13 of York A No 279</li> <li>◆ Transnet Ltd Portion 1 of Perth No 276, Portion 3 of York A No 279</li> <li>◆ Mr CH Kotze Remaining Extent of Farm No 231</li> <li>◆ Kriel Boerdery Trust Remaining Extent of Farm No 228, Portion 1 of Farm No 228</li> <li>◆ Mr HT Snijman &amp; Hennie Tjaart Snijman Testamentêre Trust Remaining Extent of Watervlak No 585, Portion 2 of Watervlak No 60</li> <li>◆ Floradale Boerdery CC Remaining Extent of Farm No 230</li> <li>◆ Sishen Iron Ore Company (Pty) Ltd Remaining Extent of Farm No 542, Portion 2 of Farm No 542, Portion 3 of Farm No 543</li> <li>◆ Mr TJ Snyman Remaining Extent of Gras Vlakte No 61, Remaining Extent of Farm No 223</li> <li>◆ Me VMH Sieberhagen Remaining Extent of Farm No 218</li> <li>◆ Van der Byl Boerdery (Pty) Ltd Portion 2 of Farm No 218</li> <li>◆ Pieter Bredenkamp Trust Remaining Extent of Farm No 222</li> <li>◆ Coeta-M Trust Remaining Extent of Farm No 224</li> <li>◆ QCK Lezmin 4677 (Pty) Ltd Portion 3 of Gekonsolideerde Plaas No 210</li> </ul>

LANDOWNERS	SURROUNDING LANDOWNERS
	<ul style="list-style-type: none"> <li>◆ KG Mining (Pty) Ltd Portion 1 of Farm No 203</li>   <li>◆ Me EGA Maritz Portion 2 of Farm No 203</li>   <li>◆ Mr JH Coetzee Remaining Extent of Paauwvontein No 209, Portion 1 of Gekonsolideerde Plaas No 210</li>   <li>◆ Mr MC Lambrechts Remaining Extent of Farm No 200, Portion 1 of Farm 200, Remaining Extent of Farm No 201, Portion of Farm No 201, Portion 1 of Farm No 202, Remaining Extent of Farm No 203, Remaining Extent of Oudemeideskloof No 205</li>   <li>◆ Mr AJC van Wyk Remaining Extent No 82</li>   <li>◆ Me DGS Murray Remaining Extent of Zaai Plaats No 83</li>   <li>◆ Mr PK van Zyl Remaining Extent of Kopje No 85</li>   <li>◆ Mr FP van der Schyff Remaining Extent of Dell No 92, Remaining Extent of Range No 93</li>   <li>◆ Abraham Willem Adriaan Van Wyk Testamentêre Trust Remaining Extent of Farm No 570 (Zaai Plaats)</li>   <li>◆ Mr JW van Niekerk Remaining Extent of Matsap No 81, Remaining Extent of Farm No 79</li>   <li>◆ Oberholster Anna Gertruida B/E &amp; Oberholster Anna Gertruida Trust Bergenaars Pad No 225, Remaining Extent of Farm No 220</li>   <li>◆ Mr RJ Coetzee Paardekloof No 219</li> </ul>

### STAKEHOLDERS

- ◆ Department of Agriculture, Environmental Affairs, Rural Development and Land Reform;
- ◆ Department of Agriculture, Land Reform and Rural Development;
- ◆ Department of Economic Development and Tourism;
- ◆ Department of Labour;
- ◆ Department of Roads and Public Works;
- ◆ Department of Water and Sanitation (DWS);
- ◆ Eskom;
- ◆ Joe Morolong Local Municipality;
- ◆ Joe Morolong Local Municipality (Ward 4);
- ◆ John Taolo Gaetsewe District Municipality;
- ◆ Pixley ka Seme District Municipality;
- ◆ Postmasburg Boerevereniging;
- ◆ Siyancuma Local Municipality;
- ◆ Siyancuma Local Municipality (Ward 1);
- ◆ Siyancuma Local Municipality (Ward 7);
- ◆ South African Heritage Resources Agency;
- ◆ Tsantsabane Local Municipality;
- ◆ Tsantsabane Local Municipality (Ward 7);
- ◆ ZF Mgcawu District Municipality.

The following table presents a list of stakeholders, landowners, and/or I&AP's that commented/registered on the project thus far.

Table 11: List of the landowners, I&AP's and stakeholders that comment/register on the project.

### REGISTERED STAKEHOLDERS, LANDOWNERS AND/OR I&AP'S

- ◆ Blackrock Mine Operations;
- ◆ DWS;
- ◆ Kudumane Manganese Resources (Pty) Ltd & Malan Scholes Incorporated (MSI);
- ◆ Mr A Williams (Agri Postmasburg);
- ◆ Me C Lambrechts (Portion 4 of Bermolli No 583);
- ◆ Mr J Bredenkamp (Portion 3 of Gekonsolideerde Plaas No 210);
- ◆ Mr W Pretorius (DP World formerly known as Imperial Logistics South Africa Group (Pty) Ltd / Portion 13 of York No 279);
- ◆ Sishen Iron Ore Company (SIOC) & Cliffe Dekker Hofmeyr (CDH);
- ◆ Transnet SOC Ltd; and
- ◆ United Manganese of Kalahari (Pty) Ltd.

Refer to the following table for an explanation on how the public participation process of this project took the methods stipulated in Regulation 41 of the NEMA Regulations into account. Proof of the public participation process that was followed is attached as Appendix I to this document.

Table 12: Table comparing the required methods with the public participation process of this project.

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
<ul style="list-style-type: none"> <li>◆ Regulation 41(2)(a): <i>Fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of-</i> <ul style="list-style-type: none"> <li>(i) <i>The site where the activity to which the application or proposed application relates is or is to be undertaken; and</i></li> <li>(ii) <i>Any alternative site.</i></li> </ul> </li> <li>◆ Regulation 41(3): <i>A notice, notice board or advertisement referred to in subregulation (2) must—</i> <ul style="list-style-type: none"> <li>(a) <i>give details of the application or proposed application which is subjected to public participation; and</i></li> <li>(b) <i>state—</i> <ul style="list-style-type: none"> <li>(i) <i>whether basic assessment or S&amp;EIR procedures are being applied to the application;</i></li> <li>(ii) <i>the nature and location of the activity to which the application relates;</i></li> <li>(iii) <i>where further information on the application or proposed application can be obtained; and</i></li> <li>(iv) <i>the manner in which and the person to whom representations in respect of the application or proposed application may be made.</i></li> </ul> </li> </ul> </li> <li>◆ Regulation 41(4): <i>A notice board referred to in subregulation (2) must—</i> <ul style="list-style-type: none"> <li>(a) <i>be of a size of at least 60cm by 42cm; and</i></li> <li>(b) <i>display the required information in lettering and in a format as may be determined by the competent authority.</i></li> </ul> </li> </ul>	<p>Notice boards were fixed at the following nine conspicuous and public accessible areas:</p> <ul style="list-style-type: none"> <li>◆ Hotazel Post Office;</li> <li>◆ Along the R380 on the fence of farm Devon No 277;</li> <li>◆ Road crossing between the farms Devon No 277 and Botha No 313;</li> <li>◆ Kuruman Library;</li> <li>◆ Postmasburg Municipality;</li> <li>◆ Along the road passing through Bermolli No 583;</li> <li>◆ Farm fence of Engelsdraai No 221;</li> <li>◆ Boundary fence of Witdraai No 204; and</li> <li>◆ At km 26.00 of the R309 on the fence of Vaalwater No 84.</li> </ul> <p>The notice boards that were placed complied with the requirements of Regulation 41(3) as presented in Appendix I2 attached to this document.</p> <p>The notices were printed on notice boards of 60 x 42 cm in Arial font of sufficient size.</p>
<ul style="list-style-type: none"> <li>◆ Regulation 41(2)(b): <i>giving written notice, in any of the manners provided for in section 47D of the Act, to-</i> <ul style="list-style-type: none"> <li>(i) <i>the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>(i) The Applicant is in the process of contacting the landowners regarding the project.</li> <li>(ii) The landowners whose contact details were available were also invited to register on the project and comment on the DSR</li> <li>(iii) The directly surrounding landowners (whose contact details were available), and lawful occupiers of the land (if applicable) were informed of the project and invited to comment on the DSR.</li> </ul>



REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
<p>(ii) <i>owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;</i></p> <p>(iii) <i>the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;</i></p> <p>(iv) <i>the municipality which has jurisdiction in the area;</i></p> <p>(v) <i>any organ of state having jurisdiction in respect of any aspect of the activity;</i></p> <p>(vi) <i>any other party as required by the competent authority;</i></p>	<p>(iv) The various Ward Councillors applicable to the application footprint were invited to comment on the project and DSR:</p> <ul style="list-style-type: none"> <li>◆ Joe Morolong Local Municipality – Ward 4;</li> <li>◆ Siyancuma Local Municipality – Ward 1, 7; and</li> <li>◆ Tsantsabane Local Municipality – Ward 7.</li> </ul> <p>(v) Representatives from the following local and district municipalities were invited to comment on the project and DSR:</p> <ul style="list-style-type: none"> <li>◆ Joe Morolong Local Municipality;</li> <li>◆ Siyancuma Local Municipality;</li> <li>◆ Tsantsabane Local Municipality;</li> <li>◆ John Taolo Gaetsewe District Municipality;</li> <li>◆ Pixley Ka Seme District Municipality;</li> <li>◆ ZF Mgcawu District Municipality</li> </ul> <p>(vi) As listed in Table 10 the relevant state departments and entities were invited to comment on the project and DSR.</p> <p>(vii) The Postmasburg Boerevereniging (Farmers Union) were invited to comment on the project and/or DSR.</p>
<p>◆ Regulation 41(2)(c): <i>Placing an advertisement in-</i></p> <p>(i) <i>One local newspaper; or</i></p> <p>(ii) <i>any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations.</i></p>	<p>The project and availability of the DSR were advertised in the Noordkaap Bulletin on 22 February 2024.</p>
<p>◆ Regulation 41(2)(d): <i>Placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken...</i></p>	<p>The Noordkaap Bulletin is a provincial newspaper distributed in Afrikaans and English, free of charge in all the regions applicable to this application.</p>
<p>◆ Regulation 41(2)(e): <i>Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to—</i></p> <p>(i) <i>illiteracy;</i></p> <p>(ii) <i>disability; or</i></p> <p>(iii) <i>any other disadvantage.</i></p>	<p>Some landowners/I&amp;AP's without email addresses were messaged via WhatsApp or SMS. Persons not answering their telephones were also messaged to explain the reason for the call from the consultants.</p>

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
<ul style="list-style-type: none"> <li>◆ Regulation 41(5): <i>Where public participation is conducted in terms of this regulation for an application or proposed application, subregulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d)...</i></li> </ul>	<p>Not applicable to this application.</p>
<ul style="list-style-type: none"> <li>◆ Regulation 41(6): <i>When complying with this regulation, the person conducting the public participation process must ensure that—</i> <ul style="list-style-type: none"> <li>(a) <i>information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and</i></li> <li>(b) <i>participation by potential or registered interested and affected parties is facilitated in such a manner that all potential or registered interested and affected parties are provided with a reasonable opportunity to comment on the application or proposed application.</i></li> </ul> </li> </ul>	<p>The DSR containing the first set of facts in respect of this application was available to potential I&amp;AP's for perusal and commenting over a 30-days commenting period. The DSR was also available on the Greenmined website. I&amp;AP's and stakeholders were invited to contact the EAP should additional information be required.</p> <p>Upon approval of the FSR, the DEIAR was compiled that will also be available to I&amp;AP's and stakeholders for their perusal.</p>
<ul style="list-style-type: none"> <li>◆ Regulation 41(7): <i>Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.</i></li> </ul>	<p>Not applicable to this project.</p>

As discussed in Table 13, KMR lodged an appeal in terms of Section 96 of the MPRDA against the acceptance of this application with the DMRE (National). On 10 September 2024, DMRE Legal Services (National) informed the Applicant that the application in terms of Section 96(2) of the MPRDA by KMR was granted and therefore subsequently suspends the decision of the DMRE-NC to accept the prospecting right application. Following discussions with the national and regional DMRE offices, the Applicant lodged its own Section 96 appeal against the decision of the DMRE (National) to suspend the acceptance letter on the

basis that the farm Devon No 277 will be omitted from the prospecting right application. This application is pending with the DMRE.

The proposal (to omit the said farm) was accordingly incorporated into this document, specifically in *Part A(1)(g)(i) Details of the development footprint alternatives considered*. Following discussions with the DMRE-NC (competent authority) it was confirmed that the public participation process can continue while the Applicant's Section 96 application is being considered by the DMRE (National). Considering this, the Draft Environmental Impact Assessment Report was compiled that will be circulated for public comments over a 30-day period that extends until 04 November 2024. The comments received on the draft EIA & EMPR will be incorporated into the final EIA & EMPR to be submitted to the DMRE for decision making. See attached as Appendix I2 proof that the I&AP's and stakeholders were contacted.

iii) Summary of issues raised by I&AP's

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

Table 13: Summary of issues raised by I&AP's.

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
<b><u>AFFECTED PARTIES</u></b>				
Landowner/s	-	-	-	-
United Manganese of Kalahari (Pty) Ltd (UMK) ♦ Remaining Extent of Botha No 313 ♦ Portion 1 of Botha No 313	X 15/02/2024 & 19/02/2024	Mr Phayane registered as the representative of UMK, following which Mr Mudau requested to be registered as an I&AP on behalf of UMK on 19 February 2024.	Greenmined acknowledged both registrations and supplied Mr Mudau with a copy of the Regulation 2.2 Project Map. Both parties were invited to comment on the DSR. To date no additional comments were received from UMK.	Refer to Appendix I2 for proof of public participation.
On 01 July 2024 Greenmined informed UMK that following a remote surveying exercise it was decided that the farm Botha No 313 will be excluded from any prospecting and/or bulk sampling as this farm did not show any economically viability or quality of the mineral under application (kieselguhr/diatomite). It was noted that this decision will be incorporated and discussed in the draft environmental impact assessment report (DEIAR) that will be available for perusal.				
Kudumane Manganese Resources (Pty) Ltd (KMR) ♦ Remaining Extent of Devon No 277	X 13/02/2024 & 27/02/2024 & 25/03/2024 & 26/03/2024	KMR registered (13 February 2024) as I&AP's on the project and noted that as surface right holder, they appeal the application.	Greenmined acknowledged the registration and appeal of KMR. KMR was invited to comment on the DSR.	Refer to Appendix I1 for proof of public participation, as well as the below listed.



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>On 27 February 2024 Me Ramsay of Malan Scholes Incorporated informed that as KMR is a holder of a mining right (NC 30/5/1/2/2/10053 MR) on the farm Devon No 277 the company is an I&amp;AP and would therefore like to be register on the project. Me Ramsay also enquired/requested the following:</p> <ol style="list-style-type: none"> <li>1. confirmation as to whether the Prospecting Right application lodged by K2022641005 (South Africa) Proprietary Limited, has been accepted;</li> <li>2. if the Prospecting Right Application has been accepted, please provide a copy of the letter recording the acceptance by the Regional Manager of the Prospecting Right Application; and</li> <li>3. a copy of the Scoping Report (and any other relevant documents) prepared by Greenmined Environmental (Pty) Ltd.</li> </ol>				
<p>Additional comments received from Malan Scholes Incorporated on behalf of KMR:</p> <p>“1.1 We act for Kudumane Manganese Resources Proprietary Limited (“KMR”).</p> <p>1.2 We refer to your notice dated 22 February 2024 (“22 February Notice”), which enclosed a link containing, inter alia, the draft scoping report (“Draft Scoping Report”) prepared by Greenmined Environmental Proprietary Limited (“Greenmined”), the environmental assessment practitioner (“EAP”) appointed by K2022641005 (South Africa) Proprietary Limited (the “Applicant”), for purposes of the Applicant’s application for an environmental authorisation (“EA Application”) in terms of part 3 of Chapter 4 of the Environmental Impact Assessment Regulations, 2014 (GNR 982 of 4 December 2014), as amended (“EIA Regulations”), published in terms of the provisions of the National Environmental Management Act, 107 of 1998, as amended (“NEMA”). A copy of the 22 February Notice is attached hereto as Annexure “A”.</p> <p>1.3 The EA Application has been submitted by the Applicant in pursuance of a prospecting right (“Prospecting Right Application”) with Department of Mineral Resources and Energy (“DMRE”) reference number: NC 30/5/1/1/2/13826 PR in accordance with section 16 of the Mineral and Petroleum Resources Development Act, 28 of 2002, as amended (“MPRD Act”), inclusive of bulk sampling, for the minerals diatomite, diatomaceous earth and kieselguhr in respect of the following farms –</p> <p>1.3.1 in the Kuruman District –</p> <p>1.3.1.1 Portion 1 and the Remaining Extent of the farm Botha No 313; and</p> <p>1.3.1.2 Portion 1 and the Remaining Extent of farm Devon No 277 (the “Farm Devon”);</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>1.3.2 in the Hay District –</p> <p>1.3.2.1 Portions 4 and 5 of the farm Bermolli No 583;</p> <p>1.3.2.2 Portion 1 and the Remaining Extent of farm Engelsdraai No 221;</p> <p>1.3.2.3 Portion 1 and the Remaining Extent of the farm Witdraai No 204; and</p> <p>1.3.2.4 Portions 1, 2 and the Remaining Extent of the farm Vaalwater No 84;</p> <p>all situated within the Northern Cape Province (“Prospecting Right Area”).</p> <p>1.4 The purpose of this letter is to provide comments, in terms of regulation 43 of the EIA Regulations, by KMR (being a registered interested and affected party (“I&amp;AP”)), in the form of an objection and to bring specific issues to the attention of, inter alia, Greenmined and the DMRE. The comments and objections submitted by KMR are set out in paragraph 2 below.</p> <p>1.5 On 12 February 2024, Tshifhiwa Nemakhavhani (“Nemakhavhani”), a SHERQ Manager employed by KMR, came across the Prospecting Right Application notification (“Prospecting Right Application Notification”) advertised alongside the main entrance gate of the Farm Devon. The Prospecting Right Application Notification advised I&amp;APs of the Applicant’s Prospecting Right Application for the minerals diatomite, diatomaceous earth and kieselguhr, in respect of the Prospecting Right Area. A photograph of the Prospecting Right Application Notification taken by Nemakhavhani on 12 February 2024 is attached hereto as Annexure “B”.</p> <p>1.6 Subsequent to KMR becoming aware of the Applicant’s Prospecting Right Application and on 13 February 2024, Baratang Mothobi (“Mothobi”) of KMR, registered KMR as an I&amp;AP. A copy of the email trail in which Mothobi registered KMR as an I&amp;AP as well as confirmation of registration from the EAP, is attached hereto as Annexure “C”.</p> <p>1.7 In terms of the Prospecting Right Application Notification, Greenmined advised that the “[D]raft Scoping Report (DSR) will be available for public comment from 22 February 2024“. On 22 February 2024, KMR received an email (“22 February Email”) from the EAP in which to notify KMR that the Draft Scoping Report was now available for comment. A copy of the 22 February Email is attached hereto as Annexure “D”.</p> <p>1.8 In light of the fact that KMR was notified in the 22 February Email that the Draft Scoping Report was available for comment from 22 February 2024, KMR’s comments are submitted on 25 March 2024, being within the prescribed 30-day period.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>1.9 KMR is the Holder, as defined in section 1 of the MPRD Act, of a Mining Right (“KMR Mining Right”) for “Manganese Ore” in respect of, inter alia, the Farm Devon 227, situated in the Magisterial District of Kuruman, Northern Cape (“KMR Mining Right Area”). The KMR Mining Right commenced on 20 January 2017 and will continue to be in force for a period of 20 years, ending on 19 January 2037. A copy of the KMR Mining Right is attached hereto as Annexure “E”.</p> <p>1.10 KMR subsequently applied for and was granted consent in terms of section 102 of the MPRD Act (“Section 102 Amendment”) to include the minerals “[B]anded Iron Formation, Calcrete and Wesselite” in the KMR Mining Right. A copy of the Section 102 Amendment is attached hereto as Annexure “F”.</p> <p>1.11 In addition to being the Holder of the KMR Mining Right, KMR owns the following properties –</p> <p>1.11.1 Portion 1 and the Remaining Extent of the Farm Devon (which fall within the Applicant’s Prospecting Right Area);</p> <p>1.11.2 Portions 2 and 11 of the Farm York A 279; and</p> <p>1.11.3 Portion 1 of the farm Telele 312.</p> <p>1.12 In accordance with the KMR Mining Right, KMR -</p> <p>1.12.1 is currently conducting opencast Mining Operations on the farm Hotazel 280;</p> <p>1.12.2 is engaged in an exploration campaign which seeks to optimise opencast resources and thereby increase the overall life of mine on the farm Kipling 271</p> <p>1.12.3 intends to establish a Waste Dump on the Western side of the farm Devon (“Waste Dump”). The Waste Dump is an authorised facility;</p> <p>1.12.4 intends to conduct concurrent rehabilitation activities at the Devon pit located on the farm Devon;</p> <p>1.12.5 intends to expand mining operations to the orebody on the farm Devon (including underground mining); and</p> <p>1.12.6 intends to develop a blasting contractor site on the Eastern side of the farm Devon.</p> <p>1.13 In addition to being the Holder of the KMR Mining Right in respect of the KMR Mining Area, KMR is the Holder of a Mining Right for “Manganese Ore” (“York Mining Right”) in respect of the “Remainder and Portion 1 of the farm Telele No 312, Remainder and Portion 2 of the farm York” situated in the Magisterial District of Kuruman, Northern Cape Province (“York Mining Right Area”). A copy of the York Mining Right is attached hereto as Annexure “G”.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>1.14 It is evident from the plan attached to the KMR Mining Right, that the KMR Mining Area and the York Mining Area are situated directly opposite one another. In accordance with both the KMR Mining Right and the York Mining Right, KMR intends to –</p> <p>1.14.1 commence with underground Mining Operations which is intended to stretch from the farm Devon to the farm York; and</p> <p>1.14.2 migrate the waste collected at the farm York to the farm Devon, once the Waste Dump has been established by KMR.</p> <p>1.15 Importantly, the underground mining activities on the farm Devon are authorised in KMR’s existing approvals.</p> <p>2 Comments and Objections in respect of the Draft Scoping Report</p> <p>2.1 Premature submission of the EA Application</p> <p>2.1.1 According to page 134 of the Applicant’s Draft Scoping Report – “[T]he environmental authorization- and prospecting right application in terms of the NEMA: EIA Regulations, 2014 (as amended) and the MPRDA, 2002 respectively <u>were submitted to the DMRE on 12 October 2023</u> and accepted on 13 December 2023 [our emphasis].”</p> <p>2.1.2 It therefore appears that the Applicant submitted the Prospecting Right Application and the EA Application simultaneously on 12 October 2023.</p> <p>2.1.3 Regulation 16 (2)(a) of the EIA Regulations prescribes that –                      “[A]n application for an environmental authorisation may – (a) where applicable, <u>only be submitted after the acceptance of an application for any right, permission, permit or consent in terms of the Mineral and Petroleum Resources Development Act, 2002 [our emphasis]”.</u></p> <p>2.1.4 The EIA Regulations clearly provide that the Applicant could only submit its EA Application <u>after</u> the acceptance of the Prospecting Right Application by the Regional Manager. Yet, it is clear from the Prospecting Right Application acceptance letter (“Acceptance Letter”), that the Regional Manager only accepted the Applicant’s Prospecting Right Application on 13 December 2023, being some 2 months after the EA Application was submitted by the Applicant. A copy of the Acceptance Letter dated 13 December 2023, is attached hereto as Annexure “H”.</p> <p>2.1.5 In light of the above, it is clear that the Applicant failed to comply with the provisions of regulation 16 of the EIA Regulations. Accordingly, KMR is of the view that the EA Application by the Applicant must be withdrawn and resubmitted by following the appropriate procedure provided for in the EIA Regulations.</p>				





<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>2.2 Socio-economic Impacts and Benefits</p> <p>2.2.1 In motivating for the need and desirability of the proposed Prospecting Operations by the Applicant, Greenmined on page 35 of the Draft Scoping Report states that the “proposed labour component of the proposed project will be ±15 to 20 labourers that will be hired from the local communities.” Greenmined goes further on page 39 of the Draft Scoping Report to state that “[T]his is of crucial importance in municipal areas with very high unemployment rates.”</p> <p>2.2.2 Appendix 2 to the EIA Regulations outlines the objective of the scoping process contemplated in regulation 21 of the EIA Regulations. Appendix 2 provides that a Scoping Report must “motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location”.</p> <p>2.2.3 Yet, the Draft Scoping Report provides no detail regarding how the Applicant intends on creating employment opportunities and how the employment of the “±15 to 20 labourers” will in fact benefit the local community.</p> <p>2.2.4 In respect of the “[O]ption of not implementing the activity (No-go Alternative)”, on page 46 of the Draft Scoping Report, Greenmined states that –                      “If the no-go alternative is implemented the land in question cannot be prospected for kieselguhr, which may result in a loss of an economically viable natural resource that can be used in a variety of industries. <u>The no-go option will further entail a loss of employment opportunities, as well as socio-economic benefits and growth development opportunities.</u> Given the high level of unemployment and poverty in the Hay and Kuruman Magisterial Districts the loss of such opportunities is considered significant [our emphasis].”</p> <p>2.2.5 Without disclosing the anticipated economic, social and growth development opportunities of the project, it impossible to ascertain whether or not proceeding with the proposed Prospecting Operations is preferred over alternative uses of the properties.</p> <p>2.2.6 In the absence of the aforementioned details, the Applicant has simply failed to motivate the need and desirability of the proposed Prospecting Operations, as required in Appendix 2.</p> <p>2.2.7 Considering that the proposed Prospecting Operations and possible future Mining Operations are invasive in nature and will result in significant environmental impacts, the Draft Scoping Report must specify, in detail, that the actual anticipated socio-economic benefits, despite the potential environmental impacts, outweigh other possible land uses. This is particularly so considering KMR’s existing rights in respect of the Farm Devon. This is addressed in further detail below.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>2.3 Impact of the Applicant’s Prospecting Operations on KMR</p> <p>2.3.1 As indicated in paragraph 11.12 above, in accordance with the KMR Mining Right, KMR –</p> <p>2.3.1.1 intends to establish the Waste Dump on the Western side of the farm Devon;</p> <p>2.3.1.2 intends to conduct concurrent rehabilitation activities at the Devon pit located on the farm Devon;</p> <p>2.3.1.3 intends to expand mining operations to the orebody on the farm Devon;</p> <p>2.3.1.4 intends proceeding with underground mining on the farm Devon; and</p> <p>2.3.1.5 intends to develop infrastructure in respect of the proposed underground mining activities on the Eastern side of the farm Devon.</p> <p>2.3.2 On page 3 of the Draft Scoping Report, Greenmined states that – “[T]he proposed activity entails prospecting with bulk sampling. <u>Prospecting will be conducted using a combination of non-invasive and invasive activities. The invasive prospecting will include drilling and trenching.</u> The only other alternative would be to prospect the area without bulk sampling [our emphasis].”</p> <p>2.3.3 Greenmined goes further on page 4 of the Draft Scoping Report to state that – “[T]he Applicant proposes to use <u>air drills for RAB (rotary air blast) drilling and reverse circulation drilling and diamond drill rigs will be used for core drilling.</u> Geophysical equipment will be needed for ground electro-magnetic, magnetic and gravity surveys.</p> <p>The <u>bulk sampling trenches/pits will be dug by excavator,</u> upon which the loosened material will be moved by FEL to the crushing/milling plant. The material will be crushed, screened, and sized to stockpiles from where it will be transported off-site by trucks [our emphasis].”</p> <p>2.3.4 It is therefore clear that the proposed Prospecting Operations by the Applicant will directly impact on KMR’s existing and future operations on the Farm Devon.</p> <p>2.3.5 On page 40 of the Draft Scoping Report, Greenmined states that – “[D]ue to the nature of invasive prospecting activities, the location of drill holes and sampling sites can to a certain extent be moved to avoid structures and/or sensitive areas where possible.”</p> <p>2.3.6 Yet, Greenmined fails to provide I&amp;APs with any drill site coordinates in respect of the Prospecting Right Area. Considering that the Applicant’s EA Application Area relates to, inter alia, Portion 1 and the Remaining Extent of the Farm Devon, it is inevitable that the proposed drillholes will be located within the KMR Mining Right Area.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>2.3.7 In fact, on page 131 of the Draft Scoping Report, Greenmined states that the “preferred drilling, trenching and pitting locations will be determined following the outcome of phases 1 &amp; 2 and the mapping of geological survey data.” It is submitted that the DMRE cannot make an informed decision on the Applicant’s EA Application or the Prospecting Right Application if the proposed drill site coordinates are not provided to both the DMRE and I&amp;APs. The drill site coordinates cannot be determined subsequent to the granting of the EA Application to the Applicant.</p> <p>2.3.8 KMR, as an I&amp;AP, is entitled to all the information relating to the proposed Prospecting Operations by the Applicant, which includes KMR being provided with the exact coordinates at which the Applicant intends on conducting Prospecting Operations.</p> <p>2.3.9 It is self-evident that drilling activities cannot be permitted above the areas where KMR will be conducting (authorised) underground mining and / or in close proximity to the Waste Dump and KMR’s surface infrastructure. The health, safety and environmental impacts of any simultaneous operations must be considered by the Applicant in its EA Application. It appears that the Applicant has no intention of assessing these impacts.</p> <p>2.3.10 The failure by Greenmined and the Applicant to provide KMR with the necessary information relating to the intended prospecting activities by the Applicant, means that KMR cannot assess the potential impacts of the proposed Prospecting Operations and bulk sampling on KMR, both as the Holder of the KMR Mining Right and the owner of Portion 1 and the Remaining Extent of the Farm Devon.</p> <p>2.3.11 It is submitted by KMR that it would be impossible for KMR to conduct its intended future operations on the Farm Devon and the farm York in circumstances where the Applicant is conducting drilling and bulk sampling.</p> <p>2.4 Failure to apply for a Waste Management Licence in terms of the National Environmental Management: Waste Act, 29 of 2008, as amended (“NEM:WA”)</p> <p>2.4.1 On the cover page (page 13) of the Draft Scoping Report, Greenmined states that the EA Application is submitted by the Applicant in terms of NEMA and in terms of the provisions of NEM:WA. It is clear that Greenmined intends to submit the EA Application on behalf of the Applicant as an integrated environmental authorisation application.</p> <p>2.4.2 In terms of section 24L (1) of NEMA – “[A] competent authority empowered under Chapter 5 to issue an environmental authorisation and any other authority empowered under a specific environmental management Act may agree to issue an <u>integrated environmental authorisation</u> [our emphasis].”</p>				



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<p>2.4.3 Yet, despite referring to an integrated environmental authorisation on the cover page of the Draft Scoping Report, no further references are made to an integrated environmental authorisation application by Greenmined.</p> <p>2.4.4 In fact, on page 20 to 21 of the Draft Scoping Report in highlighting the “[L]isted and specified activities triggered by the proposed activities”, Greenmined fails to refer to which activities listed in the List of waste management activities that have, or are likely to have, a detrimental effect on the environment (GN 921 of 29 November 2013) (“List of Waste Management Activities”), will be triggered as a result of the proposed Prospecting Operations and bulk sampling by the Applicant.</p> <p>2.4.5 On page 26 of the Draft Scoping Report, Greenmined states that - “any available topsoil in the earmarked areas will be <u>stripped and stockpiled for the duration of the activities</u>. Topsoil removal will be restricted to the exact footprint of each prospecting site during the invasive phases of the activity. <u>The topsoil will be stockpiled at a designated signposted area to be replaced during the rehabilitation of the area</u> [our emphasis].”</p> <p>2.4.6 Further on page 45 of the Draft Scoping Report, Greenmined states that – “[T]he bulk sampling trenches/pits will be dug by excavator, upon which the loosened material will be moved by FEL to the crushing/milling plant. The material will be <u>crushed, screened, and sized to stockpiles from where it will be transported off-site by trucks</u> [our emphasis].</p> <p>2.4.7 In the context of NEM:WA, a residue stockpile is defined as “any debris, discard, tailings, slimes, screening, slurry, waste rock, foundry sand, beneficiation plant waste, ash or any other product derived from or incidental to a mining operation and which is stockpiled, stored or accumulated for potential re-use, or which is disposed of, by the holder of a mining right, mining permit, production right or an old order right [our emphasis]”.</p> <p>2.4.8 Considering the broad definition of residue stockpile, it is clear that the stockpiles referred to in the Draft Scoping Report will trigger the listed activity relating to the establishment of a residue stockpile referenced in NEM:WA and its relevant listing notice. KMR therefore submits that Greenmined and the Applicant are required to apply for a waste management licence and are required to do so simultaneously with the EA Application.</p> <p>2.5 Failure to apply for a water use licence (“WUL”) in terms of the National Water Act, 36 of 1998, as amended (“NWA”)</p> <p>2.5.1 On page 106 of the Draft Scoping Report, Greenmined states as follows – “[A] hydrologist will be contracted to undertake a desktop Freshwater Assessment (wetland and aquatic) of the study area during the EIA process. The scope of work includes a desktop based investigation of the watercourses and wetlands within the study area supported by a site verification visit...The report will be compiled in accordance with the requirements in the latest NEMA Minimum Requirements and Protocol for Specialist Aquatic Biodiversity Impact Assessment as contained in the “Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes of Section 45 (a) and</p>				



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<p>(h) of the National Environmental Management Act, 1998, when applying for Environmental Authorization”, contained in Government Gazette No. 43855 (30 October 2020) and the requirements of the <u>Department of Water &amp; Sanitation for Water Use Licensing, as outlined in the ‘Regulations Regarding the Procedural Requirements for Water Use License Applications and Appeals’ contained in the Government Gazette No. 40713 of 24 March 2017 [our emphasis].”</u></p>				
<p>2.5.2 It is further stated on page 124 of the Draft Scoping Report that – “[S]hould a water use authorisation be applicable to the project, the PR Holder must always adhere to the conditions thereof.”</p>				
<p>2.5.3 Significantly, in paragraph 2(b) of the Acceptance Letter (attached hereto as Annexure “H”), the Regional Manager directs the Applicant to “[L]odge an application in terms of the National Water Act No.36 of 1998 with the Department of Water Affairs with immediate effect”. Despite being directed to apply for a WUL in terms of the NWA “with immediate effect”, KMR has not been notified of any such WUL application.</p>				
<p>2.5.4 On page 30 of the Draft Scoping Report states that – “[T]he drilling operation requires ±1 000 l of water day while the bulk sampling activities will necessitate ±10 000 l/day. Water will also be used for dust suppression at the prospecting sites and access roads. <u>Potable water will daily be transported to site by the employees, while the process water will be bought from a local sources (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s) [our emphasis].”</u></p>				
<p>2.5.5 The Draft Scoping Report fails to specify –</p>				
<p>2.5.5.1 which local “source” the Applicant intends to make use of; and</p>				
<p>2.5.5.2 if the local source is able to meet the water quality and quantity required by the Applicant.</p>				
<p>3 Conclusion</p>				
<p>3.1 It is evident from the comments in paragraph Error! Reference source not found. That the Applicant’s EA Application and the Draft Scoping Report are flawed due to a failure to comply with the EIA Regulations and to disclose critical information to I&amp;APs. It is submitted by KMR that the Draft Scoping Report should be rejected by the DMRE.</p>				
<p>3.2 As provided in regulation 44 of the EIA Regulations, these comments must be recorded in the reports and plans to be submitted to the competent authority pursuant to the EA Application.</p>				



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<p>3.3 If the Draft Scoping Report is accepted by the DMRE (which decision would, in KMR’s view, be unlawful), KMR reserves the right to challenge such decision and to comment on any environmental impact assessment report and environmental management programme relating to the EA Application.”</p>				
<p>Greenmined responded (26 March 2024) to the comments received from Malan Scholes Incorporated as follows:</p> <p>“Greenmined herewith acknowledge receipt of your correspondence dated 25 March 2024 on behalf of KMR regarding the prospecting right application submitted by K2022641005 (South Africa) (Pty) Ltd over various properties in the Hay and Kuruman Districts. We thank you for taking part in the public participation process and the comments submitted on the draft scoping report (DSR).</p> <p>We take note of your concerns and incorporated the comments into the Final Scoping Report that will be submitted to the Department of Mineral Resources and Energy (DMRE) for consideration. All comments/objections will be discussed with the Applicant, and specialists of the project team for their perusal and input. The comments/objections will further be assessed and responded to in the Draft Environmental Impact Assessment Report. All comments, concerns and/or objections received as part of the public participation process will be listed in the EIA documents to be submitted to the DMRE for consideration.”</p>				
<p>Additional response to the above-mentioned comments of Malan Scholes Incorporated that appeared in the FSR:</p> <p><i>Paragraph 2.1.1 – 2.1.5 Premature submission of the EA Application:</i></p> <p>Since the One Environmental System came into effect on 08 December 2014, the Ministers of the Mineral Resources and Energy, Environmental Affairs, and Water agreed to streamline the environmental approvals, monitoring, and enforcement for mining related applications. A key feature of the OES is that the Minister of Mineral Resources is the competent authority under NEMA for the issuing of EAs to authorise listed activities that is directly related to a) prospecting or exploration of a mineral; or b) extraction and primary processing of a mineral. Subsequently, the DMRE requires all applicants to submit the EA Application simultaneously with the Prospecting/Mining Right Application on the departmental online platform known as SAMRAD. Prospecting/Mining Right applications that are not accompanied by an EA Application are deemed incomplete. Therefore, in terms of the DMRE requirements, there is no grounds for the claim that the EA Application was submitted prematurely, and or wrongfully accepted by the DMRE.</p> <p><i>Paragraph 2.2.1 – 2.2.7 Socio-economic Impacts and Benefits; and Paragraph 2.3.1 – 2.3.11 Impact on the Applicant’s Prospecting Operations on KMR:</i></p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>To give meaningful response the results of the specialist studies are needed and therefore all inputs received during the public participation process will be assessed and/or responded to in the DEIAR. The aim of the scoping report is to identify the aspects to be evaluated in the assessment phase. The aim of the EIAR, in contrast, is to determine the nature, significance, consequence, extent, duration, and probability of the impacts occurring to inform identified preferred alternatives, and the degree to which these impacts can be reversed, avoided, managed, or mitigated.</p> <p>As mentioned earlier, should this application be successful, and the invasive prospecting commence, the Applicant will engage the landowners of the PR footprint regarding technical arrangements for the co-existence of the applicable entities on the same land. These negotiations will in particular consider the mining operations on the farms Devon No 277, Botha No 313, and Bermolli No 583 owned by mining companies.</p> <p><i>Paragraph 2.4.1 – 2.4.8 Failure to apply for a Waste Management Licence in terms of the NEM:WA:</i></p> <p>Page 14 of the Scoping Report (DSR &amp; FSR) notes that: <i>“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 permit <u>are submitted in the exact format of and provide all the information required in terms of this template.</u> 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 requirements of the Regulation and will lead to the Environmental Authorisation being refused.”</i></p> <p>Considering this, the Scoping Report format is prescribed by the DMRE and may not be altered by the EAP. The cover page (page 13) referred to by Malan Scholes Incorporated is part of the prescribed DMRE scoping report format for applications in terms of the NEMA, and/or NEM:WA in respect of listed activities that have been triggered in terms of the MPRDA. The proposed prospecting right application does not trigger listed activities in terms of the NEM:WA nor is there a need for an integrated environmental authorisation and therefore the EA Application did not consider such listed activities.</p> <p><i>Paragraph 2.5.1 – 2.5.5.2 Failure to apply for a water use licence in terms of the NWA:</i></p>				



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<p>Presently it is not expected that the proposed prospecting activities will trigger listed activities in terms of the NWA should the mitigation measures, buffer zones and recommendations of the specialists (to be incorporated into the DEIAR) be implemented. The mitigation measures of the DEIAR will elaborate on the water use of the proposed activities to ensure compliance of the project with the relevant legislation.</p>				
<p>On 26 March 2024 Malan Scholes Incorporated notified Greenmined that KMR intends to lodge an appeal to the Director-General of the DMRE as well as the Regional Manager of the DMRE-NC in accordance with the provisions of section 96 of the MPRDA as read with regulation 94 of the regulations promulgated under the MPRDA (as amended) against the acceptance of the Applicant's prospecting right application. Said appeal was submitted to the relevant parties on the same day.</p>				
<p>On 01 July 2024 Greenmined informed Malan Scholes Incorporated and KMR that following a remote surveying exercise it was decided that the Remaining Extent of the farm Devon No 277 will be excluded from any prospecting and/or bulk sampling as this farm did not show any economically viability or quality of the mineral under application (kieselguhr/diatomite). It was noted that this decision will be incorporated and discussed in the draft environmental impact assessment report (DEIAR) that will be available for perusal.</p> <p>Additional response to the above comments received from Malan Scholes Incorporated (on the DSR) upon compilation of the DEIAR;</p> <p><u>Paragraph 2.2 &amp; 2.3:</u></p> <p>As stipulated in <i>Part A(1)(g)(i) Details of the development footprint alternatives considered - c) Design and Layout of the Activity</i>, although potential target areas were identified on the farms Devon No 277 and Botha No 313, Devon No 277 (including all relevant portions and remainders) was subsequently excluded from the prospecting programme and Botha No 313 from the invasive prospecting and/or bulk sampling programme, thereby removing the potential impact that the proposed activities may have on the KMR operations.</p> <p>Also refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(f) Need and desirability of the proposed activities.</i></li> <li>◆ <i>Part A(1)(g)(iv)(1)(a) Type of environment affected by the proposed activity – 11 Socio-Economic Environment.</i></li> <li>◆ <i>Part A(1)(u)(i)(1) Impact on socio-economic conditions of any directly affected person.</i></li> </ul>				





Interested and Affected Parties	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	
<p><u>Paragraph 2.5:</u></p> <p>Refer to the following sections (amongst others) where the possibility for a water use authorisation are discussed:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(e) Policy and Legislative Context.</i></li> <li>◆ <i>Part A(1)(g)(iv)(c) Description of specific environmental features and infrastructure on the site - Site Specific Hydrology.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk.</i></li> <li>◆ <i>Part A(1)(j) Summary of specialist reports.</i></li> <li>◆ <i>Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment.</i></li> <li>◆ <i>Part B(1)(d)(viii) Has a water use license been applied for?</i></li> </ul>					
<p>On 10 September 2024, DMRE Legal Services (National) informed the Applicant that the application in terms of Section 96(2) of the MPRDA by KMR was granted and therefore subsequently suspends the decision of the DMRE-NC to accept the prospecting right application. Following discussions with the national and regional DMRE offices, the Applicant lodged its own Section 96 appeal against the decision of the DMRE (National) to suspend the acceptance letter on the basis that the farm Devon No 277 will be omitted from the prospecting right application. This application is pending with the DMRE.</p> <p>The proposal (to omit the said farm) was accordingly incorporated into this document, specifically in <i>Part A(1)(g)(i) Details of the development footprint alternatives considered.</i> Following discussions with the DMRE-NC (competent authority) it was confirmed that the public participation process can continue while the Applicant's Section 96 application is being considered by the DMRE (National).</p>					
<p>Transnet Ltd</p> <ul style="list-style-type: none"> <li>◆ Portion 1 of Devon 277</li> </ul>	<p>X</p>	<p>07/03/2024</p>	<p>Transnet submitted the comments, as listed below, on this project.</p>	<p>Greenmined acknowledged receipt of the comments on 07 March 2024 and responded as listed below.</p>	<p>Refer to Appendix I2 for proof of public participation as well as the below listed.</p>



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>Comments received from Transnet on 07 March 2024:</p> <p>“The proposed prospecting area shown in Figure 1 below crosses over Transnet’s cadastral boundary and therefore will affect Transnet. The red polygon indicates the Prospecting right application area numbered from A to N. The green lines denotes Transnet cadastral boundary. This is directly south of the Hotazel Station precinct and crosses the railway line over Land Asset No. KH0327 being PTN 1 of the farm Devon No 277, Admin District Kuruman in the Joe Morolong Municipal area. The dark blue line denotes a pipeline servitude 4 km in length that requires confirmation by TFR, whether still in use or not.</p> <p>We hereby wish to draw the attention of the applicant to Section 48(1) of the Minerals and Petroleum Resources Development Act, 2002 which stipulates as follows:</p> <p>“48(1) Subject to section 20 of the National Parks Act, 1976 (Act No 57 of 1976), and subsection (2), no reconnaissance permission, prospecting right, mining right or mining permit may be issued in respect of-</p> <p>(a) land comprising a residential area;</p> <p>(b) any public road, railway, or cemetery;</p> <p>(c) any land being used for public or government purposes or reserved in terms of any other law; or</p> <p>(d) areas identified by the Minister by notice in the Gazette in terms of section 49.”</p> <p>Please note that under no circumstances will or do Transnet SOC permit, grant permission or consent to any prospecting or mining activities on its properties. As far as the adjacent properties to the railway line is concerned, your attention is drawn to Regulation 17(6)(a) of the Mine Health and Safety Act, 1996 which determines that no mining operations may be carried out under or within a horizontal distance of 100 m from buildings, roads, railways, reserves etcetera.</p>				

<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
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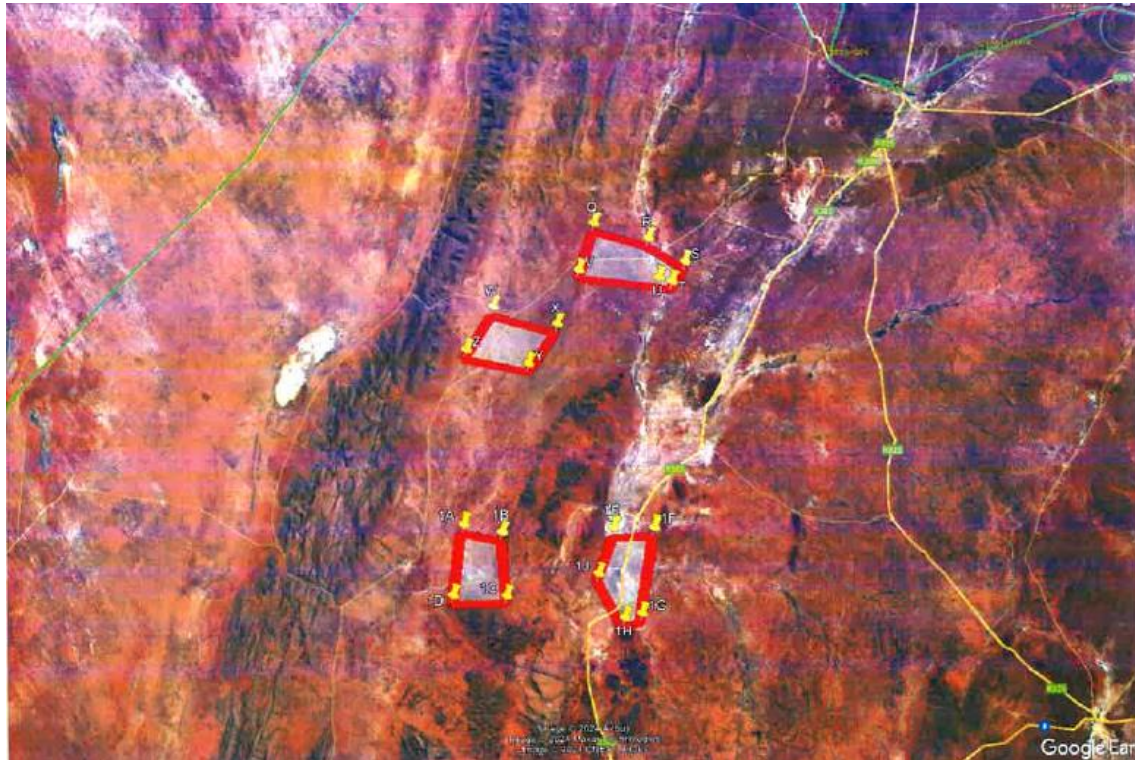
Figure 1:



The four red polygons below in Figure 2 denotes a further 4 proposed protecting areas. These 4 proposed prospecting areas are  $\pm 25.5$  km's south of Postmasburg station and  $\pm 28$  km's east of the Sishen to Saldanha ORE line and will thus not affect Transnet.

<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
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Figure 2:





<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>Greenmined responded as follows on 13 March 2024 to the comments received from Transnet:</p> <p>“Thank you for your correspondence on the prospecting right (PR) application submitted by K2022641005 (South Africa) (Pty) Ltd over (amongst others) the farm Devon No 277. We do take note that no prospecting will be allowed within a horizontal distance of 100 m from the railway line and has also shared this with the Applicant.</p> <p>The Applicant confirmed that should the PR application be successful, they will declare/demarcate a no-go buffer zone of a 110 m around the railway line (crossing through Devon No 277) and that no prospecting will be done/allowed within this buffer area. This commitment will also be added to the Final Scoping Report to be submitted to the DMRE for approval, and should the FSR be approved, the commitment will also be incorporated into the Environmental Impact Assessment Report and Environmental Management Programme also to be approved by the DMRE.</p> <p>In short, should this prospecting right application be approved, we do confirm that no prospecting will occur within 110 m of the railway line crossing through Devon No 277.”</p> <p>Also refer to the following sections in the FSR regarding the commitment to declare/demarcate a no-go buffer zone of 110 m around the railway line:</p> <ul style="list-style-type: none"> <li>◆ Section 2(h)(i) <i>Details of all alternatives considered;</i></li> <li>◆ Section 2(h)(iv)(1)(c) <i>Description of specific environmental features and infrastructure on the site – Site Specific Existing Infrastructure;</i></li> <li>◆ Section 2(l) <i>The possible mitigation measures that could be applied and the level of risk – Railway Line Mitigation;</i></li> <li>◆ Section 2(o) <i>Statement motivating the preferred site;</i></li> <li>◆ Section 2(i) <i>Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</i></li> </ul>				
<p>On 01 July 2024 Greenmined informed Transnet that following a remote surveying exercise it was decided that Portion 1 of the farm Devon No 277 will be excluded from any prospecting and/or bulk sampling as this farm did not show any economically viability or quality of the mineral under application (kieselguhr/diatomite). It was noted that this decision will be incorporated and discussed in the draft environmental impact assessment report (DEIAR) that will be available for perusal.</p> <p>Considering the above the potential impact that prospecting may have had on the railway infrastructure has been removed.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
Mr PJ van der Byl Lambrechts & Me C Lambrechts  ♦ Portion 4 of Bermolli No 583	X	05/03/2024  Me Lambrechts registered as I&AP on the project.	Greenmined acknowledged receipt of the registration on 06 March 2024.	Refer to Appendix 12 for proof of public participation.
Sishen Iron Ore Company (Pty) Ltd (SIOC)  ♦ Portion 5 of Bermolli No 583	X	26/02/2024 & 25/03/2024  SIOC registered and submitted the following comments on the project.	Greenmined acknowledged receipt of the comments and registration on 27 February 2024.	Refer to Appendix 12 for proof of public participation as well as the below listed.
<p>Comments received from SIOC on 26 February 2024:</p> <p>“Please note that Sishen Iron Ore Company (SIOC) is an interested and affected party (“I&amp;AP”) K2022641005 in respect of the prospecting right/bulk sampling application submitted by (South Africa) (PTY) LTD with reference number NC 30/5/1/1/2/13826 PR.</p> <p>SIOC hereby requests that it be registered as an I&amp;AP as part of this application, with the following information:</p>				



Interested and Affected Parties	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
List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.				

<b>Name</b>	Izak Gous
<b>Organisation</b>	SIOC, Kolomela Mine
<b>Telephone</b>	0605016625
<b>Fax</b>	NA
<b>Cell</b>	0605016625
<b>Postal address</b>	Private Bag X3003
<b>Physical address</b>	21 Main Street Postmasburg
<b>Email</b>	Izak.gous@angloamerican.com
<b>Preferred method of communication</b>	Email

Please provide information on the following aspects:

1. Ground water quantity and quality

- a. What water sources will be used to conduct the planned activities. What measures will be undertaken to monitor possible impacts (ground and surface water) and what mitigation measures will be implemented in impacted areas.
- b. What volume of water will be abstracted per locality.
- c. What measures will be implemented to ensure effective monitoring of water quality on site as well as on neighboring properties.

2. Air quality management

- a. What measures will be implemented to ensure dust are adequately monitored and effectively controlled?

3. Access road

- a. The additional traffic might detrimentally impact the condition of the R383 and subsequently impact road safety for other users.



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<p>4. Security and access control</p> <ul style="list-style-type: none"> <li>a. How will access to the site be managed?</li> <li>b. What measures will be put in place to ensure the safety and security of neighbouring landowners will not be compromised?</li> </ul> <p>5. Veld fire management</p> <ul style="list-style-type: none"> <li>a. What measures will be put in place to prevent fires, and if a fire does occur, will a competent team be available to respond to the fire.</li> </ul> <p>6. Waste management</p> <ul style="list-style-type: none"> <li>a. What measures will be implemented to ensure sound waste management practices.</li> </ul> <p>7. Hygiene</p> <ul style="list-style-type: none"> <li>a. Will sanitation facilities be made available to the workforce. How will this process be managed.</li> </ul> <p>8. Physical environment</p> <ul style="list-style-type: none"> <li>a. What will be done to minimize the physical footprint of the planned project. This refers to access roads, drilling sites and laydown areas among others.</li> <li>b. What measures will be implemented to ensure all nationally and provincially protected fauna and flora species are correctly identified and protected during the project.</li> <li>c. Indicate where maintenance on equipment will be done during this project.</li> <li>d. How will an environmental emergency such as hydrocarbon contamination be address.</li> <li>e. Describe the planned refuelling process.</li> </ul> <p>In addition to the above, please provide us with any other applicable information to the project. Please also confirm that SIOC has now been registered as an I&amp;AP in accordance with the information set out in the table above.”</p>				





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<p>Greenmined further responded (04 March 2024) to SIOC’s comments as listed below:</p> <p>“Thank you for taking part in the public participation process of this prospecting right application submitted by K2022641005 (South Africa) (Pty) Ltd with reference number NC 30/5/1/1/2/13826 PR.</p> <p>We do acknowledge receipt of your comments that will also be incorporated into the Final Scoping Report, that will be submitted for approval to the Department of Mineral Resources and Energy (DMRE). Due to the technical nature of the comments it will be assessed and responded to in the Draft Environmental Impact Assessment Report (DEIAR), which report will follow should the DMRE approve the final Scoping Report. The DEIAR will furthermore incorporate the applicable specialist studies that will also consider the comments received from SIOC. As registered, I&amp;AP, SIOC will be invited to comment on the DEIAR once available.”</p>				
<p>Additional comments received from CDH on behalf of SIOC on 25 March 2024:</p> <p>“1 We act on behalf and on the instructions of Sishen Iron Ore Company ("SIOC/Client"), a private company with limited liability, registered as such in accordance with the laws of the Republic of South Africa, with registration number 2000/011085/07.</p> <p>2 SIOC operates the Kolomela Mine in terms of a mining right, with DMRE reference number NC 30/5/1/2/2/069 MR ("Kolomela Mining Right"), consisting of the sole and exclusive right to mine iron ore on and under a number of properties. SIOC is also the surface rights holder of the following properties –</p> <p>2.1 Portion 5 of Farm Bermolli 583;                      2.2 Remaining Extent of Farm No 542,                      2.3 Portion 2 of Farm No 542; and                      2.4 Portion 3 of Farm No 543</p> <p>3 The Applicant applied for a prospecting right with bulk sampling for kieselguhr over various properties ("PR Application"). In terms of section 16(1) of the Mineral and Petroleum Resources Development Act 28 of 2002 ("MPRDA"), the Applicant would need to obtain the necessary environmental authorisations, approvals, licences and/or consents as</p>				



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<p>prescribed under the National Environmental Management Act 107 of 1998 ("NEMA") and the Environmental Impact Assessment Regulations, 2014, as amended ("EIA Regulations"), prior to commencement of any prospecting related activities. Given this, the Applicant attended to the submission of the environmental authorisation application ("EA Application").</p> <p>4 SIOC has obtained various biodiversity permits and licences in terms of the Northern Cape Nature Conservation Act 9 of 2009 and National Forest Act 84 of 1998 since the commencement of operations at the Kolomela Mine in 2011.</p> <p>5 The Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform ("DAERL") informed SIOC in 2014 that the cumulative impacts of the various biodiversity permits will be taken into account and may require a biodiversity off-set in relation to the mining activities associated with the Kolomela Mining Right. In 2019 DAERL confirmed that a biodiversity off-set will need to be established by SIOC and as part of this obligation, SIOC has engaged extensively with DAERL and Northern Cape Protected Area Expansion Review Committee ("NCPAERC"), which engagement has included the acceptance of several properties as being suitable for biodiversity offset purposes given its current ecological sensitivity ("Kolomela Biodiversity Off-Set Areas"). The acceptance of the Kolomela Biodiversity Off-Set Areas is attached hereto as Annexure "A".</p> <p>6 The Kolomela Biodiversity Off-Set Areas include Portion 4 and 5 of Farm Bermolli 583. Based on correspondence received from the relevant authorities, once the required administrative processes have been completed the proposed Kolomela Biodiversity Off-Set Areas are set to be formally declared as a nature reserve under the National Environmental Management Protected Areas Act 57 of 2003.</p> <p>7 We also thought it pertinent to highlight that the Department of Forest, Fisheries and Environment ("DFFE") as well as the DAERL are both in agreement that, considering the pending declaration of the Kolomela Biodiversity Off-Set Areas as a nature reserve, no mining or prospecting related activities are allowed to be conducted over these properties.</p> <p>8 The DFFE and DAERL recently objected against the grant of an environmental authorisation for a mining right application in relation to Portion 5 of the Farm Bermolli and another property set to be included within the proposed Kolomela Biodiversity Off-Set Areas. Although the objections were made in relation to a mining right application, the same stance will be applicable to this prospecting right application as prospecting is a precursor to mining. The objections by the DFFE and DAERL are attached hereto as Annexure "B" and Annexure "C" respectively.</p>				



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9 We attended to the review of the Draft Scoping Report and have the following comments, questions and queries in relation to the report. We would be grateful to receive Greenminded's responses to each of the queries as indicated in the table below –				

Item	Query	Greenmined Response
1.	<p>Given the identified Kolomela Biodiversity Off-Set Areas and the current position of the DFFE and DAERL against any mining or prospecting in relation to the Kolomela Biodiversity Off-Set Areas, we kindly request that Portion 4 of the Farm Bermolli and Portion 5 of the Farm Bermolli be excluded from this EA Application as well as the PR Application.</p>	
2.	<p>We note that the No-Go Alternative as discussed on pages 5 and 46 of the Draft Scoping Report fails to make any mention of the proposed Kolomela Biodiversity Off-Set Areas planned over Portion 4 and Portion 5 of the Farm Bermolli.</p> <p>We recommend that the No-Go Alternative should include that a nature reserve is set to be established on Portion 4 and Portion 5 of the Farm Bermolli. The current No-Go Alternative is misleading and fails to provide all the required information to the competent authority.</p>	
3.	<p>We note that pages 5 and 46 of the Draft Scoping Report provide that an advertisement is set to be published in the Noorkaap Bulletin. We further note that Appendix 5 provides an example of the advertisement.</p> <p>The Draft Scoping Report as well as the annexures thereto fail to provide any proof of publication of the advertisement. We kindly request to be provided with proof of publication of said advertisement.</p>	



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
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<p>4.</p>	<p>We note that page 31 of the Draft Scoping Report provides that 4 x 30 ton flatbed trucks will be required to transport prospecting and bulk sampling material.</p> <p>Given the size of the trucks, will the expansion of the existing roads be required and has this been considered as a potential listed activity under the EIA Regulations?</p>	
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<b>Item</b>	<b>Query</b>	<b>Greenmined Response</b>
<p>5.</p>	<p>We note that the Draft Scoping Report includes various references as well as figures captured from the DFFE Screening Report.</p> <p>The Draft Scoping Report as well as the annexures thereto made available during the public participation process fail to include the DFFE Screening Report. We kindly request to be provided with a copy of the DFFE Screening Report.</p>	

10 Thank you for the opportunity to comment on the Draft Scoping Report and we look forward to your responses to our queries.

11 Should you have any further queries, please do not hesitate to contact us.”



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>Greenmined responded, on 26 March 2024, as listed below to the comments received from CDH on 25 March 2024:</p> <p>“Greenmined herewith acknowledge receipt of your correspondence dated 25 March 2024 on behalf of SIOC regarding the prospecting right application submitted by K2022641005 (South Africa) (Pty) Ltd over various properties in the Hay and Kuruman Districts. We thank you for the valuable information provided that has also been shared with the Applicant.</p> <p>Your correspondence was incorporated into the final Scoping Report that must be submitted to the DMRE for consideration by 29 March 2024. As a result of the strict tight timeframes on the scoping phase of an environmental impact assessment (EIA), your correspondence cannot be answered in detail in this phase of the EIA, however the following sections of the final Scoping Report were amended to allow for the assessment of your comments should the DMRE approve the scoping report and allow the EIA process to continue:</p> <ul style="list-style-type: none"> <li>◆ Section 2(f) Need and desirability of the proposed activities;</li> <li>◆ Section 2(h)(i)(c) Design and layout of the activity;</li> <li>◆ Section 2(h)(iv)(1)(b) Description of the current land uses;</li> <li>◆ Section 2(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna;</li> <li>◆ Section 2(i) Impacts Identified;</li> <li>◆ Section 3(i) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored;</li> <li>◆ Section 3(k) Other matters required in terms of section 24(4)(a) and (b) of the Act.</li> </ul> <p>Please take note that all your comments and enquires will be assessed and responded to in the Draft Environmental Impact Assessment Report (DEIAR) that will also incorporate specialist studies and recommendations.</p> <p>As you are aware SIOC is a registered I&amp;AP on this project to which the contact details of CDH were added. Henceforth we will keep both SIOC and CDH informed on the progress of the EIA as well as afford you an opportunity to comment on the DEIAR should the DMRE approve the final Scoping Report.</p> <p>For ease of reference please find attached proof of the advertisements that appeared in the Noordkaap Bulletin.</p>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>As Portion 4 and 5 of Bermolli No 583 has not yet been declared a nature reserve as part of the Kolomela Biodiversity Offset Area we advise that you take note of the consultation requirements stipulated in Sections 32 and 33 of the Protected Areas Act, 2003 (Act No 57 of 2003) attached hereto for ease of reference.”</p> <p>Refer to Appendix 5.2 for the full letter and associated appendices.</p>				
<p>Further response to the comments received from CDH on behalf of SIOC:</p> <ol style="list-style-type: none"> <li> <p><i>Given the identified Kolomela Biodiversity Off-Set Areas and the current position of the DFFE and DAERL against any mining or prospecting in relation to the Kolomela Biodiversity Off-Set Areas, we kindly request that Portion 4 of the Farm Bermolli and Portion 5 of the Farm Bermolli be excluded from this EA Application as well as the PR Application.</i></p> <p>It was noted that both the DFFE and DAERL letters attached to the correspondence received from CDH only mention Portion 5 of Bermolli No 583 amongst the other properties listed in the letters. Portion 4 of Bermolli No 583 is not mentioned in the said letters. It is also clear from the correspondence received from CDH that Portion 5 (and Portion 4) of Bermolli No 583 is still “candidate” offset receiving areas and that these areas has not yet been declared as biodiversity offset area/nature reserve. However, the matter will be considered during the EIA process and design/layout alternatives will be contemplated. The outcome will be discussed in the DEIAR.</p> </li> <li> <p><i>We note that the No-Go Alternative as discussed on pages 5 and 46 of the Draft Scoping Report fails to make any mention of the proposed Kolomela Biodiversity Off-Set Areas planned over Portion 4 and Portion 5 of the Farm Bermolli. We recommend that the No-Go Alternative should include that a nature reserve is set to be established on Portion 4 and Portion 5 of the Farm Bermolli. The current No-Go Alternative is misleading and fails to provide all the required information to the competent authority.</i></p> <p>The proposed declaration of Portion 4 and 5 of Bermolli No 583 as part of the Kolomela Biodiversity Offset Area was added to the final scoping report under the following sections:</p> <ul style="list-style-type: none"> <li>◆ <i>Section 2(f) Need and desirability of the proposed activities;</i></li> <li>◆ <i>Section 2(h)(i)(c) Design and layout of the activity;</i></li> <li>◆ <i>Section 2(h)(iv)(1)(b) Description of the current land uses;</i></li> <li>◆ <i>Section 2(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna;</i></li> <li>◆ <i>Section 2(i) Impacts Identified;</i></li> </ul> </li> </ol>				



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<p>                             ♦ <i>Section 3(i) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored;</i>                              ♦ <i>Section 3(k) Other matters required in terms of section 24(4)(a) and (b) of the Act.</i> </p> <p>, and as mentioned earlier design/layout alternatives to possibly accommodate an offset area will be contemplated and discussed in the DEIAR.</p> <p>3. <i>We note that pages 5 and 46 of the Draft Scoping Report provide that an advertisement is set to be published in the Noorkaap Bulletin. We further note that Appendix 5 provides an example of the advertisement. The Draft Scoping Report as well as the annexures thereto fail to provide any proof of publication of the advertisement. We kindly request to be provided with proof of publication of said advertisement.</i></p> <p>Please refer to Appendix 5.2 for proof of the publication of the advertisements in the Noordkaap Bulletin.</p> <p>4. <i>We note that page 31 of the Draft Scoping Report provides that 4 x 30 ton flatbed trucks will be required to transport prospecting and bulk sampling material. Given the size of the trucks, will the expansion of the existing roads be required and has this been considered as a potential listed activity under the EIA Regulations?</i></p> <p>As mentioned under <i>Section 2(d)(ii) Description of the activities to be undertaken – Access Roads</i>, the farm roads will be upgraded where necessary to allow the comfortable movement of the prospecting machinery/vehicles. Where needed jeep-tracks will be opened from the main farm road to the specific prospecting sites in agreement with the landowners. These tracks will be temporary and will be rehabilitated once prospecting ceases and if the landowner do not wish the track to remain. The jeep-track route will as far as possible avoid sensitive vegetated areas (to be identified by an ecologist), watercourses, and cultivated area and must be approved by the ECO prior to use. Presently the maximum width of a track is expected to be ±5 m. Further to this, the upgrade of the roads/tracks is provided for in Listing Notice 2 Activity 19 (as amended).</p> <p>5. <i>We note that the Draft Scoping Report includes various references as well as figures captured from the DFFE Screening Report. The Draft Scoping Report as well as the annexures thereto made available during the public participation process fail to include the DFFE Screening Report. We kindly request to be provided with a copy of the DFFE Screening Report.</i></p> <p>As confirmed by CDH the findings of the DFFE Screening Report were available in the DSR, as it also forms part of the FSR. The DFFE Screening Report was also submitted to the DMRE in support of the Environmental Authorisation Application. The report does not form part of the DSR/FSR as it is not considered a public document. However, CDH</p>				





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<p>would be able to obtain an independent report from the DFFE screening tool (public) website should the application footprint, specified in this report and the attached maps, be mapped.</p>				
<p>Additional response to the comments received from Mr Izak Gous on behalf of SIOC Kolomela Mine upon compilation of the DEIAR;</p> <p><u>Paragraph 1:</u></p> <p>The new drilling equipment to be used does not require water, while the bulk sampling activities will necessitate ±10 000 l/day. Water will be used for dust suppression at the prospecting sites and access roads. Potable water will daily be transported to site by the employees, while the process water will be bought from registered local sources (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s).</p> <p>Once the final target areas were identified the PR Holder will identify the available water sources within the proximity. As water will be obtained from registered sources the PR Holder will have to comply with the standards/requirements of the source's authorisation. Water tally sheets will be maintained to monitor water use quantity and baseline water quality results will be obtained prior to use.</p> <p>Also refer to the following sections where the possible impact on water sources are discussed and mitigation measures proposed:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(iv)(c) Description of specific environmental features and infrastructure on the site - Site Specific Hydrology.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk.</i></li> <li>◆ <i>Part A(1)(j) Summary of specialist reports.</i></li> <li>◆ <i>Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment.</i></li> <li>◆ <i>Part B(1)(d)(viii) Has a water use license been applied for?</i></li> </ul> <p><u>Paragraph 2:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Air Quality and Noise Ambiance.</i></li> </ul>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p><u>Paragraph 3:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(d)(ii) Description of the activities to be undertaken – Access Roads.</i></li> <li>◆ <i>Part A(1)(d)(ii) Description of the activities to be undertaken – Traffic Requirements.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Access Road Mitigation.</i></li> </ul> <p><u>Paragraph 4:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Management of safety and security risk posed by prospecting activities to residents</i></li> <li>◆ <i>Part A(1)(u)(i(1) Impact on the socio-economic conditions of any directly affected person.</i></li> </ul> <p><u>Paragraph 5:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Fire Risk Management.</i></li> </ul> <p><u>Paragraph 6 &amp; 7:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(d)(ii) Description of the activities to be undertaken – Waste Handling.</i></li> <li>◆ <i>Part A(1)(d)(ii) Description of the activities to be undertaken – Servicing and Maintenance.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Waste Management.</i></li> </ul>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p><u>Paragraph 8:</u></p> <p>Refer to:</p> <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(g)(i) Details of the development footprint alternatives considered.</i></li> <li>◆ <i>Part A(1)(g)(iv)(c) Description of specific environmental features and infrastructure on the site - Site Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.</i></li> <li>◆ <i>Part A(1)(m) Final proposed alternatives.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Waste Management.</i></li> </ul>				
<p>Additional response to the comments received from CDH on behalf of SIOC Kolomela Mine upon compilation of the DEIAR;</p> <p><u>Item 1 &amp; 2:</u></p> <p>As noted in <i>Part A (1)(g)(i) Details of the development footprint alternatives considered - c) Design and layout of the activity</i>, no target areas were identified on Portion 4 of Bermolli No 583, and therefore the Applicant will not conduct invasive prospecting activities on this portion of the farm. Remote sensing identified a “High” mineral potential on ±430 ha of Bermolli No 583/5, and the Applicant proposes to the following regarding Bermolli No 583/5:</p> <ul style="list-style-type: none"> <li>◆ Should the PR application be successful and phases 1 and 2 identify Portion 5 of Bermolli No 583 for sampling, the hydrologist and ecologist will revisit the target area and identify the least sensitive part of the proposed ±430 ha area where invasive prospecting will have the lowest impact. Sampling will remain &gt;100 m from all confirmed active watercourses.</li> <li>◆ The site camp will be established on a previously disturbed/altered area.</li> <li>◆ Bulk sampling will be restricted to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s identified by the specialists.</li> <li>◆ The Applicant will enter discussions with the landowner prior to prospecting and <u>should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.</u></li> <li>◆ A chance find protocol will be implemented to safeguard against impacts of archaeological and/or palaeontological concern.</li> <li>◆ The area will be backfilled once sampling concluded and rehabilitated to a state to be determined and approved by the hydrologist.</li> </ul>				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<p>The no-go option regarding invasive prospecting will be applied to Portion 4 of Bermolli No 583 as mentioned in <i>Part A(1)(g)(i) Details of the development footprint alternatives considered - f) Option of not implementing the activity (No-go Alternative)</i>.</p> <p><u>Item 3:</u></p> <p>Please refer to Appendix I2 for proof of the publication process thus far conducted.</p> <p><u>Item 4:</u></p> <p>As mentioned in <i>Part A(1)(d)(ii) Description of the activities to be undertaken – Access Roads</i>, the farm roads will be upgraded where necessary to allow the comfortable movement of the prospecting machinery/vehicles. Where needed jeep-tracks will be opened from the main farm road to the specific prospecting sites in agreement with the landowners. These tracks will be temporary and will be rehabilitated once prospecting ceases and if the landowner do not wish the track to remain. The jeep-track route will as far as possible avoid sensitive vegetated areas, watercourses, and cultivated area and must be approved by the ECO prior to use. Presently the maximum width of a track is expected to be ±5 m. Further to this, the upgrade of the roads/tracks is provided for in GNR 983 of 2014 (as amended) Activity 20.</p>				
Me VMH Sieberhagen  ♦ Remaining Extent of Engelsdraai No 221	X	Apart from telephonic discussions with this landowner, Greenmined did not yet receive any written correspondence regarding the project. However, as landowner, Me Sieberhagen is considered a registered I&AP for both the Remaining Extent and Portion 1 of Engelsdraai No 221 that will be kept informed throughout the EIA process.		
Van der Byl Boerdery (Pty) Ltd  ♦ Portion 1 of Engelsdraai No 221	X			
Me EGA Maritz	X			

<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
♦ Remaining Extent of Witdraai No 204		Greenmined did not receive formal correspondence from the contact person Mr Maritz. However, as landowner, Mr Maritz is considered a registered I&AP for both the Remaining Extent and Portion 1 of Witdraai No 204 that will be kept informed throughout the EIA process.		
KG Mining (Pty) Ltd  ♦ Portion 1 of Witdraai No 204	X			
Abraham Willem Adriaan van Wyk Testamentêre Trust & Me TJ van Wyk  ♦ Remaining Extent of Vaalwater No 84 ♦ Farm No 570 (Zaai Plaats)	X	Greenmined did not receive formal correspondence from the contact person Mr Viljoen. However, as landowner, Mr Viljoen is considered a registered I&AP for the Remaining Extent, Portion 1, and Portion 2 of Vaalwater No 84 and Farm No 570 (Zaai Plaats) that will be kept informed throughout the EIA process.		
Me M and Mr PJ van Biljon  ♦ Portion 1 of Vaalwater No 84 ♦ Portion 2 of Vaalwater No 84	X			
<b>Lawful occupiers/s of the land</b>	-			
-	-			



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>	
<b>Landowners or lawful occupiers on adjacent properties</b>	<b>X</b>	-	-	-	
J&B van Wyk Familie Trust ♦ Remaining Extent of Moodraai No 310	<b>X</b>	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Amari Manganese (Pty) Ltd care of ERG Management (South Africa) (Pty) Ltd ♦ Portion 1 of Kongoni No 311	<b>X</b>	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Assmang Ltd (Blackrock Mine Operations) ♦ Remaining Extent of Telele No 312	<b>X</b>	01/03/2024	Me C Vries registered Blackrock Mine Operations as an IAP on this project.	Greenmined acknowledged receipt of the registration on 04 March 2024.	Refer to Appendix I2 for proof of the public participation.
Mr GA Coetsee ♦ Remaining Extent of Roldraai No 333	<b>X</b>	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Me AS Anthonissen ♦ Remaining Extent of Perth No 276	<b>X</b>	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
United Manganese of Kalahari (Pty) Ltd ♦ Remaining Extent of Smartt No 314	X	Please refer to the UMK correspondence listed under <i>Landowner/s</i> earlier in this table.		
Saltrim Ranches (Pty) Ltd ♦ Remaining Extent of Middelplaats No 332	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Kudumane Manganese Resources (Pty) Ltd ♦ Portion 2 of York A No 279, ♦ Portion 11 of York A No 279, ♦ Portion 1 of Telele No 312	X	Please refer to the KMR correspondence listed under <i>Landowner/s</i> earlier in this table.		
Mr DH Fourie ♦ Remaining Extent of Annex Langdon No 278	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Mr JP Jansen ♦ Remaining Extent of York A No 279	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
DP World (formerly known as Imperial Logistics South Africa Group (Pty) Ltd)  ♦ Portion 13 of York A No 279	X	25/03/2024 & 26/03/2024  Mr W Pretorius asked confirmation whether his property (Portion 13 of York No 279) borders the proposed PR application area.  Upon confirmation that the said property borders the proposed application area, Mr Pretorius requested a full version of the DSR, and confirmed that DP World acquired Imperial Logistics South Africa Group (Pty) Ltd.	Greenmined responded on 26 March 2024 that the property does border the application area, and that Mr Pretorius was registered as I&AP on the project and will be kept informed throughout the EIA process.  Greenmined, supplied Mr Pretorius with a copy of the DSR as well as the link to the website where the full report and appendices can be accessed.	Refer to Appendix 12 for proof of the public participation process.
Transnet Ltd  ♦ Portion 1 of Perth No 276, ♦ Portion 3 of York A No 279	X	Please refer to the Transnet correspondence listed under <i>Landowner/s</i> earlier in this table.		
Mr CH Kotze  ♦ Remaining Extent of Farm No 231	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Kriel Boerdery Trust  ♦ Remaining Extent of Farm No 228, ♦ Portion 1 of Farm No 228	X			





<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
Mr HT Snijman & Hennie Tjaart Snijman Testamentêre Trust  ♦ Remaining Extent of Watervlak No 585, ♦ Portion 2 of Watervlak No 60	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Floradale Boerdery CC  ♦ Remaining Extent of Farm No 230	X			
Sishen Iron Ore Company (Pty) Ltd  ♦ Remaining Extent of Farm No 542, ♦ Portion 2 of Farm No 542, ♦ Portion 3 of Farm No 543	X	Please refer to the SIOC correspondence listed under <i>Landowner/s</i> earlier in this table.		
Mr TJ Snyman  ♦ Remaining Extent of Gras Vlake No 61, ♦ Remaining Extent of Farm No 223	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Me VMH Sieberhagen	X			



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>	
♦ Remaining Extent of Farm No 218		To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Van der Byl Boerdery (Pty) Ltd ♦ Portion 2 of Farm No 218	X				
Pieter Bredenkamp Trust ♦ Remaining Extent of Farm No 222	X				
Coeta-M Trust ♦ Remaining Extent of Farm No 224	X				
QCK Lezmin 4677 (Pty) Ltd ♦ Portion 3 of Gekonsolideerde Plaas No 210	X	07 March 2024	Mr Bredenkamp registered as I&AP on the project.	Greenmined confirmed Mr Bredenkamp's registration on 07 March 2024.	Refer to Appendix 12 for proof of the public participation process.
KG Mining (Pty) Ltd ♦ Portion 1 of Farm No 203	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Me EGA Maritz ♦ Portion 2 of Farm No 203	X				



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
Mr JH Coetzee  ♦ Remaining Extent of Paauwvontein No 209, ♦ Portion 1 of Gekonsolideerde Plaas No 210	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Mr MC Lambrechts  ♦ Remaining Extent of Farm No 200, ♦ Portion 1 of Farm 200, ♦ Remaining Extent of Farm No 201, ♦ Portion 1 of Farm No 201, ♦ Portion 1 of Farm No 202, ♦ Remaining Extent of Farm No 203, ♦ Remaining Extent of Oudemeideskloof No 205	X			
Mr AJC van Wyk  ♦ Remaining Extent of Cone No 82	X			
Me DGS Murray	X			

<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
♦ Remaining Extent of Zaai Plaats No 83				
Mr PK van Zyl  ♦ Remaining Extent of Kopje No 85	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Mr FP van der Schyff  ♦ Remaining Extent of Dell No 92, ♦ Remaining Extent of Range No 93	X			
Abraham Willem Adriaan Van Wyk Testamentêre Trust  ♦ Remaining Extent of Farm No 570 (Zaai Plaats)	X			
Mr JW van Niekerk  ♦ Remaining Extent of Matsap No 81, ♦ Remaining Extent of Farm No 79	X			



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
Oberholster Anna Gertruida B/E & Oberholster Anna Gertruida Trust  ♦ Bergenaars Pad No 225 ♦ Farm No 220	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Mr RJ Coetzee  ♦ Paardekloof No 219	X			
<b>Municipal councillor</b>	X	-		
Joe Morolong Local Municipality Ward 4	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Tsantsabane Local Municipality Ward 7	X			
Siyancuma Local Municipality Ward 1	X			
Siyancuma Local Municipality Ward 7	X			
<b>Municipality</b>	X	-		



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>	
Joe Morolong Local Municipality (JMLM)	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Tsantsabane Local Municipality (TLM)	X				
Siyancuma Local Municipality (SLM)	X				
<b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA, etc</b>	X	-	-	-	-
Department of Roads and Public Works	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
Department of Water and Sanitation	X	06/05/2024	Me Mudau confirmed on 06 May 2024 that a copy of the scoping report was received by DWS. It was further noted by Me Mudau that a water use authorisation for the prospecting activity is required for the product stockpiles, overburden stockpiles, water evaporation sump.	Greenmined confirmed receipt of the comments on 09 May 2024 and responded that the comments will be shared with the Applicant for his consideration and action once the non-invasive prospecting activities indicated	Refer to Appendix I2 for proof of public participation, as well as the below listed.



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>		<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
				the areas to be sampled (invasive prospecting).	
Also refer to following sections where this matter was discussed: <ul style="list-style-type: none"> <li>◆ <i>Part A(1)(e) Policy and Legislative Context.</i></li> <li>◆ <i>Part A(1)(g)(iv)(c) Description of specific environmental features and infrastructure on the site - Site Specific Hydrology.</i></li> <li>◆ <i>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk.</i></li> <li>◆ <i>Part A(1)(j) Summary of specialist reports.</i></li> <li>◆ <i>Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment.</i></li> <li>◆ <i>Part B(1)(d)(viii) Has a water use license been applied for?</i></li> </ul>					
Eskom	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.			
<b>Communities</b>	N/A	No communities border the prospecting area or were identified within 100 m from the site.			
<b>Dep. Land Affairs</b>	X	15/01/2024	The Commission on Restitution of Land Rights confirmed on 15 January 2024 that no land claims appears on their database in respect of the properties this application extends across.	Refer to Appendix 12 for proof of the public participation process.	
<b>Traditional Leaders</b>	N/A	No tribal land borders the prospecting area or were identified within 100 m from the site.			



<b>Interested and Affected Parties</b>  List the names of persons consulted in this column, and  Mark with an X where those who must be consulted were in fact consulted.	<b>Date Comments Received</b>	<b>Issues Raised</b>	<b>EAPs response to issues as mandated by the Applicant</b>	<b>Section and paragraph reference in this report where the issues and or response were incorporated</b>
<b>Dept. Environmental Affairs</b>	X	-		
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
<b>Other Competent Authorities affected</b>	-	-	-	-
Department of Agriculture, Land Reform and Rural Development	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
Department of Labour	X			
Department of Economic Development and Tourism	X	To date no comments were received. Any comments received on the DEIAR and draft EMPR will be incorporated into the final EIAR and EMPR.		
John Taolo Gaetsewe District Municipality (JTGDM)	X			





Interested and Affected Parties		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
List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.					
ZF Mgcawu District Municipality (ZFMDM)	X				
Pixley ka Seme District Municipality (PSDM)	X				
South African Heritage Resources Agency (SAHRA)	X				
<b><u>OTHER AFFECTED PARTIES</u></b>		-	-	-	-
<b><u>INTERESTED PARTIES</u></b>		-	-	-	-
Postmasburg Boerevereniging (Agri Postmasburg)	X		Mr A Williams was registered as I&AP on the project as he represents Agri Postmasburg.		

**iv) The Environmental attributes associated with the development footprint alternatives.**

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

**(1) Baseline Environment**

**(a) Type of environment affected by the proposed activity.**

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

This section describes the general biophysical-, cultural- and socio-economic environment as well as baseline conditions that may be affected by the proposed project.

**PHYSICAL ENVIRONMENT**

**1. CLIMATE**

**Kuruman Administrative District – Hotazel**

The long-term average annual rainfall of Hotazel is 336.4 mm of which the bulk is received from October – March. Temperatures vary from an average monthly maximum and minimum of 36.7 °C and 11°C in January to 23.2°C and -2.9°C in July respectively. The highest temperature that has been recorded is 41.6°C and the lowest -7.5°C.

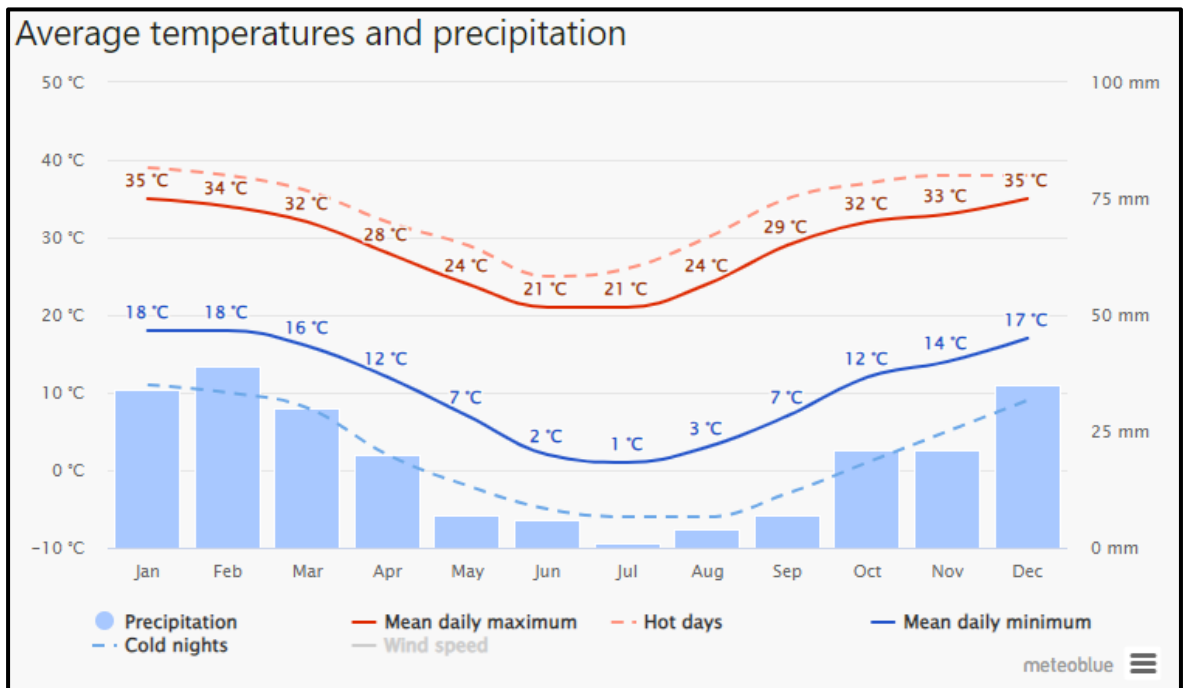


Figure 13: Average temperatures and precipitation for Hotazel (image obtained from [https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/hotazel\\_south-africa\\_995397](https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/hotazel_south-africa_995397)).

According to the Windfinder website the nearest station to record wind data of the area is the Kathu/Sishen weather station. According to this station the prevailing wind direction of the area is in a north/north-western direction with an average wind speed of 13 km/h. The following figure shows the monthly wind distribution of the Kathu/Sishen area within proximity to the application area.

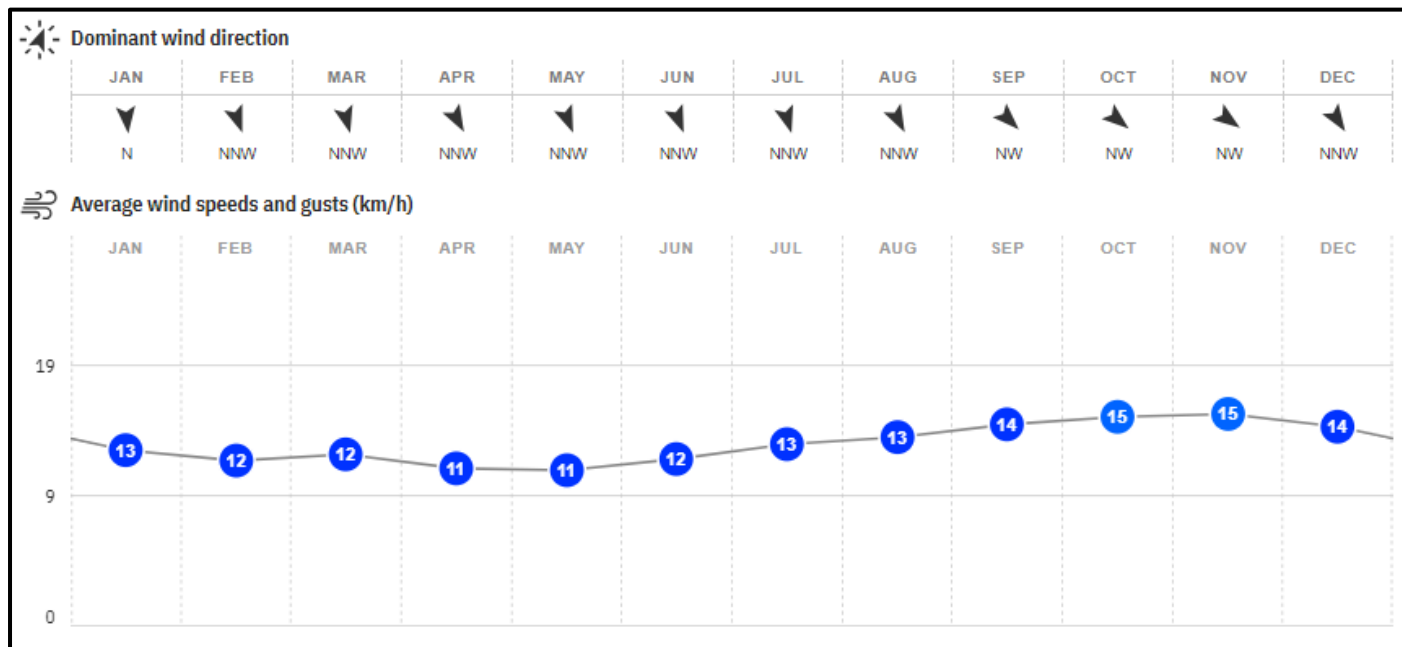


Figure 14: Monthly wind speed statistics and directions for Kathu/Sishen (image obtained from [www.windfinder.com/windstatistics/kathu\\_sishen](http://www.windfinder.com/windstatistics/kathu_sishen)).

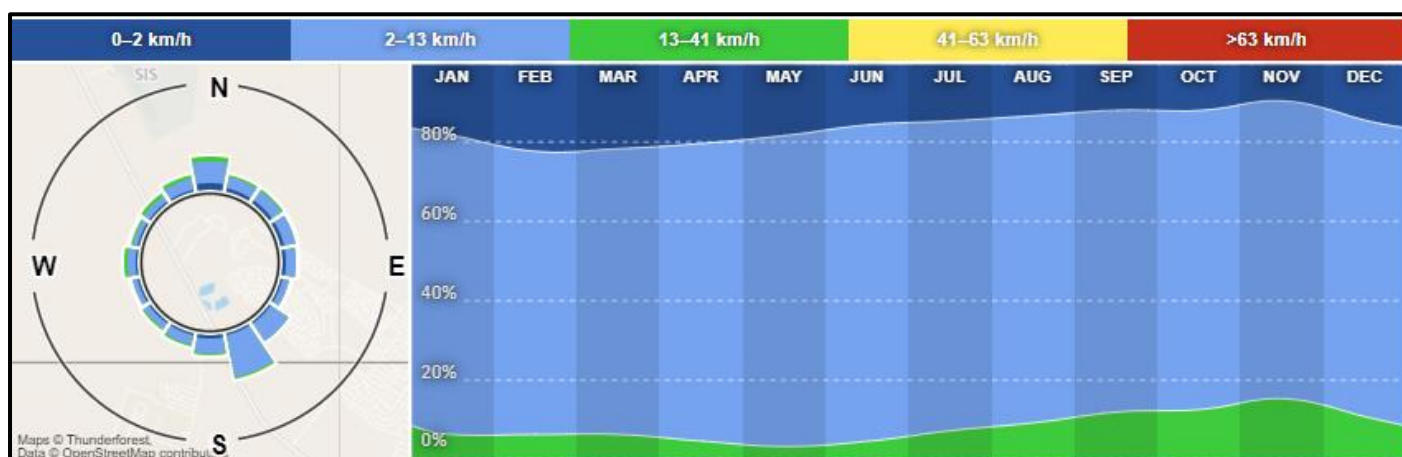


Figure 15: Monthly wind direction and strength distribution for Kathu/Sishen (image obtained from [www.windfinder.com/windstatistics/kathu\\_sishen](http://www.windfinder.com/windstatistics/kathu_sishen)).

**Hay Administrative District - Postmasburg**

According to the saexplorer website, Postmasburg normally receives ±241 mm of rain per year, with most rainfall occurring mainly during summer. The chart below (lower left) shows the average rainfall values for Postmasburg per month. It receives the lowest rainfall (0 mm) in July and the highest (57 mm) in March. The monthly

distribution of average daily maximum temperatures (centre chart below) shows that the average midday temperatures for Postmasburg range from 17°C in June to 32°C in January. The region is the coldest during July when the mercury drops to 0°C on average during the night. Consult the chart below (lower right) for an indication of the monthly variation of average minimum daily temperatures.

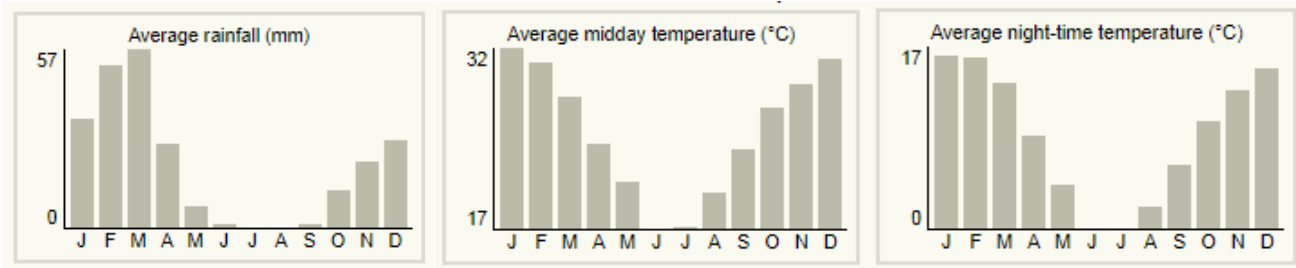


Figure 16: Charts showing the climatic averages of the Postmasburg region (information obtained from SAExplorer).

The dominant wind direction of Postmasburg is fairly constant ranging from north to west-northwest, with the average wind speed being ±6 knots (11.11 km/h) as shown in the following figure.

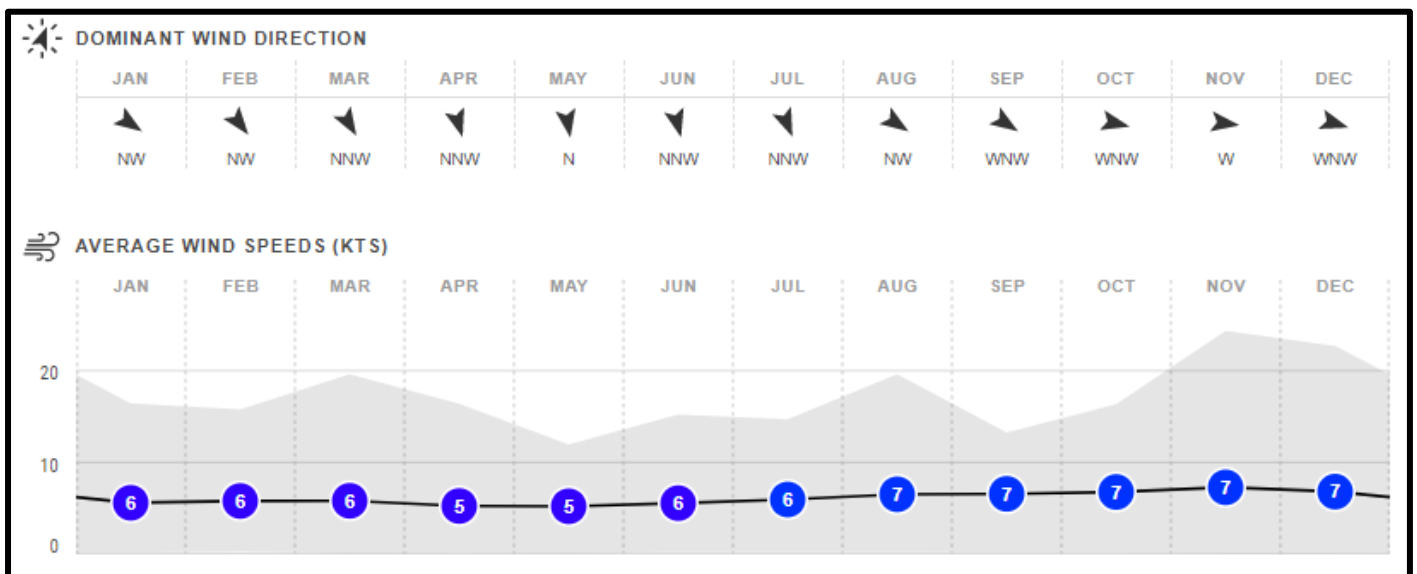


Figure 17: Image showing the dominant wind direction and average wind speed over a 12 month period for the Postmasburg area. (Image obtained from [www.windfinder.com/windstatistics/postmasburg](http://www.windfinder.com/windstatistics/postmasburg))

## 2. TOPOGRAPHY

### Kuruman Administrative District – Hotazel

The topography of the greater study area that includes the farms Botha No 313 and Devon No 277 is shown in the following figure. The area forms part of the inland plateau of South Africa with elevations generally at ±1 060 amsl. The landscape of the district is predominantly flat, with a ridge system bisecting the greater municipality along a north-south axis. This feature, the Kuruman hills, creates the only significant

variation in the otherwise flat landscape of the municipality (van Weele, 2011 and AGIS, 2015). The study area is situated in typical Kalahari surroundings. The topography alternates between elevated areas with poor developed soils to very deep developed soil type with poor differentiation between the different soil horizons in the plains. The Kuruman hills also determine the drainage pattern of the Kuruman river system with the alignment of the ridge forcing the draining of water in the area northwards before turning sharply west. The Kuruman River is a tributary of the Molopo River which eventually converges with the Orange River (van Weele, 2011 and AGIS, 2015).

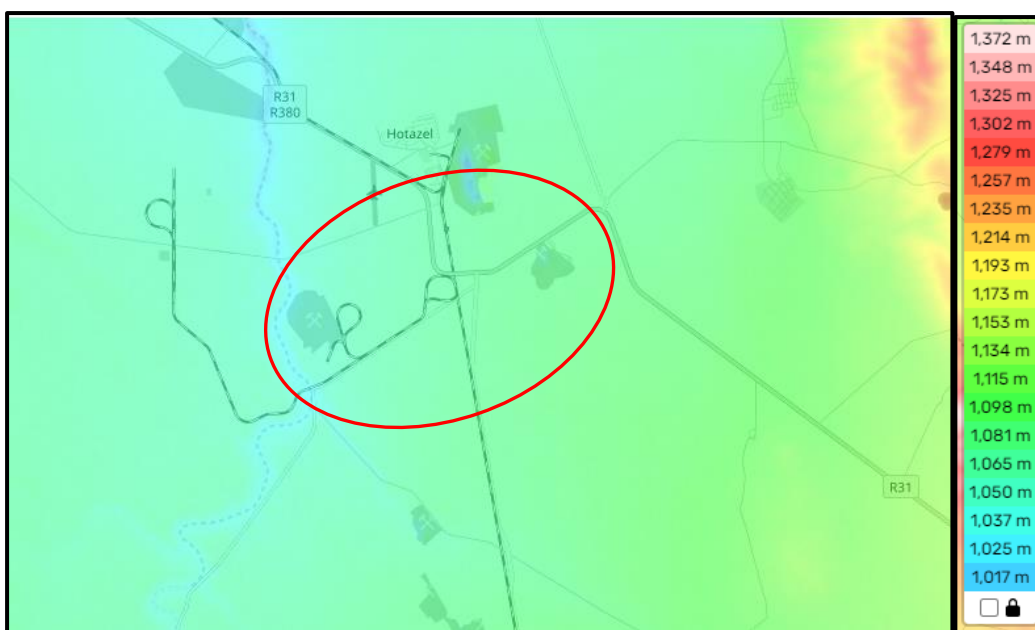


Figure 18: Map showing the topography of the greater Hotazel area (image obtained from <https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-27.31565%2C22.96555&zoom=10>).

### **Hay Magisterial District – Postmasburg**

The topography of the greater study area that includes the farms Bermolli No 583, Engelsdraai No 221, Vaalwater No 84, Farm No 570 (Zaai Plaats), and Witdraai No 204 is shown in the following figure. The area forms part of the inland plateau of South Africa with elevations generally at  $\pm 100$  amsl. The general topography of the application area varies from flat to gently undulating plains with the Langberge flanking Bermolli no 583, Engelsdraai No 221, and Witdraai No 204 to the west. The topography of Vaalwater No 84 and Farm No 570 (Zaai Plaats) is flat with singular hills/koppies on specifically the Remainder of Vaalwater No 84. This farm also has various depressions or pans that hold water during the rainy season.

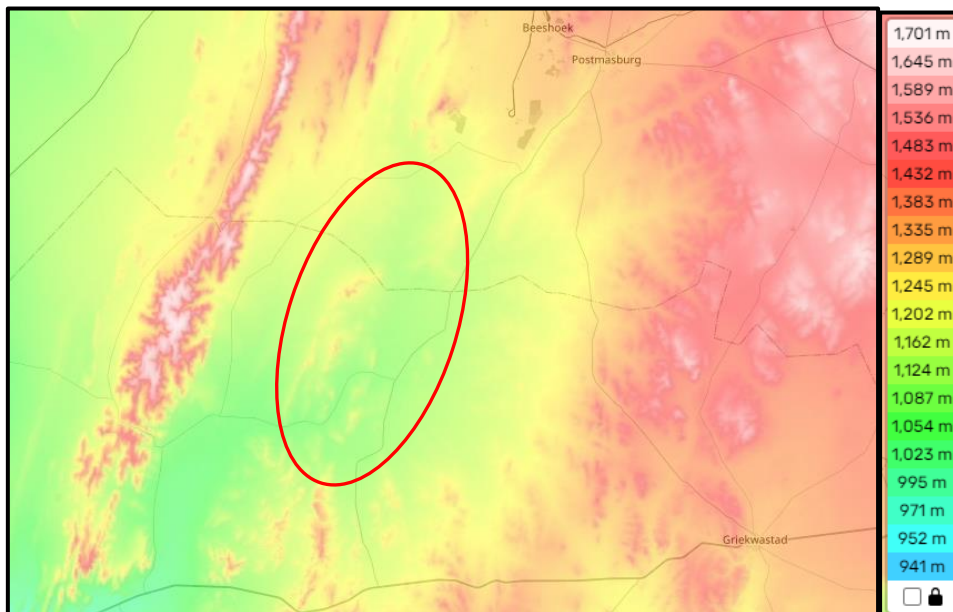


Figure 19: Map showing the topography of the greater Postmasburg area (image obtained from <https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-27.31565%2C22.96555&zoom=10>).

Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Topography.*

### **3. VISUAL CHARACTERISTICS**

The visual character of the greater study areas (Hay & Kuruman Districts) mainly comprise of an agricultural setting intersected by mining, road-, railway- and electricity infrastructure. Through the years the Postmasburg (Hay) area has become known for its manganese and iron ore potential and mines such as Kumba Iron Ore, Beeshoek-, Heuningkranz-, and Kolomela Mine were established. The towns of Hotazel, Kuruman and Postmasburg have a low aesthetic value.

The immediate surrounding land uses, adjacent of the earmarked farms, mainly include agricultural activities (grazing) and/or mining. The aesthetic ambiance of the region is high and represents that of a rural area with natural landscapes altered, in some areas, by mining.

Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Visual Characteristics.*

### **4. AIR QUALITY AND NOISE AMBIANCE**

Due to the low rainfall, the air quality of the study area is characterised as dry, arid, and dusty. Dust is the most important pollutant given the area's rural character predominantly affected by agriculture and/or mining. The noise ambiance of the study

area is classified as ambient rural or pastoral with noise levels mainly affected by traffic along the R31, R380, R309, R383, railway traffic, farming equipment and mining related operations.

Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Air Quality and Noise Ambiance.*

## 5. GEOLOGY AND SOIL

### Regional Geology

The regional geology of the study area forms part of the Transvaal Super Group. The Transvaal Super Group was deposited in two structurally controlled basins i.e. Transvaal and Griqualand West.

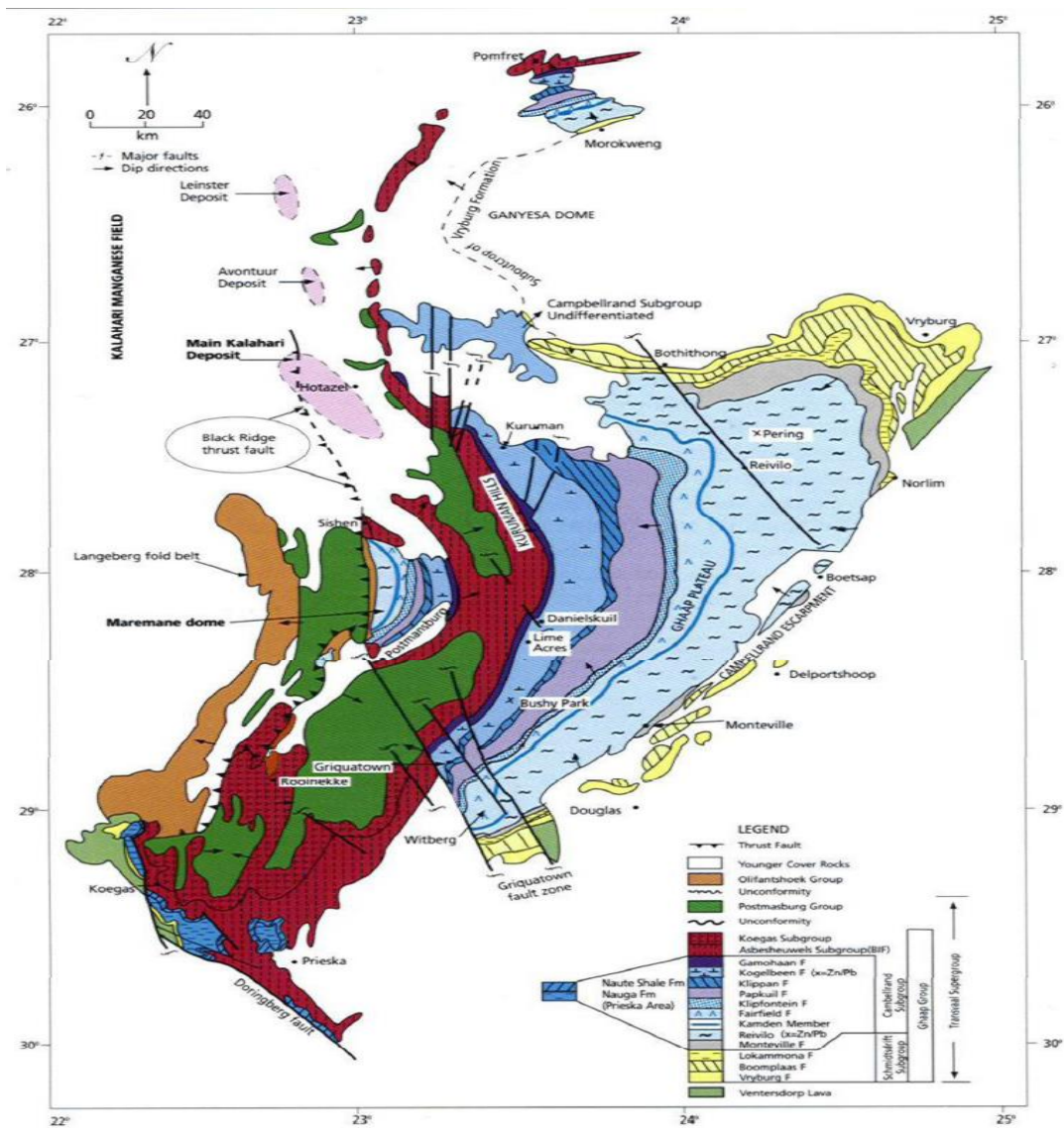


Figure 20: Geological map of Griqualand West (modified from Beukes 1986) (image obtained from Gamagara Resources (Pty) Ltd 2019).

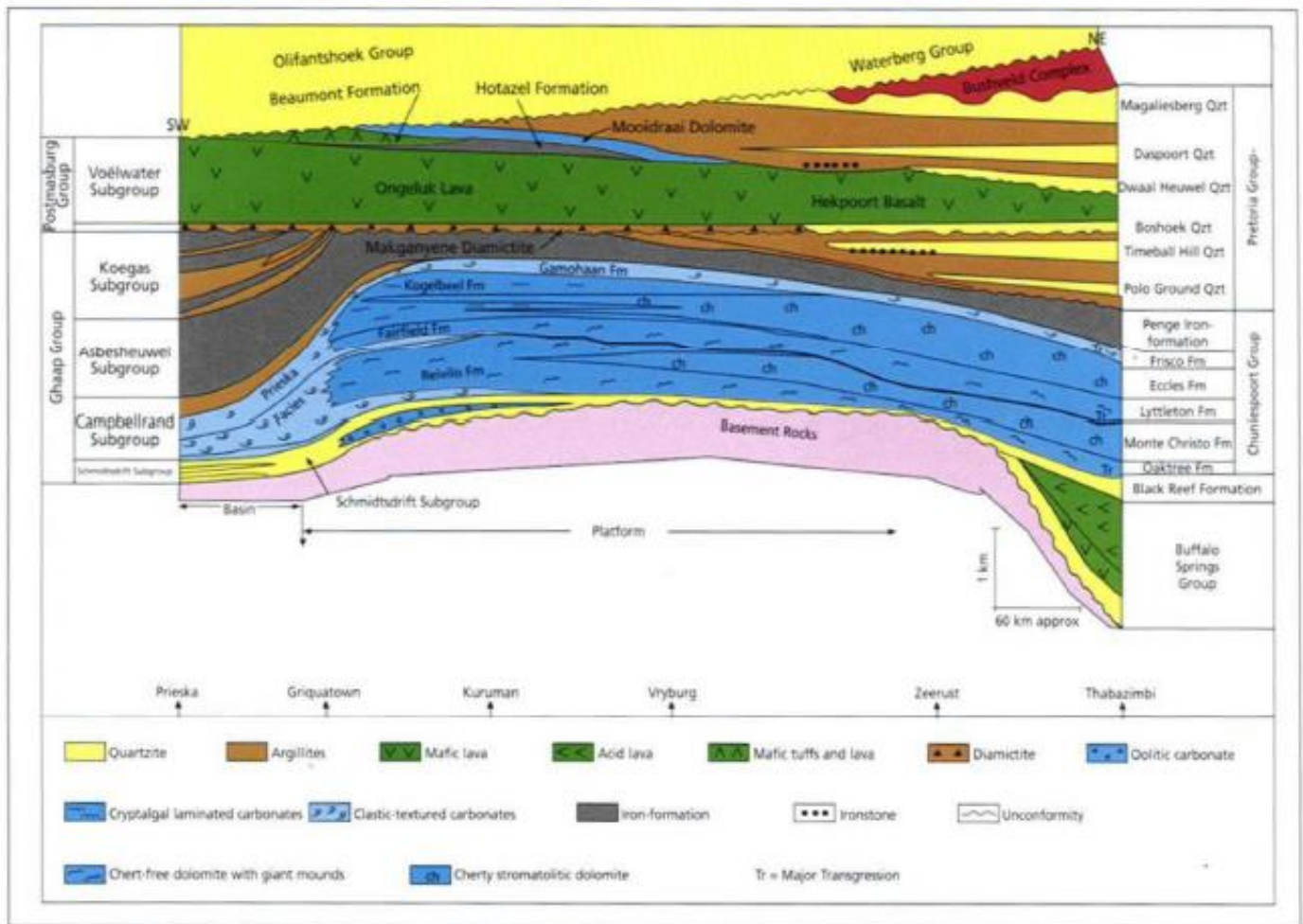


Figure 21: A southwest-northeast 600 km cross-section showing the simplified geology of the Transvaal Supergroup and the distribution of other important geological features (modified from Beukes 1983) (image obtained from Gamagara Resources (Pty) Ltd 2019).

The rock stratigraphy within the Griqualand West depository, forms part of the early Proterozoic-Transvaal Supergroup sequence. The Postmasburg Manganese Field is located along the western margin of the Kaapvaal Craton and on the eastern limb of the Maremane Dome.

In Griqualand West the succession can be broadly subdivided into a basal, chemical sedimentary unit, referred to as the Ghaap Group, which is overlain by a mixed volcanic-clastic-chemical sequence, known as the Postmasburg Group. The Ghaap and Postmasburg Groups represent two separate, major unconformity-bounded sequences (Cheney and Winter, 1995).

### 1. Ghaap Group

The Ghaap Group is subdivided, from the base upward, into the Schmidtsdrif Subgroup (interbedded siliclastics and carbonates), the Campbellrand Subgroup



(carbonates), the Asbesheuwel Subgroup (iron formation) and the Koegas Subgroup (interbedded siliclastics and iron formations).

### **1.1 Schmidtsdrif Subgroup**

The basal Schmidtsdrif Subgroup comprises fluviially deposited feldspathic quartz arenites, shallow marine, and intertidal quartz arenites as well as a platformal carbonate sequence (Beukes, 1979).

### **1.2 Campbellrand Subgroup**

The Campbellrand Subgroup consists of stromatolitic dolomite and limestone platform facies, which interfingers down slope with carbonate turbidites. The turbidites have been ankerized and silicified to form banded ferruginous chert. Toward the south the turbidites interfinger with carbonaceous shale (Prieska facies), which, according to Beukes, relates to deposition within a euxinic basin, in front of the carbonate platform.

### **1.3 Asbesheuwel Subgroup**

Shallow water carbonate deposition was terminated during a major transgression, which drowned the shelf, resulting in a fairly sudden transition from carbonates through cherts and into the banded iron formation of the Asbesheuwel Subgroup. Beukes, 1978 subdivided the Asbesheuwel Subgroup into the Kuruman Iron Formation at the base followed by the Griquatown Iron Formation at the top. According to Beukes the Kuruman Iron Formation was deposited within a deep shelf setting over the entire Kaapvaal Craton. It comprises an upward-shallowing sequence consisting of carbonaceous shale deposited in an euxinic basin, ankerite-banded chert, representing distal carbonate turbidites which was deposited in a transition zone, between the euxinic basin and the open shelf. Magnetite-hematite-chert micro banded rhythmite macrocycles containing interbedded stilpnomelane band- lutites, were deposited on the deep open shelf, while greenalite-siderite rhythmites mark the toe-of-slope and slope areas of a shallow water platform. The Ouplaas Member, which marks the top of the Kuruman Iron Formation, represents a clastic-textured shallow-water platform deposit.

The Griquatown Iron Formation overlies the Kuruman Iron Formation and consists of upward coarsening megacycles, deposited in environments that vary from low energy, subtidal to high energy, intertidal and lagoonal settings.

#### 1.4 Koegas Subgroup

The Koegas Subgroup was only deposited down slope and within the deeper part of the basin toward the south (Prieska area) and is absent toward the north (Sishen). The Koegas Subgroup was deposited during a transgressional phase and comprises a quartz-chlorite-mudstone unit at the base followed upward by iron formations with interbedded quartz-wackes, with more iron formations, containing interbedded carbonates toward the top. The Koegas Subgroup was subdivided by Beukes; (1978), from the base upward into the following formations:

- ◆ Pannetjie Formation: Quartz-chloritic mudstone.
- ◆ Dorasdale Formation: Iron-lutites.
- ◆ Kwakwas Formation: Greenalite-lutites and interbedded quartzwackes.
- ◆ Naragas Formation: Mudstones and carbonates.
- ◆ Rooinekke Formation: Iron band-lutites
- ◆ Nelani Formation: Mudstones with interbedded limestone, chert, and grit beds

#### 2. *Postmasburg Group*

Uplift and erosion of the platform strata took place prior to the deposition of the Makganyene Diamictite Formation at the base of the Postmasburg Group (Beukes, 1983, 1984). Visser (1971) and de Villiers and Visser (1977) considered the diamictite to be of glacial origin. The Postmasburg Group has been subdivided, from the base upward, into the following formations:

- ◆ Makganyene Formation (glacial diamictites).
- ◆ Ongeluk Formation (basaltic lavas).
- ◆ Hotazel Iron Formation (Banded iron stones, host to manganese deposits within the Kalahari Manganese Basin).
- ◆ Moidraai Formation (dolomites).

The different formations within the Postmasburg Group, conformably follows on top of one another. During post Postmasburg times, the Postmasburg Group was exposed to intense weathering. The erosional unconformity progressively cuts down the Stratigraphy, moving from the north (Hotazel area) toward the south (Postmasburg area), truncating gradually the Moidraai, the Hotazel, Ongeluk,

Makganyene and Asbesheuwel Formations to finally rest on dolomites of the Campbellrand Subgroup on the Maremane Dome near Postmasburg.

### 3. *Olifantshoek Group*

The unconformity is overlain by the Olifantshoek Group, which comprises shales at the base (Mapedi Formation) followed by quartzites of the Lucknow Formation. In the Sishen-Postmasburg area the Olifantshoek Group, is referred to as the Gamagara Formation. The unconformity is marked by a hematite pebble conglomerate and shale unit. The Olifantshoek unconformity is of utmost economic importance within the area. Where it rests on the Asbesheuwel Subgroup, hematite iron ore was formed (Iskor and Beeshoek), where it truncates the Campbellrand dolomites, manganese mineralization is developed (Postmasburg Manganese Field).

### 4. *Diatomite (Kieselguhr)*

Kieselguhr, diatomaceous earth and diatomite are the names commonly used for remarkably light, dull white or pale-coloured, massive to finely laminated chalky-looking, highly porous sediment composed mainly of the minute hollow opaline protective shells of unicellular aquatic plants known as diatoms.

Within the Griqualand West area, the diatoms appear to overlay either lava of the Ongeluk Sub-Group, or Dwyka shale (Base Kalahari Formation) along ancient water courses and paleo-marshes.



Figure 22: Example of kieselguhr (Van der Merwe)

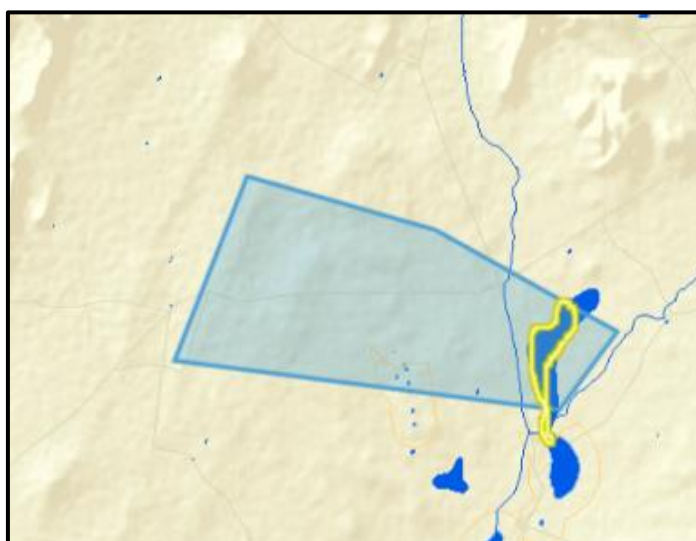
Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Geology.*

## 6. HYDROLOGY

*(Information extracted from the Lower Vaal Water Management Area: Internal Strategic Perspective, October 2004 & Development of ISPs for Central Region: Lower Orange WMA, July 2004. DWAF)*

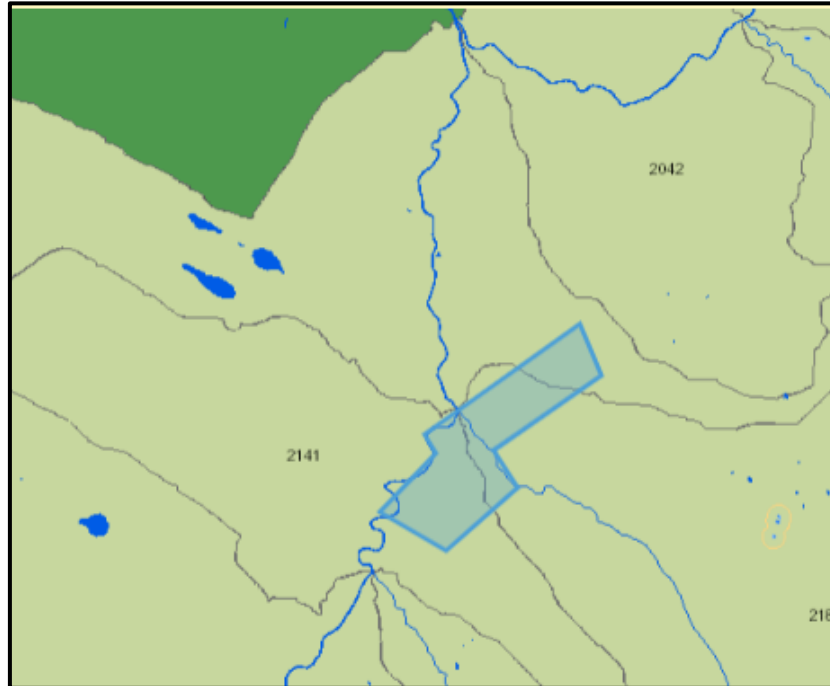
The farms Botha No 313, Devon No 277, and Bermolli No 583 are within the Molopo Sub-Water Management Area (SWMA) which is managed as part of the Lower Vaal Water Management Area (WMA ID 20). Although the Molopo SWMA forms part of the Lower Vaal WMA, it does not form part of the model for the Vaal River System as drainage of surface water from the Molopo SWMA occurs in the direction of the Orange River and not the Vaal River. The Molopo SWMA is considered an endoeric area as flows from the Molopo River have not reached the Orange River in recorded history. The bulk of the water used in this sub-catchment is from groundwater. The groundwater quality from most of the boreholes in the study area is fit for human and domestic animal use. Borehole yields in the calcrete aquifer generally vary from 0.2 to ±2 l/s.

The Ga-Mogara stream borders the farm Botha No 313 to the west/north-western. At the junction of the farms Devon No 277 and Botha No 313 the Witleegte stream joins the Ga-Mogara stream. According to the SANBI BGIS data an unnamed ephemeral drainage line is shown to cross through the eastern part of the farm Bermolli No 583. This line is shown to feed into a pan classified as an Upper Nama Karoo Depression on the SANBI BGIS Mapviewer as shown below.



*Figure 23: Figure indicating the position of the Upper Nama Karoo Depression (blue polygon with yellow outline) on the farm Bermolli No 583 as indicated on the BGIS Map Viewer – National Wetlands and NFEPA.*

According to the National Freshwater Ecosystem Priority Areas (NFEPA) map as presented by SANBI, neither the farms Botha No 313 nor Devon No 277 are within a NFEPA of conservation importance as shown in the following figure.



*Figure 24: Map showing the position of the nearest NFEPA (dark green polygon) north-west of the study area (blue polygon). The Ga-Mogara Stream runs along the western boundary of the study area while the Witteegte Stream cuts between the two properties. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)*

The farms Engelsdraai No 221, Vaalwater No 84, Farm No 570 (Zaai Plaats) and Witdraai No 204 are within the Orange SWMA that is managed as part of the Lower Orange Water Management Area. The Lower Orange WMA is the lowest WMA in the Orange/Vaal River Basin. The Vaal River is the main tributary to the Orange River, other tributaries are the Ongers and Hartebeest Rivers from the south, and the Molopo River and Fish River (Namibia) from the north. The Orange SWMA includes the Orange River over the whole of its length through the WMA together with minor tributary streams. Groundwater utilisation is of major importance across wide areas in the Lower Orange WMA and often constitutes the only source of water.

At least one ephemeral drainage line was identified that runs through the farm Engelsdraai No 221. The Soutloop Stream dissects the farm Witdraai No 204 into northern and southern sections. Various pans also classified as Upper Nama Karoo Depressions are present on the farm Vaalwater No 84. A large pan system lays directly north of the farm with smaller pans within the farm boundaries that are fed by runoff from the higher laying areas/koppies.

The following figure shows both Bermolli No 583 and Engelsdraai No 221 within a FEPA area of conservation importance, while the more southern farms Vaalwater No 84, Farm No 570 (Zaai Plaats) and Witdraai No 204 are outside the FEPA's.

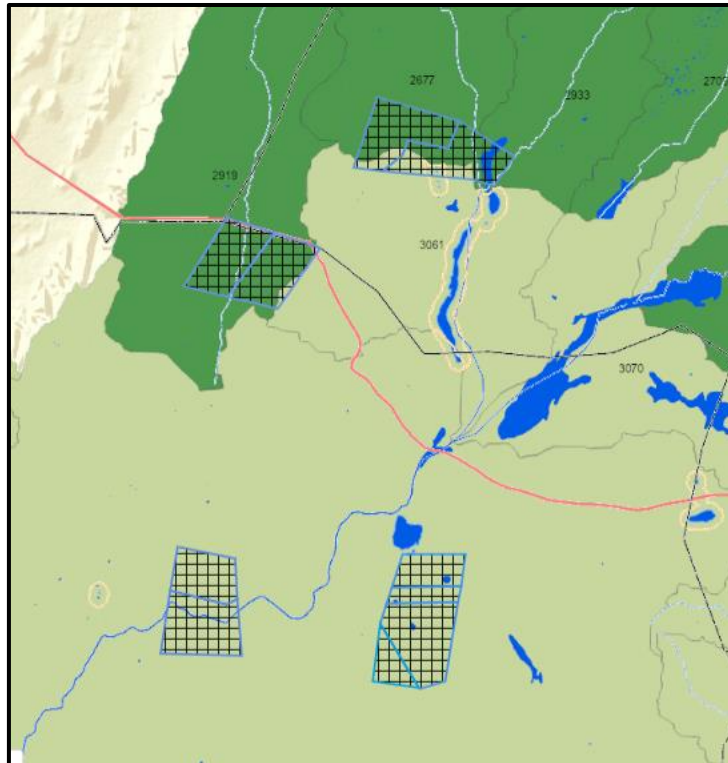


Figure 25: Map showing Bermolli No 583 (upper most farm) and Engelsdraai No 221 (second upper polygon) within the NFEPA (dark green polygon), while the three lower farms Witdraai No 204 (west), Vaalwater No 84 (east), and Farm No 570 (Zaai Plaats) (south) are outside a FEPA. Note the Soutloop Stream crossing through Witdraai No 204 as well as the pan system north of Vaalwater No 48. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

Also refer to Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Hydrology.

## **BIOLOGICAL ENVIRONMENT**

### **7. BIODIVERSITY CONSERVATION AREAS**

According to the DFFE Screening Report (see following image) an Ecological Support Area (ESA) is present along the south-western boundary of the farm Devon No 277. The Lexicon of Biodiversity Planning in South Africa provides the following definition for an ESA area:

- ◆ Ecological Support Area (ESA): “An area that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support

*the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or not necessary to meet them in natural or near-natural areas.”*

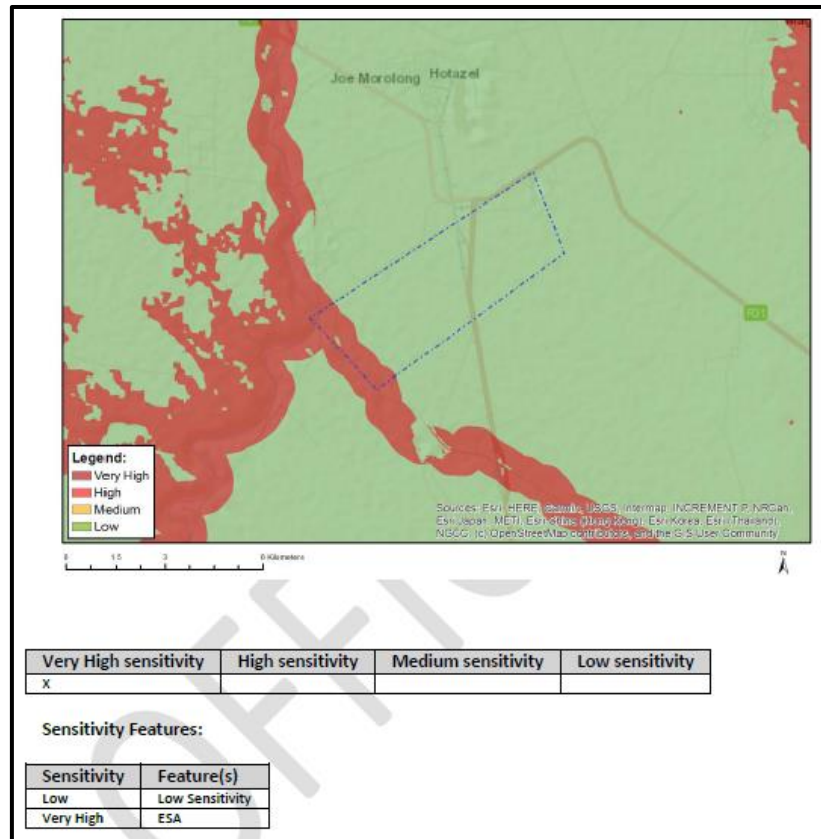


Figure 26: Terrestrial Biodiversity theme sensitivity of Devon No 277 according to the DFFE screening report.

The same ESA (that borders the farm Devon No 277) borders the farm Botha No 313 along the north-western and north-eastern boundaries as shown below.

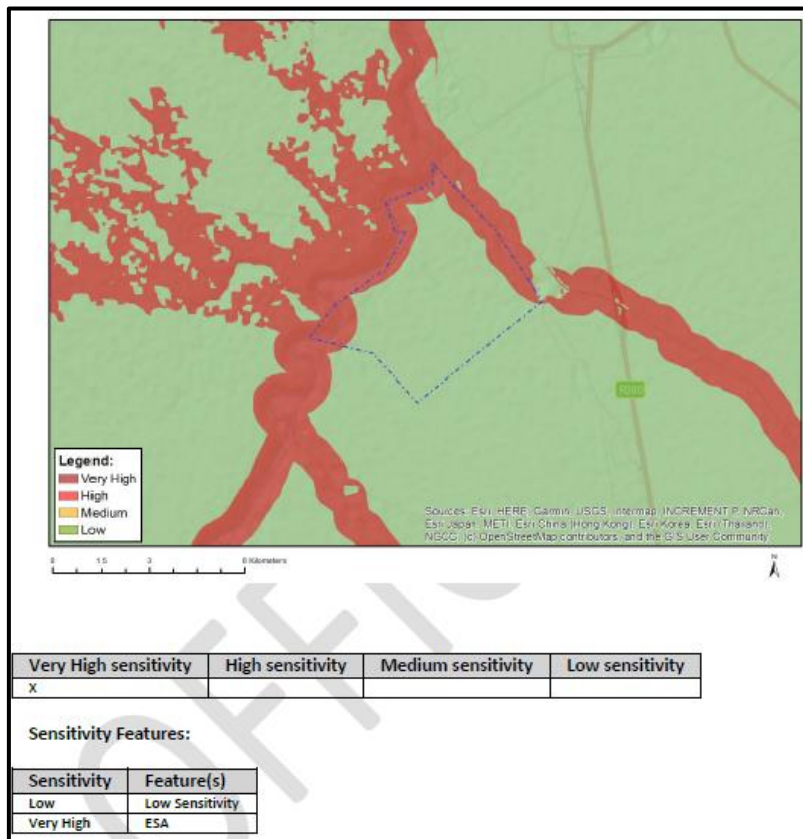


Figure 27: Terrestrial Biodiversity theme sensitivity of Botha No 313 according to the DFFE screening report.

The farm Bermolli No 583 is mostly within a Critical Biodiversity Area (CBA). The Lexicon of Biodiversity Planning in South Africa provides the following definition for an CBA:

- ◆ Critical Biodiversity Area (CBA): *“An area that must be maintained in a good ecological condition in order to meet biodiversity targets. CBA’s collectively meet biodiversity targets for all ecosystem types as well as for species and ecological processes that depend on natural or near-natural habitat, that have not already been met in the protected area network.”*



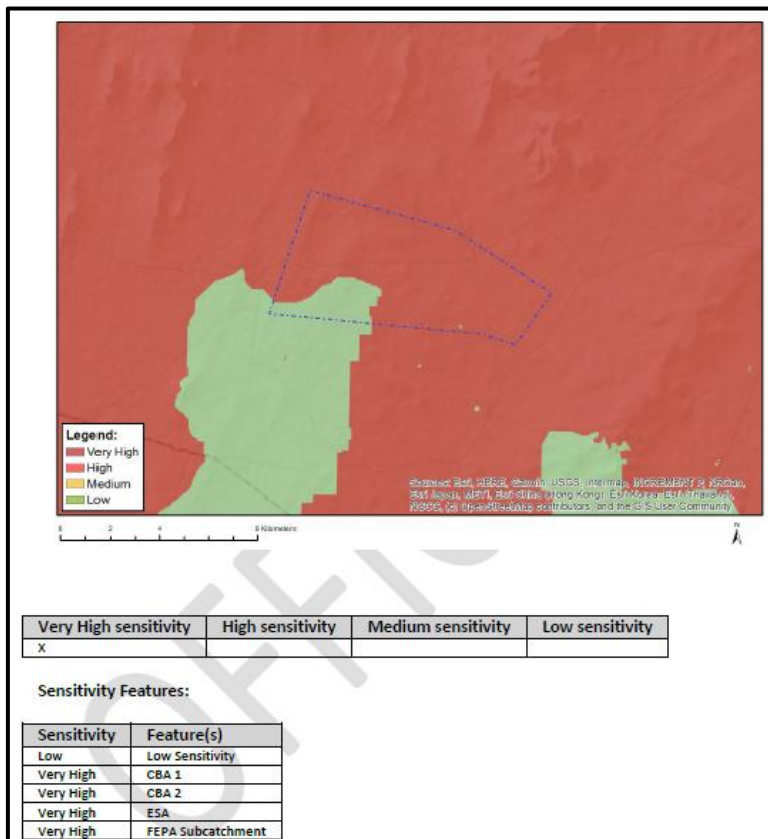


Figure 28: Terrestrial Biodiversity theme sensitivity of Bermolli No 583 according to the DFFE screening report.

The same applies to Engelsdraai No 221 where practically the whole farm is marked as a CBA. The drainage line that crosses through the farm Witdraai No 204 is an ESA, while the north-western section and a portion to the north of the farm Vaalwater No 84 is indicated as CBA. Farm No 570 (Zaai Plaats) does not extend over a CBA and/or ESA.

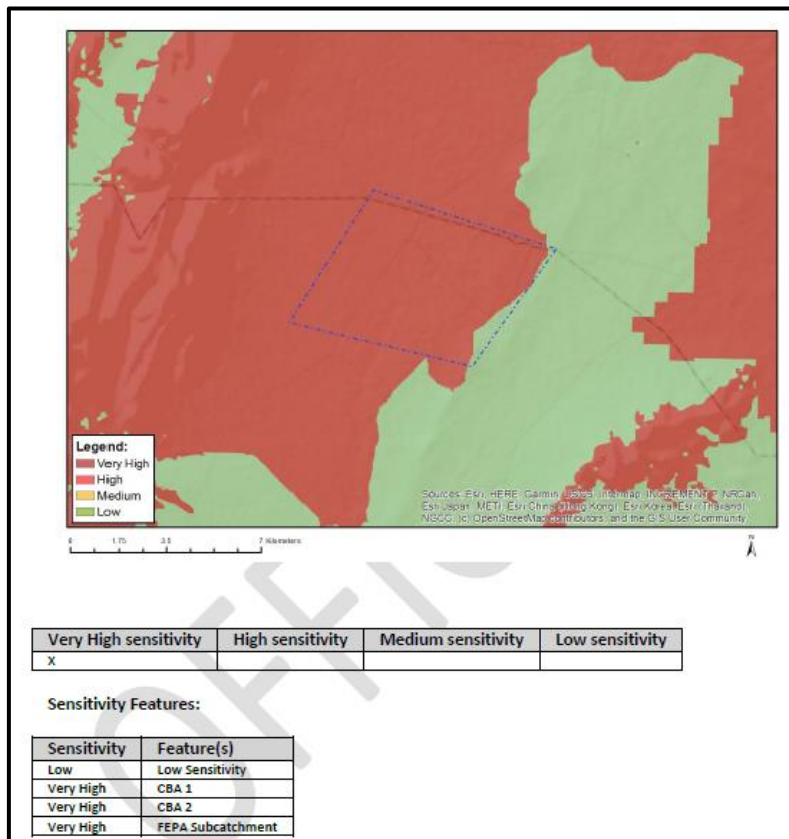


Figure 29: Terrestrial Biodiversity theme sensitivity of Engelsdraai No 221 according to the DFFE screening report.

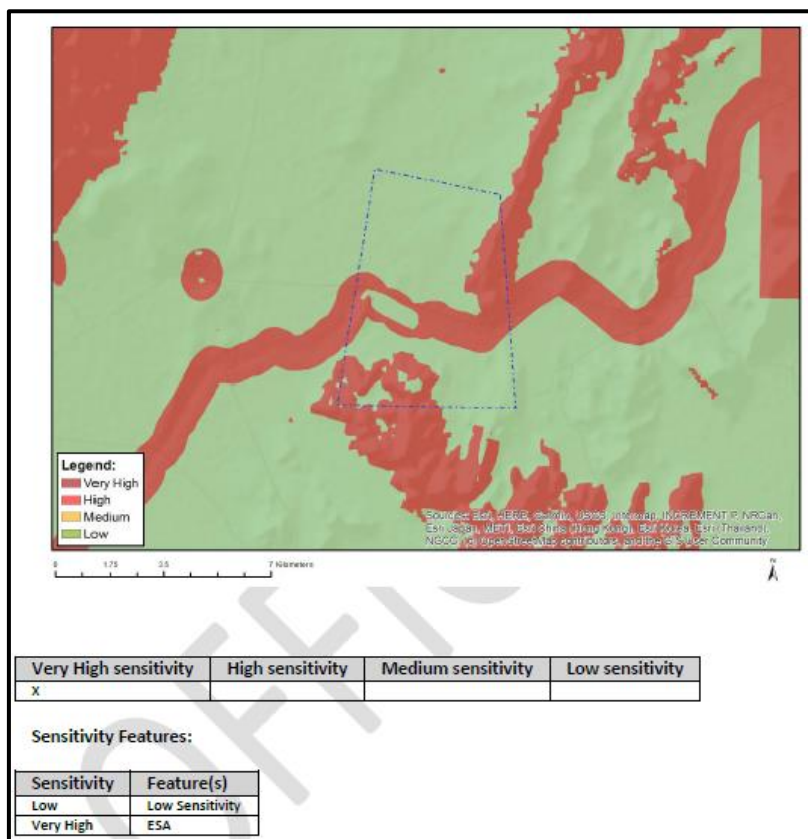


Figure 30: Terrestrial Biodiversity theme sensitivity of Witdraai No 204 according to the DFFE screening report.

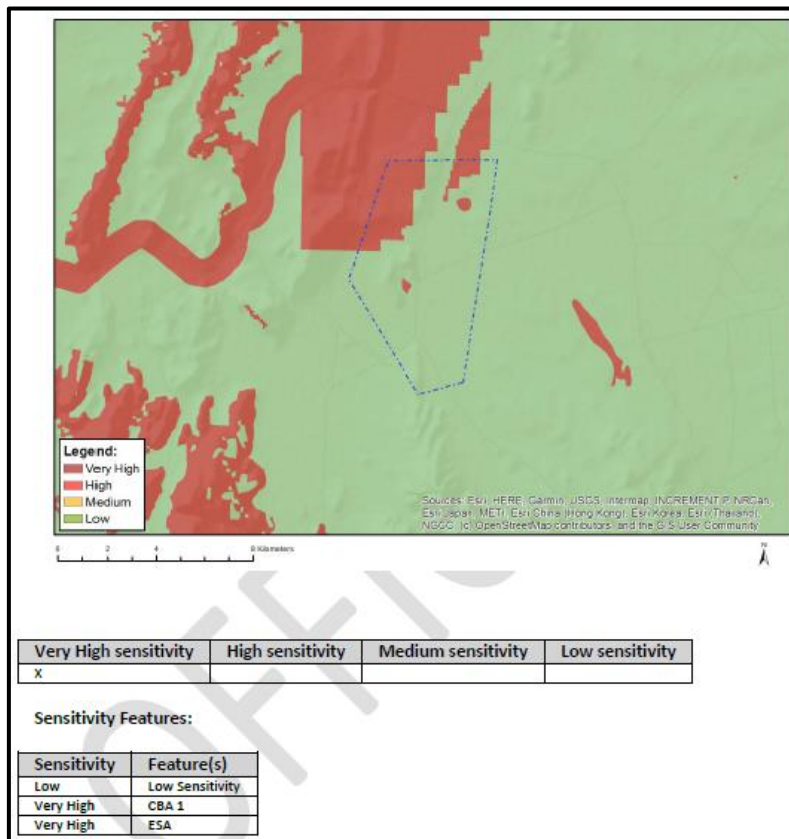


Figure 31: Terrestrial Biodiversity theme sensitivity of Vaalwater No 84 according to the DFFE screening report.

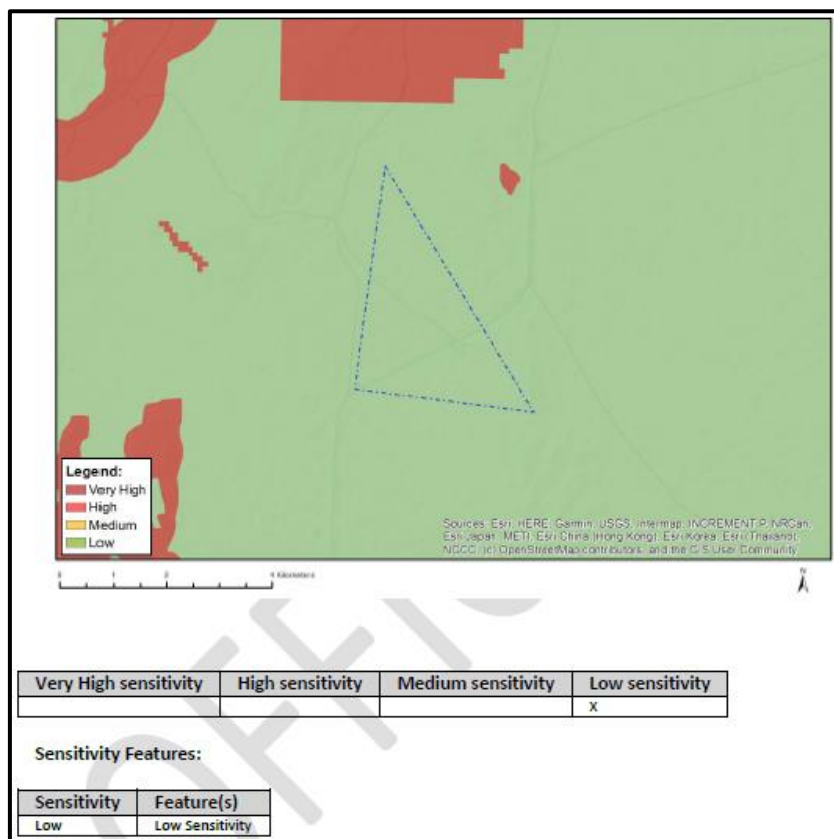
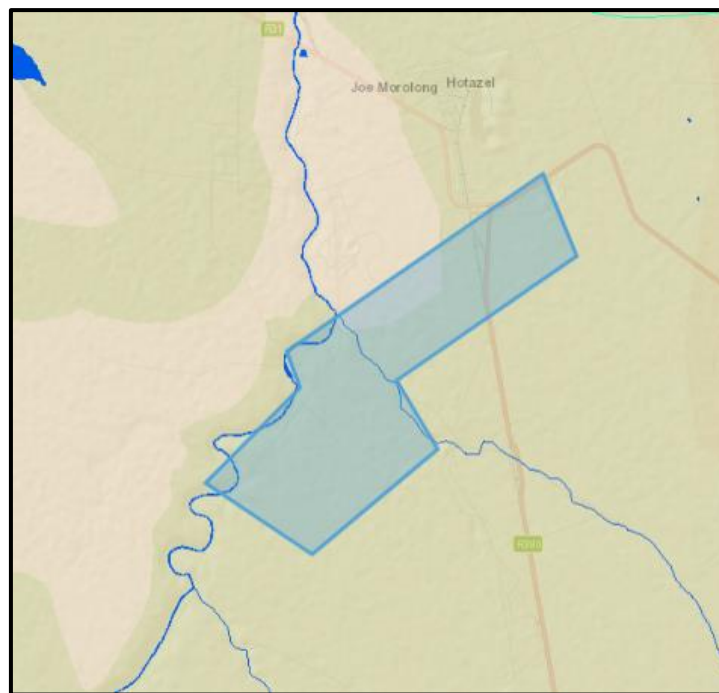


Figure 32: Terrestrial Biodiversity theme sensitivity of Farm No 570 (Zaai Plaats) according to the DFFE screening report.

Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.*

## 8. GROUNDCOVER

According to Mucina and Rutherford (2012) and the National Vegetation Map (2018) two vegetation types are prevalent on the farms Botha No 313 and Devon No 277 namely the Kathu Bushveld (SVk12) and the Gordonia Duneveld (SVkd1) as presented in the following figure.



*Figure 33: Map showing the distribution of the Kathu Bushveld (brown shading) as well as the Gordonia Duneveld (pink polygon) as depicted on the SANBI 2018 National Vegetation Map. The blue polygon represents the farms Botha No 313 (lower) and Devon No 277. (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).*

The vegetation types applicable to the farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204, Vaalwater No 84 and Farm No 570 (Zaai Plaats) include sections of the following:

- ◆ Kuruman Mountain Bushveld (SVk10),
- ◆ Northern Upper Karoo (NKu3),
- ◆ Olifantshoek Plains Thornveld (SVk13),
- ◆ Postmasburg Thornveld (SVk14),
- ◆ Southern Kalahari Salt Pans (Azi4).

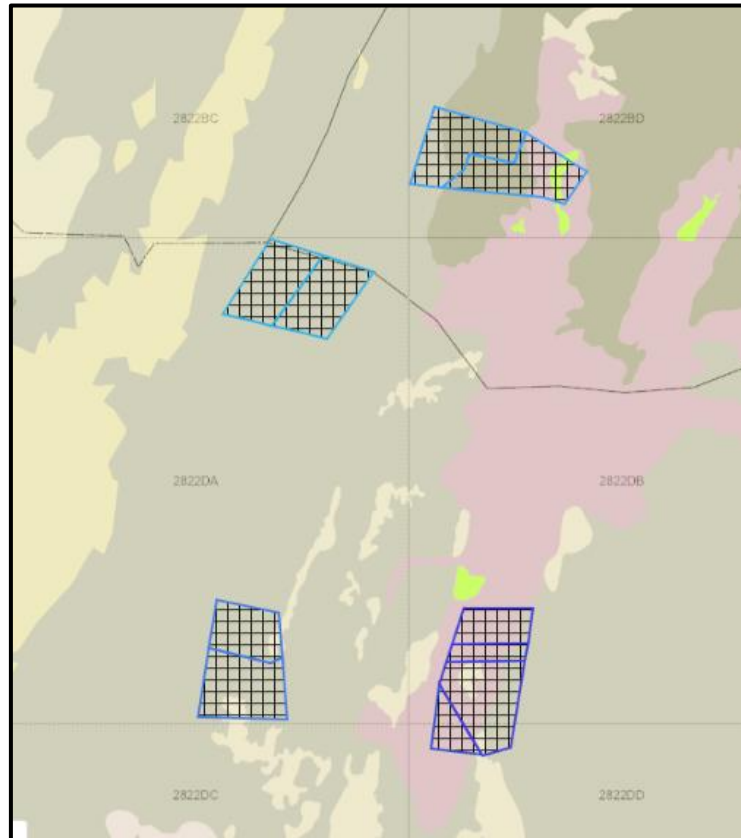


Figure 34: Map showing the distribution of the Olifantshoek Plains Thornveld (light brown), Postmasburg Thornveld (dark brown), Northern Upper Karoo (pink), Southern Kalahari Salt Pans (green), and the Kuruman Mountain Bushveld (sand colour) as depicted on the SANBI 2012 National Vegetation Map. The blue polygon represents the farms Bermolli No 583 (top), Engelsdraai No 221 (top-west), Witdraai No 204 (bottom-west), Vaalwater No 84 (bottom), and Farm No 570 (Zaai Plaats) (southern triangle). (Image obtained from the BGIS Map Viewer: 2009 National Vegetation Map).

### **Kathu Bushveld (SVk12)**

The Kathu Bushveld occurs from the plains surrounding Kathu and Deben in the south through Hotazel to the Botswana border. The landscape associated with this vegetation type is mostly flat with some interspersed pans.

The main vegetation features include a medium-tall tree layer with mostly *Boscia albitrunca*, but also *Vachellia erioloba* in places, as the prominent trees. The shrub layer is generally most important with, for example, *Senegalia mellifera* subsp. *detinens*, *Diospyros lycioides* and *Lycium hirsutum*. The grass layer is variable in cover. The most important trees and shrubs are *Vachellia erioloba*, *Senegalia mellifera* subsp. *detinens*, *Boscia albitrunca*, *Diospyros lycioides* subsp. *lycioides*, *Grewia flava*, *G. retinervis*, *Gymnosporia buxifolia*, *Lycium hirsutum* and *Rhigozum brevispinosum*. Dominant and other grasses include *Aristida meridionalis*, *A. congesta*, *Brachiaria nigropedata*, *Centropodia glauca*, *Eragrostis lehmanniana*, *E. biflora*, *E. chloromelas*, *E. heteromera*, *E. pallens*, *Melinis repens*, *Schmidtia pappophoroides*, *S.*

*kalahariensis*, *Stipagrostis ciliata*, *S. uniplumis* and *Tragus berteronianus*.

Significant low shrubs and herbs are *Aptosimum decumbens*, *Acrotome inflata*, *Erlangea misera*, *Gisekia africana*, *Heliotropium ciliatum*, *Hermbstaedtia fleckii*, *H. odorata*, *Limeum fenestratum*, *L. viscosum*, *Lotononis platycarpa*, *Nolletia arenosa*, *Senna italica*, *Sida cordifolia*, *Tragia dioica* and *Tribulus terrestris*.

The conservation status of this vegetation type is Least Threatened. Although conservation target of 16% is envisioned by conservation authorities, to date none of the vegetation type is statutorily conserved.

### **Gordonia Duneveld (SVkd1)**

The Gordonia Duneveld is characterized by parallel dunes about 3 – 8 m above the plains. Open shrubland with ridges of grassland dominated by *Stipagrostis amabilis* on the dune crests and *Vachellia haematoxylon* on the dune slopes, also with *Senegalia mellifera* on lower slopes and *Rhigozum trichotomum* in the interdune straaten.

Some of the important taxa found in this vegetation type include *Senegalia mellifera* subs *detinens*, Tall Shrubs: *Grewia flava*, *Rhigozum trichotomum*, Low Shrubs: *Aptosimum albomarginatum*, *Monechma incanum*, Succulent Shrubs: *Lycium bosciifolium*, *L. pumilum*, *Talinum cafferum*. Graminoids: *Schmidtia kalahariensis*, *Brachiaria glomerata*, *Bulostylis hispidula*, *Eragrostis lehmanniana*, Herbs: *Hermbstaedtia fleckii*, *Acanthosicyos naudinianus*, *Tribulus zeyheri*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) approximately 14% is statutorily conserved in the Kgalagadi Transfrontier Park. Very little of the vegetation type has been transformed, and erosion is normally very low.

### **Kuruman Mountain Bushveld (SVk10)**

The Kuruman Mountain Bushveld is characterized by rolling hills with generally gentle to moderate slopes and hill pediment areas with an open shrubveld with *Lebeckia macrantha* prominent in places.

Some of the important taxa found in this vegetation type include *Searsia lancea*, *S. pyroides*, *Diospyros austro-africana*, *Euclea crispa*, *E. undulate*, *Olea eoropaea*, *Tarchonanthus camphoratus*, *Amphiglossa triflora*, *Anthospermum rigidum*, *Helichrysum zeyheri*; Graminoids: *Andropogon chinensis*, *Anthephora pubescens*, *Aristida congesta*, *Digitaria eriantha*, *Themeda triandra*. Biogeographically Important

Taxa: *Lebeckia macrantha* (Griqualand West endemics), *Tarchonanthus obovatus*, *Euphorbia wilmaniae*, *E. planiceps*, *Digitaria polyphylla*, *Sutera griquensis*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none of it is conserved in statutory or private conservation areas. A conservation target of 16% was set for the vegetation type.

### **Northern Upper Karoo (NKu3)**

The Northern Upper Karoo is a very wide unit that covers parts of the Northern Cape and Free State Provinces. The vegetation type is a shrubland dominated by dwarf karoo shrubs, grasses and *Senegalia mellifera* subs. *detinens* and some other low trees. The unit is flat to gentle sloping.

Some of the important taxa found in this vegetation type include *Senegalia mellifera* subs *detinens*, *Boscia albirunca*. Tall Shrubs: *Lycium cinereum*, *L. horridum*, *L. oxycarpum*, *Rhigozum trichotomum*, Low Shrubs: *Chrysocoma ciliata*, *Gnidia polycephala*, *Pentzia calcarean*, *Aptosimum marlothii*, *Eriocephalus eriocephalus* subsp *eriocoides*, *Euryops asparagoides*, *Limeum aethiopicum*, *Pentzia lanata*, *Zygophyllum lichtensteinianum*, Herbs: *Convolvulus sagittatus*, *Dicoma capensis*, *Gazania krebsiana*, *Radyera urens*, Graminoids: *Aristida adscensionis*, *A. congesta*, *Enneapogon desvauxii*, *Eragrostis lehmanniana*, *E. obtusa*, *Fingerhuthia africana*, *Themeda triandra*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none is conserved in statutory conservation areas. *Prosopis* occurs in generally isolated patches, with densities ranging from very scattered to medium to localised closed woodland.

### **Olifantshoek Plains Thornveld (SVk13)**

The Olifantshoek Plains Thornveld is a very wide and diverse unit on plains with usually open tree and shrub layers with for example *Vachellia luederitzii*, *Boscia albitrunca* and *Searsia tenuinervis*, and with a usually sparse grass layer.

Some of the important taxa found in this vegetation type include *Vachellia erioloba*, *Senegalia mellifera*, *Boscia albitrunca*, *Terminalia sericea*, *Lycium hirsutum*, *Rhigozum obovatum*, *Searsia tridactyla*, *Tarchonanthus camphoratus*, *Aptosimum procumbens*, *Grewia retinervis*, *Solanum tomentosum*. Graminoids: *Schmidtia papophoroides*, *Stipagrostis uniplumis*, *Aristida congesta*, *Digitaria eriantha*. Biogeographically

Important Taxa: *Vachellia luederitzii*, *Lebeckia macrantha*, *Hermannia burchelli*, *Justicia puberula*, *Tarchonanthus obovatus*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) only 0.3% is statutorily conserved in the Witsand Nature Reserve. Approximately 1% of the vegetation type has been transformed and the occurrence of erosion is very low. A conservation target of 16% was set for the vegetation type.

#### **Postmasburg Thornveld (SVk14)**

The vegetation and landscape features of the Postmasburg Thornveld is described as flats surrounded by mountains supporting open, shrubby thornveld characterised by dense shrub layer often lacking a tree layer, the grass layer is very sparse. Shrubs are generally low with a karroid affinity.

Some of the important taxa found in this vegetation type include *Vachellia erioloba*, *V. karroo*, *Searsia lancea*, *S. tridactyla*, *Ziziphus mucronata*, *Diospyros lycioides*, *Ehretia rigida*, *Tarchonanthus camphoratus*, *Grewia flava*, *Felicia muricata*, *Melolobium microphyllum*, *Sutera linariifolia*, Graminoids: *Digitaria eriantha*, *Enneapogon scoparius*, *Eragrostis lehmanniana*, *Aristida adscensionis*, *A. congesta*, *A. diffusa*. Biogeographically Important Taxa: *Euphorbia bergii*, *Digitaria polyphylla*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none of it is conserved in statutory or private conservation areas. Very little of the vegetation type has been transformed and the occurrence of erosion is very low. A conservation target of 16% was set for the vegetation type.

#### **Southern Kalahari Salt Pans (Azi4).**

The vegetation and landscape features of the Southern Kalahari Salt Pans is described as low grasslands on pan bottoms (often devoid of vegetation) often dominated by *Sporobolus* species, with a mixture of dwarf shrubs. The low shrubland dominated by *Lycium* and/or *Rhigozum* usually forms the outer belt in the salt-pan zonation systems.

Some of the important taxa found in this vegetation type include the shrubs *Zygophyllum tenue*, *Salsola scopiformis*. Herbs: *Hirpicium gazanioides*, *Tribulus terrestris*. Succulent Herbs: *Trianthema triquetra* subsp *parvifolia*. Graminoids: *Enneapogon desvauxii*, *Eragrostis truncata*, *Sporobolus coromandelianus*, *S. rangei*, *Panicum impeditum*.



The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) about 8% is statutorily conserved in the Kgalagadi Transfrontier Park. The vegetation of the pans is subject to natural degradation/regeneration cycles controlled by concentration of grazing animals.

Also refer to *Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.*

## 9. FAUNA

The study area is mainly used for stock grazing with some game farming. Apart from the domestic animals, the indigenous faunal action of the area is high and shows a rich diversity with various protected species still present. The following faunal species are known to occur in/around the study area (non-exhaustive list):

### Mammals

- ◆ Aardvark (*Orycteropus afer*)
- ◆ Bat-eared Fox (*Otocyon megalotis*)
- ◆ Black-footed Cat (*Felis nigripes*) (VU)
- ◆ Bushveld Gerbil (*Gerbilliscus leucogaster*)
- ◆ Cape Fox (*Vulpes chama*)
- ◆ Cape Porcupine (*Hystrix africaeaustralis*)
- ◆ Desert Pygmy Mouse (*Mus indutus*)
- ◆ Ground Squirrel (*Xerus inauris*)
- ◆ Namaqua Rock Mouse (*Aethomys namaquensis*)
- ◆ Slender Mongoose (*Galerella sanguinea*)
- ◆ Smith's Red Rock Hare (*Pronolagus rupestris*)
- ◆ Southern Multimamate Mouse (*Mastomys coucha*)
- ◆ Springhare (*Pedetes capensis*)
- ◆ Steenbok (*Raphicerus campestris*)
- ◆ Yellow Mongoose (*Cynictis penicillata*)

### Birds

- ◆ African March-harrier (*Circus ranivorus*)
- ◆ Black Stork (*Ciconia nigra*)
- ◆ Burchell's Courser (*Cursorius rufus*)
- ◆ Chestnut-banded Plover (*Charadrius pallidus*)
- ◆ Kori Bustard (*Ardeotis kori*) (NT)

- ◆ Lanner Falcon (*Falco biarmicus*)
- ◆ Lappet-Faced Vulture (*Torgos tracheliotos*) (EN)
- ◆ Lesser Kestrel (*Falco naumanni*)
- ◆ Ludwig's Bustard (*Neotis ludwigii*) (EN)
- ◆ Martial Eagle (*Polemaetus bellicosus*) (VU)
- ◆ Secretary Bird (*Saggittarius sepentarius*) (VU)
- ◆ Sociable Weaver (*Philetairus socius*)
- ◆ Tawny Eagle (*Aquila rapax*) (VU)
- ◆ White-backed Vulture (*Gyps africanus*) (CR)
- ◆ Yellow-billed Stork (*Mycteria ibis*)

**Invertebrates**

- ◆ Baboon Spiders
- ◆ Boomslang (*Dispholidus typus typus*)
- ◆ Burrowing Scorpions
- ◆ Cape Cobra (*Naja nivea*)
- ◆ Koringkriek (*Acanthopulus discoidalis*)
- ◆ Namaqua Plated Lizard (*Gerrhosaurus typicus*)
- ◆ Namaqua Sand Lizzard (*Pedioplanis namaquensis*)
- ◆ Puff Adder (*Bitis arietans*)
- ◆ Striped Skaapsteker (*Psammophylax tritaeniatus*)

According to the DFFE Screening Report (see following image) the animal species theme sensitivity of Devon No 277 and Botha No 313 range between Low and Medium.

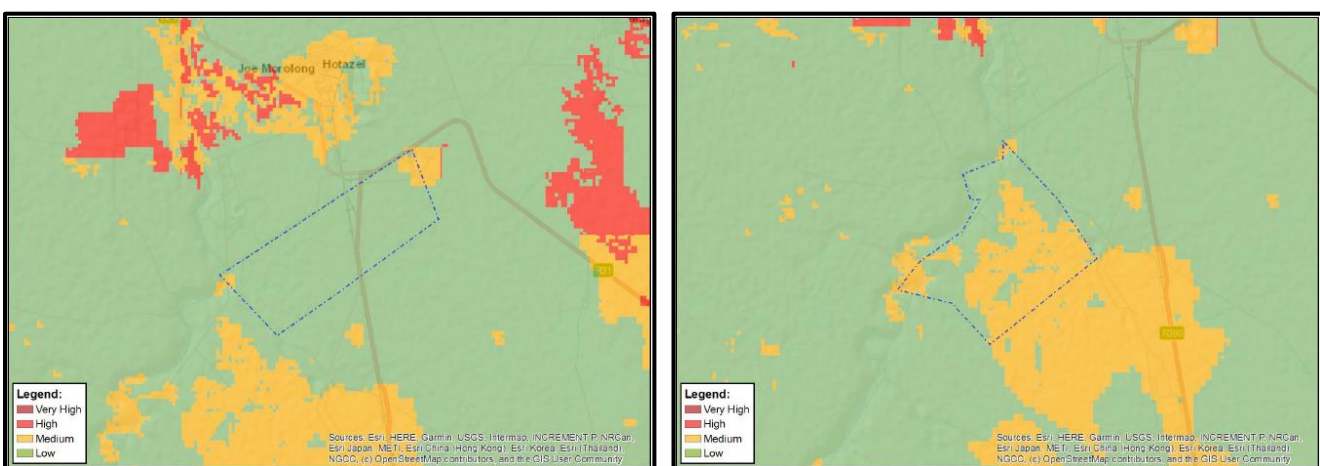


Figure 35: Animal Species theme sensitivity of Devon No 277 (left pane) and Botha No 313 (right pane) according to the DFFE screening report.

The animal species theme sensitivity of the farms Bermolli No 583 and Engelsdraai No 221 range between High and Medium due to the possible occurrence of the following bird species:

- ◆ Lappet-faced Vulture (*Torgos tracheliotos*) (EN)
- ◆ Ludwig's Bustard (*Neotis ludwigii*) (EN)
- ◆ Secretarybird (*Sagittarius serpentarius*) (VU)
- ◆ Tawny Eagle (*Aquila rapax*) (EN)

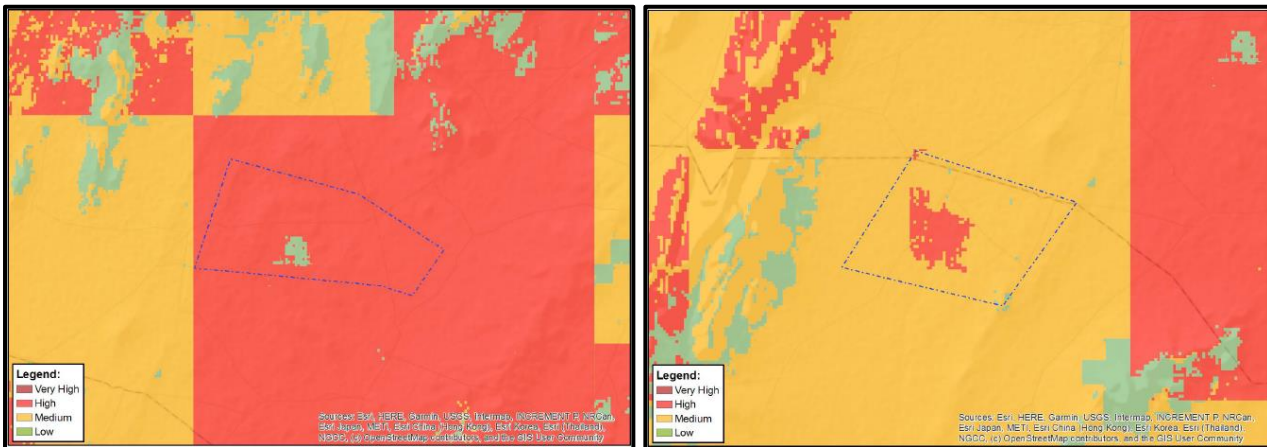


Figure 36: Animal Species theme sensitivity of Bermolli No 583 (left pane) and Engelsdraai No 221 (right pane) according to the DFFE screening report.

The animal species theme sensitivity of the farm Witdraai No 204 is shown as Medium due to the possible occurrence of the Ludwig's Bustard (*Neotis ludwigii*) and/or the Tawny Eagle (*Aquila rapax*).

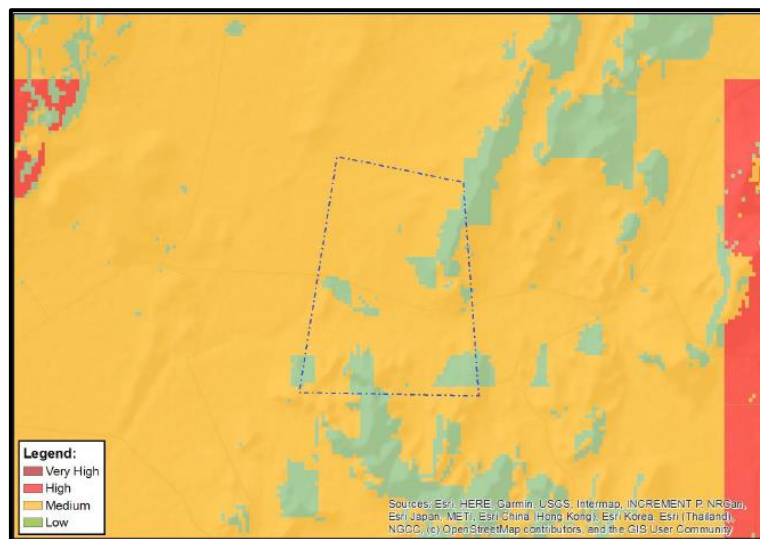


Figure 37: Animal Species theme sensitivity of Witdraai No 204 according to the DFFE screening report.

According to the DFFE Screening Report (see following image) the animal species theme sensitivity of Vaalwater No 84 and Farm No 570 (Zaai Plaats) is mainly high. The following bird species are listed as the main reason for the high rating:

- ◆ Burchell's Courser (*Cursorius rufus*) (VU)
- ◆ Lappet-faced Vulture (*Torgos tracheliotos*) (EN)
- ◆ Ludwig's Bustard (*Neotis ludwigii*) (EN)
- ◆ Tawny Eagle (*Aquila rapax*) (EN)

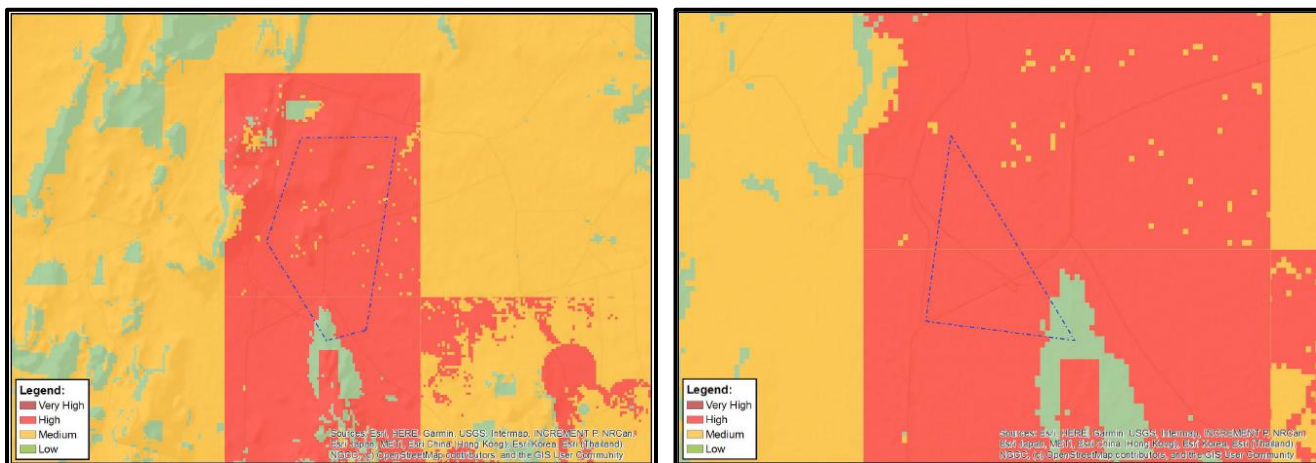


Figure 38: Animal Species theme sensitivity of Vaalwater No 84 (left pane) and Farm No 570 (Zaai Plaats) (right pane) according to the DFFE screening report.

Also refer to Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.

## HUMAN ENVIRONMENT

### 10. CULTURAL AND HERITAGE ENVIRONMENT

(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Right with Bulk Sampling over various farms in the Hay and Kuruman Administrative District, Northern Cape, 2024 attached as Appendix F and the Palaeontological Impact Assessment for the Prospecting Right with bulk sampling over various farms in the Hay and Kuruman Administrative Districts, Northern Cape Province attached as Appendix G)

#### Archaeological Background

The following section discusses the archaeological background of the greater study area.

## 1. Stone Age

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age, and the Earlier Stone Age. Each of these phases contains sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. The three main phases can be divided as follows;

- ◆ **Later Stone Age (LSA):** associated with Khoi and San societies and their immediate predecessors. - Recently to ~30 thousand years ago.
- ◆ **Middle Stone Age (MSA):** associated with Homo sapiens and archaic modern human - . 30-300 thousand years ago.
- ◆ **Earlier Stone Age (ESA):** associated with early Homo groups such as Homo habilis and Homo erectus. - 400 000-> 2 million years ago.

The area in and surrounding Kathu is referred to as the Kathu Complex which is comprised of several Stone Age sites of varying heritage significance. A series of 11 localities which have been exposed due to sinkhole formations belong to the Kathu Complex (Beaumont 1990, Lukich et al 2019). The Kathu Pans form an important aspect of the study of human evolution due to the expansive occupation within the region. Evidence of the oldest lithic assemblage of the Fauresmith industry, dating back 500 thousand years can be found at the site of Kathu Pan 1 (Wilkins and Chazan 2012). Lithic assemblages found at Kathu Pan 1 show continued hominin occupation throughout the ESA, MA and LSA. Lithic technology at Kathu Pan 1 suggests one of the earliest pieces of evidence for the use of spears for hunting and blade production (Wilkins and Chazan 2012). On the farm Sims 462 Kathu Pan 6, 8,9,10, and 11 are found within a sinkhole that was caused by sediment collapse. Artefacts found on the farm Sims are associated with the Middle and Late Stone Age. Excavations on farm Sacha recovered Acheulean to Late Stone Age material from Kathu Pan 1. Stone tools recovered from the excavations are stored at the McGregor Museum (Beaumont 2000).

To the east of the town of Kathu, a site called the Townlands was discovered in 1980 by the landowner. Excavations and analysis of the site discovered the densest Stone Age scatter with over a million artefacts being recovered from the site (Chazan 2021). An in-situ quarry is speculated to have been made use of at Kathu Townlands, indicating the local procurement of materials as well as the local production of stone tools within the area (Walker et al 2014). The site itself spans roughly 12 hectares in size and is an important archaeological site pertaining to

early human activity within the country. In 2013, the Kathu Townlands was declared a Grade 1 National Heritage site (Walker et al 2014).

Excavations at the Wonderwerk Cave situated in the Kuruman Hills yielded a deep deposit rich with Stone Age materials. The cave shows a long period of hominin occupation as the cave was used throughout the Stone Age. Rock engravings can also be found within the cave (Beaumont and Vogel 2006). Due to the importance of the finds, the cave has been registered as a National Heritage Site by SAHRA. Closer to Kuruman two shelters on the northern and southern faces of GaMohaana (in the Kuruman Hills northwest of the town) contain Later Stone Age remains and rock paintings. Archaeological surveys have shown rocky outcrops and hills, drainage lines, riverbanks, and confluences to be prime localities for archaeological finds and specifically Stone Age sites, as these areas were utilized for settlement of base camps close to water and hunting ranges.

Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is referred to as the Ceramic Late Stone Age (De Jong 2010) and is represented by the Blinkklipkop specularite mine near Postmasburg and a cluster of important finds at Kathu Pan. Kathu Pan has been the subject of numerous heritage studies and is a notable heritage site (Beaumont 2004, Wilkins et al 2012). Additional specularite workings with associated Ceramic Later Stone Age material and older Fauresmith sites (early Middle Stone Age) are known from Lylyfeld, Demaneng, Mashwening, King, Rust & Vrede, Paling, Gloucester and Mount Huxley (Morris 2005).

Stone Age artefacts are often recorded at industrial sites like the mining activities at Makganyane and the effects of heavy-duty earth moving machinery on the formation of lithic debitage at open-air Stone Age/Palaeolithic sites was examined by Bradfield and Van der Walt (2018) at a site close to Kathu. The experiment with heavy-duty machinery produced only one pseudo-formal tool, most of the debitage produced mimics that occasioned by knapping, and this could attribute to some of the debitage/ artefacts identified on industrial sites.

## 2. Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. It can be divided into three distinct periods:

- ◆ **The Early Iron Age (EIA):** Most of the first millennium AD.
- ◆ **The Middle Iron Age (MIA):** 10<sup>th</sup> to 13<sup>th</sup> centuries AD.
- ◆ **The Late Iron Age (LIA):** 14<sup>th</sup> century to colonial period.

Iron Age expansion southwards past Kuruman into the Ghaap plato and towards Postmasburg dates to the 1600's (Humphreys, 1976 and Thackeray, 1983). Definite dates for Tswana presence in the Postmasburg area are around 1805 when Lichtenstein visited the area and noted the mining activities of the Tswana (probably the Thlaping) tribes in the area. The Thlaro and Thlaping settled the area from Campbell in the east to Postmasburg and towards the Langeberg close to Olifantshoek in the north-west before 1770 (Snyman, 1988). The Korana expansion after 1770 started to drive the Thlaro and Thlaping further north towards Kuruman (Shillington, 1985); Morris (2005) indicated that three Iron Age sites close to the study area are on record (Demaneng, Lylyveld and Kathu).

### **Historical Background**

The 'Eye' and the water course springing from it have been a focus of utilization and settlement and it was in its immediate vicinity that Kuruman, as town, evolved from the late nineteenth century. Kuruman's name is thought to be derived from the name of an 18<sup>th</sup> century San leader Kudumane.

The earliest documented exploration of this region by European explorers occurred in 1801 when P.J. Truter and Dr. W. Somerville crossed the Orange River near Prieska and traversing through Blinkklip en route to what is now Kuruman (Bergh 1999). In the same period, William Anderson and Cornelius Kramer, representing the London Missionary Society, founded a mission station called Leeuwenkuil. Their primary focus was on a community referred to as 'the Bastards', a group characterized by a mix of cultural backgrounds stemming from various racial and cultural unions, including European and Khoi ancestry, as well as remnants of Khoi and San groups and liberated slaves. This diverse group eventually came to be known as the Griqua (Erasmus, 2004). Due to the persistent threat posed by lions in the vicinity of Leeuwenkuil, the mission station was relocated in 1805 to Klaarwater. In 1813, the settlement that had developed there was officially renamed Griquatown. This change

was proposed by Reverend John Campbell, Director of the London Missionary Society, during his visit to the area (Raper 2004).

On the 20<sup>th</sup> of December 1820, Andries Waterboer was elected to replace Berend Berends as leader of Griquatown. This would lead to tensions between Waterboer and the Griqua and during the 1820s, a group of Griqua left Griquatown and settled along the Modder River and became known as the Bergenaars. The Bergenaars would often attack the Thlaro, Thlaping, and Griqua. They also undertook various attacks on Griquatown and the mission station in Kuruman which Robert Moffat had established in 1824.

A treaty was signed on the 22<sup>nd</sup> of April 1842 between Griqua leader Andries Waterboer and Thlaping leader Mahura at Mahura's settlement near Taungs. This agreement was comprehensive, encompassing an allocation of the boundary between the two groups. However, it's essential to recognize that this boundary line was subject to change and negotiation. This demarcation closely resembled an earlier boundary, believed to have been established during the 1820s, marking the division between the Griqua and the Thlaping (Legassick, 2010).

Following the passing of Andries Waterboer, his son, Nicolaas Waterboer, assumed leadership in Griquatown. Nicolaas governed Griquatown until the British annexed the area in 1871 (Legassick 2010). It was under Nicolaas Waterboer's leadership that diamonds were uncovered in the region, sparking a contentious period of competing claims involving the Griqua, the Orange Free State, and the Zuid-Afrikaansche Republiek (ZAR). The area claimed as British territory became known as Griqualand West. Tensions rose in Griqualand West which sparked a rebellion amongst Tswana communities against the British and spread as far as the Langberg mountains.

The British territory grew as the whole area between Griqualand West and the Modder River was proclaimed the Crown Colony of British Bechuanaland. This included various areas which had been occupied by Tswana communities. This led to various 'native reserves' being established in Deben, Gatlhose, Langberg, and Kathu (Snyman 1986). In 1895, the Crown Colony of British Bechuanaland was annexed by the Cape Colony.

In the late 1890s, Rinderpest became widespread, and the residents were unable to stop the spread of the viral disease in cattle. The Rinderpest epidemic also sparked the Langberg Rebellion of 1897 whereby conflicts rose between authorities and Galeshiwe, a Thlaping leader from Taung. The conflict erupted when government representatives destroyed infected cattle belonging to Galishewe as a measure to halt



the spread of disease. In retaliation, Galishewe killed an officer and fled to seek refuge with the Thlaro leader Toto of the Langberg. This incident triggered a widespread rebellion (Breutz 1963). The British authorities responded by assembling a military force, which included units from the Cape Mounted Rifles and Bechuanaland Field Force. By March 14, 1897, this force numbered approximately 1,000 men. In contrast, the Tswana rebels, facing serious shortages of provisions and ammunition from the outset of the rebellion, fielded an army of around 1,500 men (Snyman 1986). Despite their numerical advantage, the rebels faced a formidable and well-equipped British force supported by artillery. The rebellion was quelled and concluded when rebel leader Toto, along with his son Robanyane and their Thlaro followers, surrendered on the 2nd of August 1897 (Snyman 1986).

### **Palaeontological Background**

The project lies in the Griqualand West Basin of the Transvaal Supergroup with much younger sands and alluvium of the Kalahari Group overlying much of the area.

The Late Archaean to early Proterozoic Transvaal Supergroup is preserved in three structural basins on the Kaapvaal Craton (Eriksson et al., 2006). In South Africa are the Transvaal and Griqualand West Basins, and the Kanye Basin is in southern Botswana. The Griqualand West Basin is divided into the Ghaap Plateau sub-basin and the Prieska sub-basin.

The Transvaal Supergroup comprises one of world's earliest carbonate platform successions (Beukes, 1987; Eriksson et al., 2006; Zeh et al., 2020). In some areas there are well preserved stromatolites that are evidence of the photosynthetic activity of blue green bacteria and green algae. These microbes formed colonies in warm, shallow seas.

The Transvaal Supergroup rocks in the Griqualand West Basin can be correlated with the rocks in the Transvaal Basin, closely according to Beukes and colleagues, or not so closely according to Moore and colleagues. Nonetheless, these rocks represent on a very large scale, a sequence of sediments filling the basins under conditions of lacustrine, fluvial, volcanic and glacial cycles in a tectonically active region. The predominantly carbonaceous sediments are evidence of the increase in the atmosphere of oxygen produced by algal colony photosynthesis, the so-called Great Oxygen Event (ca 2.40 – 2.32 Ga) and precursor to an environment where diverse life forms could evolve. The Neoarchean-Paleoproterozoic Transvaal Supergroup in South Africa contains the well-preserved stromatolitic Campbellrand -Malmani carbonate

platform (Griqualand West Basin – Transvaal Basin respectively), which was deposited in shallow seawater shortly before the Great Oxidation Event (GOE).

There were two large basins dominating southern Africa during the Cenozoic, with the Kalahari Basin to the west and the Bushveld basin to the east. Both basins are bounded along their southern extent by the more or less west-east trending Griqualand-Transvaal Axis (Partridge et al., 2006). These sediments are not easy to date but recent attempts are gradually filling in the history of the sands, sand dunes and inter-dunes (Botha, 2021).

Quaternary Kalahari sands cover large parts of the rocks in this region, especially to the west. This is the largest and most extensive palaeo-erg in the world (Partridge et al., 2006) and is composed of extensive aeolian and fluvial sands, sand dunes, calcrete, scree and colluvium. Periods of aridity have overprinted the sands, and calcrete and silcrete are common. Most geological maps indicate these sands simply descriptively (aeolian sand, gravelly sand, calcrete) or they are lumped together as the Gordonina Formation because the detailed regional lithostratigraphic work has not been done. Nonetheless, these sands have eroded from the interior and have been transported by wind or water to fill the basin. Reworking of the sands or stabilisation by vegetation has occurred. Probable ages of dune formation are around 100 kya (thousand years), 60 kya, 27-23 kya and 17-10 kya (in Botha, 2021).

### *1. Palaeontological Context*

The South African Heritage Resources Agency (SAHRA) compiled the Palaeontological (fossil) Sensitivity Map (PSM) to guide developers, heritage officers and practitioners in screening palaeontologically sensitive areas at the onset of a project. When the footprint of the earmarked properties are placed on the PSM, it confirms that the sites are mostly covered by Kalahari Group sands (moderately sensitive; green) with some patches of Tertiary limestone that is highly sensitive (orange) as presented in the following figures.

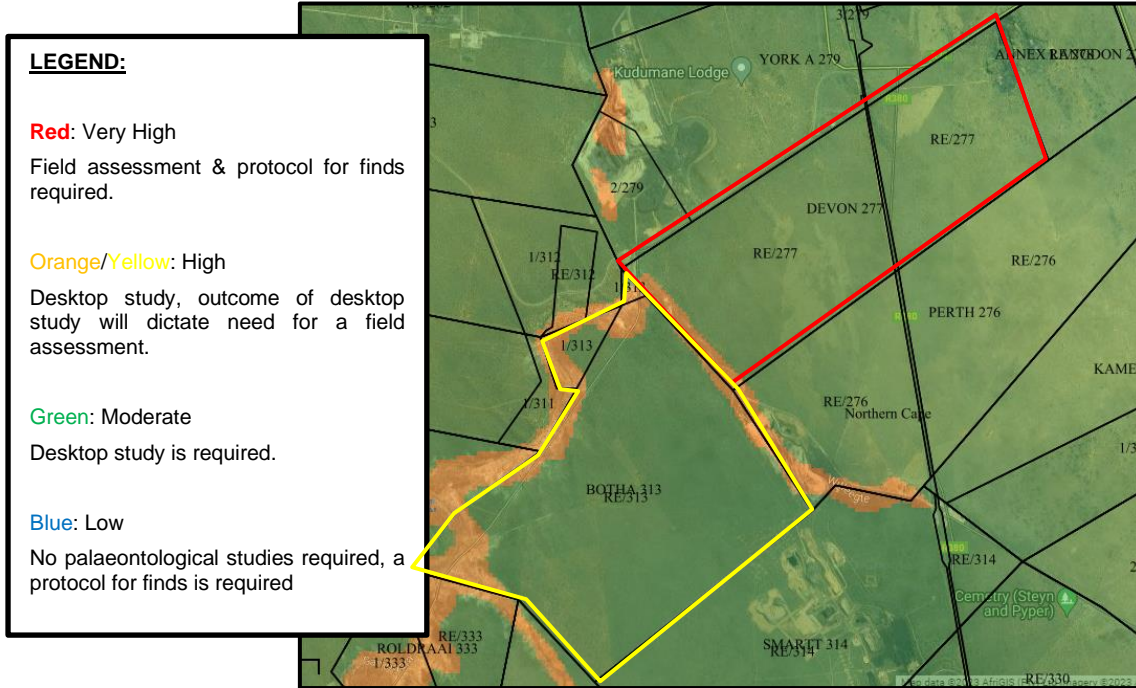


Figure 39: The farms Devon No 277 (red polygon) and Botha No 313 (yellow polygon) extends across areas of moderate – high concern according to the SAHRA palaeontological sensitivity map (image obtained from the PalaeoSensitivity Map on SAHRIS).



Figure 40: The farms Bermolli No 583 (blue polygon) and Engelsdraai No 221 (orange polygon) extends across areas of moderate – high concern according to the SAHRA palaeontological sensitivity map (image obtained from the PalaeoSensitivity Map on SAHRIS).

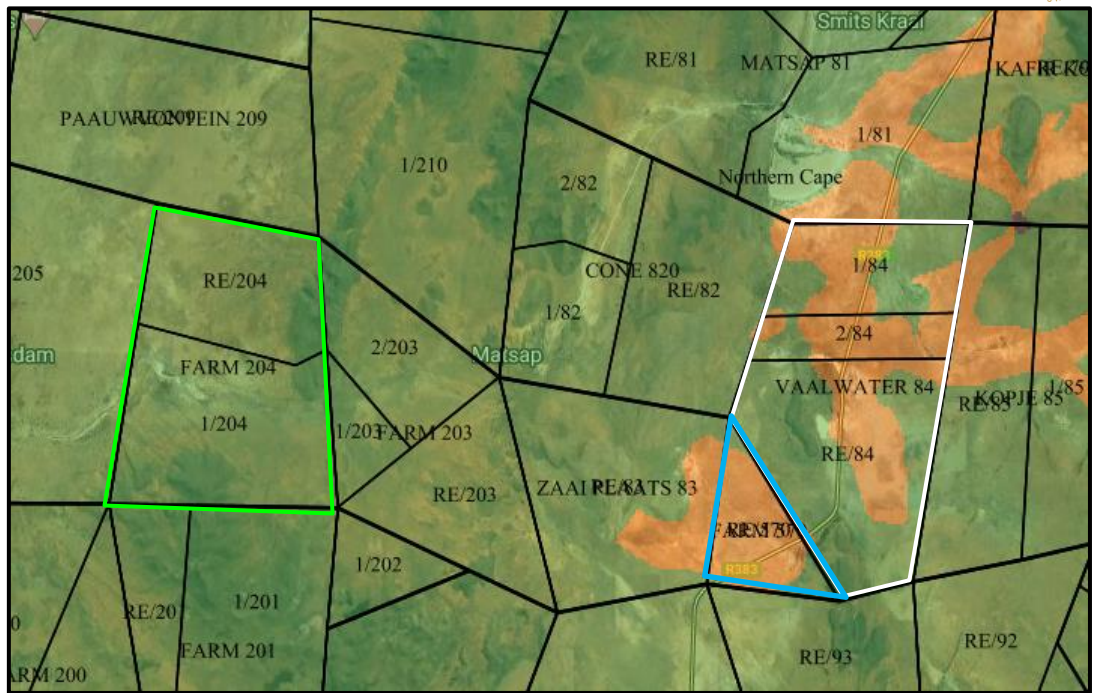


Figure 41: The farms Witdraai No 204 (green polygon), Vaalwater No 84 (white polygon), and Farm No 570 (Zaai Plaats) (blue polygon) extends across areas of moderate – high concern according to the SAHRA palaeontological sensitivity map (image obtained from the PalaeoSensitivity Map on SAHRIS).

Quaternary aeolian sands and alluvium are fairly mobile and very porous so they do not provide suitable conditions for preservation of organic matter (Cowan, 1995). Only in places where the sands have been waterlogged, such as palaeopans or palaeo-springs, is there any chance of fossilisation. For example, roots can be encased in calcium-rich or silica-rich sands and crusts, known as rhizoliths or rhizcretions, and can form around the roots, invertebrates or bones around the margin of a pond, pan or spring (Klappa, 1980; Cramer and Hawkins, 2009; Peters et al., 2022).

The target rock, diatomite (also known as Kieselguhr or diatomaceous earth) has been completely ignored by SAHRA and the authors of the provincial palaeotechnical reports (Groenewald et al., 2014). Mapping of the outcrops is incomplete (Botha, 2021) but it should be indicated as very highly sensitive.

Also refer to *Part A (1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on site – Site Specific Cultural and Heritage Environment.*

## 11. SOCIO-ECONOMIC ENVIRONMENT

*(Information extracted from the Final IDP 2017 – 2022 John Taolo Gaetsewe District Municipality, IDP 2022-2027 Pixley Ka Seme District Municipality, and the ZF Mgcawu District Municipality Draft Integrated Development Plan 2017- 2022 – Annual Review 2018/2019)*

### John Taolo Gaetsewe District Municipality

The farms Devon No 277 and Botha No 313 are within Ward 04 of the Joe Morolong Local Municipality (JMLM) that forms part of the John Taolo Gaetsewe District Municipality (JTGDM). The JTGDM is the second smallest district in the Northern Cape, occupying only 6% of the province. JMLM covers the second largest area of the district municipality. There are 186 towns and settlements of which the majority are villages in the JMLM.

The population of the JTGDM has had an increase of about 17 465; from 2011 to 2016. There has been a major decline of about 6.3% in the population of JMLM that is mainly due to the out-migration from the municipality to the Ga-Segonyana and Gamagara Local Municipalities.

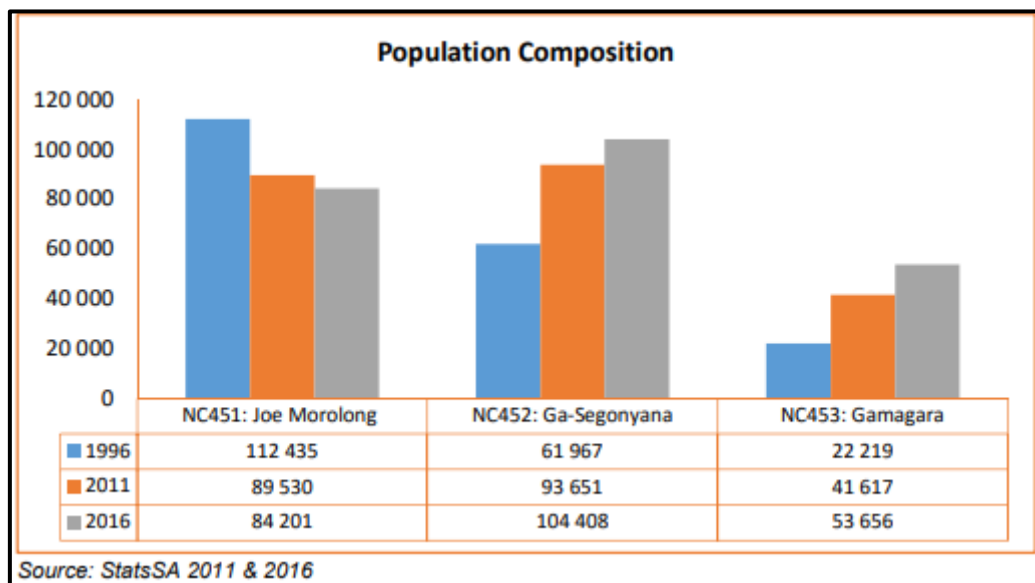


Figure 42: JTGDM population profile (image obtained from the JTGDM IDP).

According to the StatsSA 2016 Community Survey results, the age profile of the JTGDM is as follows: 0 - 14 years: 31.92%; 15 - 64 years: 63.32%; and older than 65: 4.76%. It is not that different from the national profile on Census 2011 (i.e. 0 - 14 years: 31.03%; 15 - 64 years: 63.59%; and older than 65: 5.39%). The figure above shows a generally youthful population between the age segment 15 – 36 of 100 973 people i.e. 41.68%.

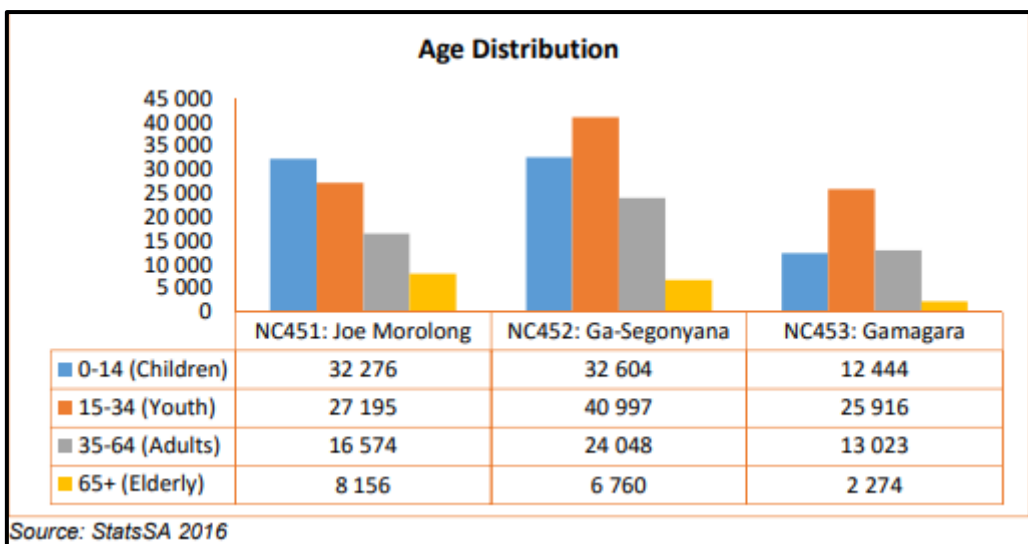


Figure 43: JTGDM age distribution profile (image obtained from the JTGDM IDP).

The gender split in the JTGDM is 49.12% male and 50.88% female. There is generally more females than males in all municipalities except for Gamagara; where there is more males than females, mainly because of the presence of job opportunities that attract men from other areas outside the district.

The racial profile of the JTGDM is as follows: Black/African: 83.52%; Coloured: 10.03%; Asian and Indian: 0.37%; White: 6.07%.

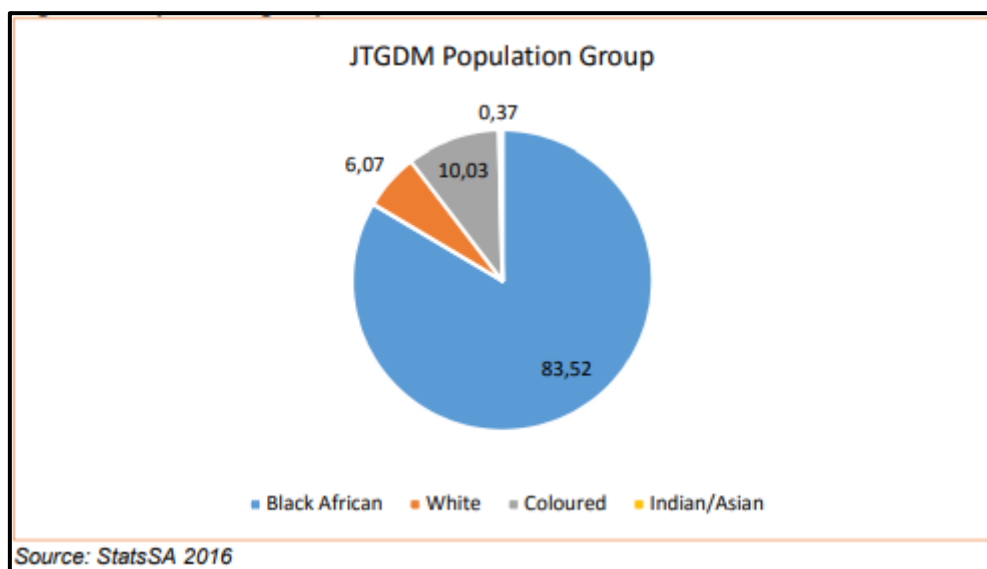


Figure 44: JTGDM population group profile (image obtained from the JTGDM IDP).

Most of the population in JTGDM have not attended any form of schooling (17.6%). Only 15.10% have completed high school (Grade 12) and a very few have completed some form of post-matric qualification.

In 2011, the District had an unemployment rate of 30%. However, this figure does include the discouraged work-seekers which will increase the unemployment rate to 47% if it were to be added. The Joe Morolong Municipality has the highest unemployment rate in the district of 40%.

**Pixley Ka Seme District Municipality**

Farm No 570 (Zaai Plaats) is within the Pixley Ka Seme District Municipality (PKSDM) and extends into wards 1 of the Siyancuma Local Municipality.

Pixley Ka Seme District lies in the south-east of the Northern Cape Province and shares its borders with three other provinces, namely, the Free State province to the east, the Eastern Cape to the south-east and Western Cape to the south-west. It is the second largest district covering a total surface of 96,340 km<sup>2</sup>. It consists of 8 category B municipalities. There are 7 main towns within these municipalities, viz. Douglas, Prieska, Carnarvon, Victoria West, Colesberg, Hopetown and De Aar (with De Aar being the largest of these towns).

1. *Siyancuma Local Municipality (SLM)*

The SLM was established in 2000 as a Category B municipality. The seat of the municipality is in Douglas, and includes the former Transitional Local Councils of Douglas, Griekwastad and Campbell. SLM is basically a farming area, however there are diamonds as well as tiger eye deposits in the Douglas and Griekwastad areas respectively. According to Stats SA the unemployment rate of the municipality is 28.2%.

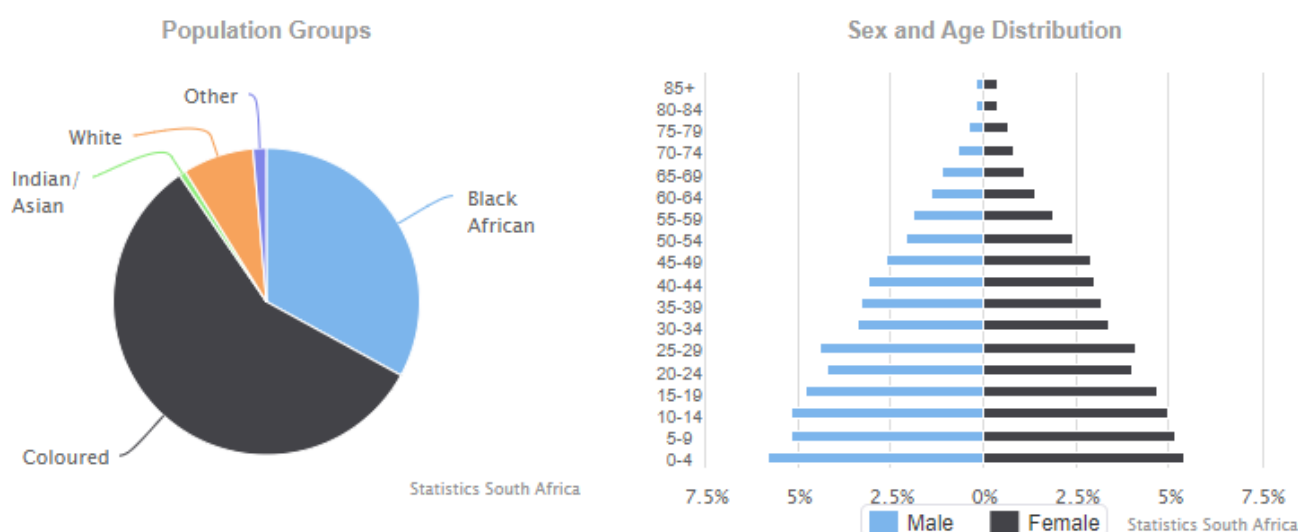


Figure 45: Population groups and gender profile charts of the Siyancuma Local Municipality (image obtained from Statistics South Africa).

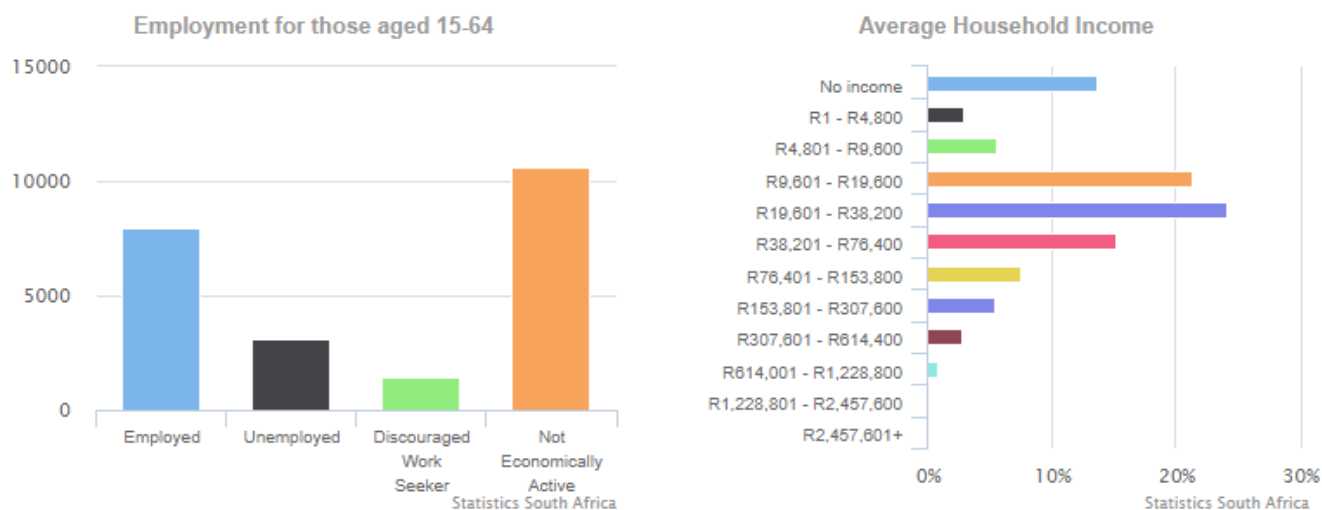


Figure 46: Employment and average household income charts of the Siyancuma Local Municipality (image obtained from Statistics South Africa).

**ZF Mqcowu District Municipality**

The farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204 and Vaalwater No 84 are within wards 1 and 7 respectively of the Tsantsabane Local Municipality (TLM). The TLM is one of six local municipalities within the ZF Mqcowu District Municipality (ZFMDM) that is classified as a Category C municipality of the Northern Cape Province. The seat of the TLM is in Postmasburg with the municipal area including the towns/settlements of Boichoko, Postdene, New Town, Stasie, Groen Water, Skyfontein, Jean Heaven, Marenane, and Beeshoek.

According to the revised population estimates based on the 2011 (Statistics South Africa, 2011), the TLM has a population of 35 093 (compared to the 2001 Census estimate of 27 082). This population accounts for 12% of the total population residing in the ZF Mqcowu District, making it the third most populated local municipality in the district following the //Khara Hais Local Municipality and the Kai Garib Local Municipality. The TLM has a population growth rate of 2.59%, compared to the 17.8% growth rate of the ZFMDM. South Africa is estimated to have an average annual growth rate of 1.4% which is less than that of TLM's growth rate.

**1. Gender Profile**

The Pie Chart below indicates that gender ratio in TLM is comprised of 52.3% males and 47.7% females (StatsSA). The age/sex distribution of the TLM shows the highest number of people in the TLM area between the age of 0 – 29 years of age.



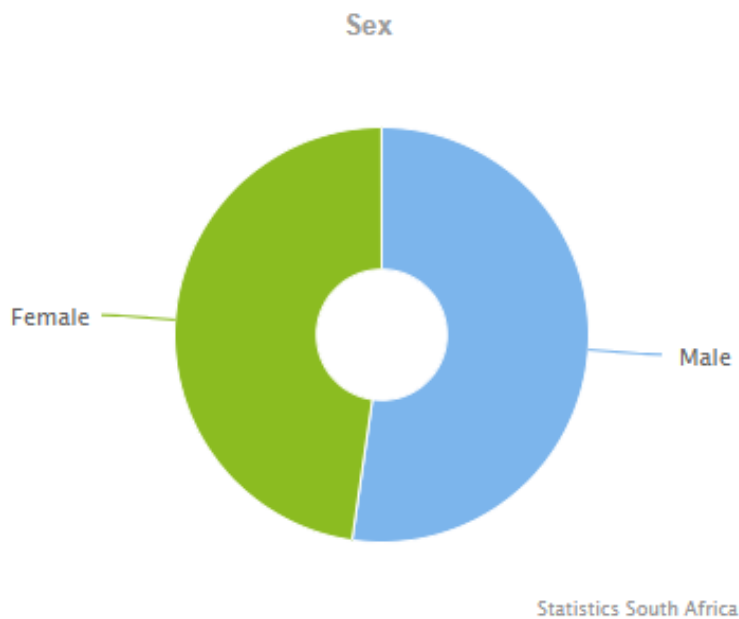


Figure 47: Gender profile (image obtained from Statistics South Africa).

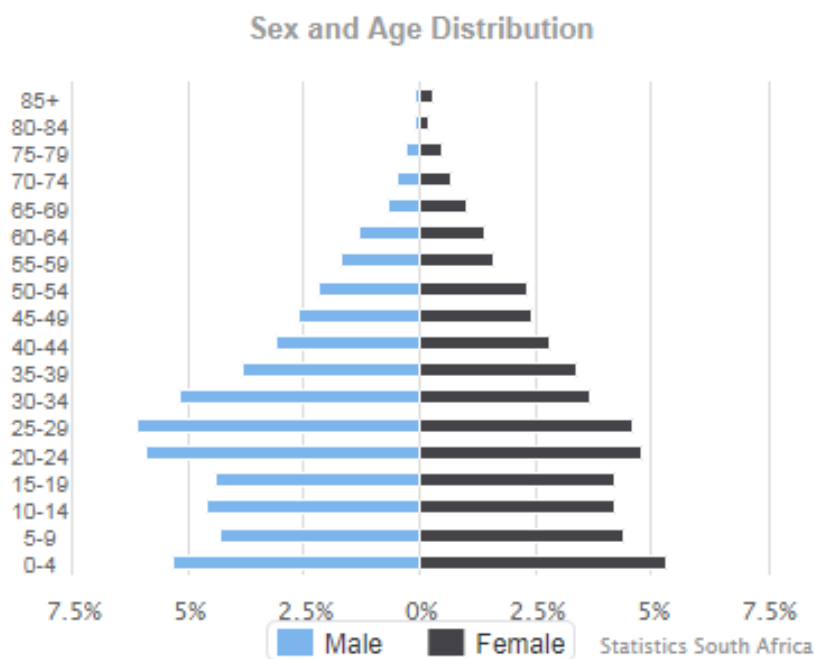


Figure 48: Gender and age distribution profile (image obtained from Statistics South Africa).

## 2. Population Profile

Below is a pie chart which indicates the total black African population of TLM at 52.8%, Coloured at 37.6%, Asian/Indian at 0.6% and White population at 8.4%. The Indian/Asian and others form the lowest proportions of the population with the former accounting for 0.6% and the latter 0.6%.

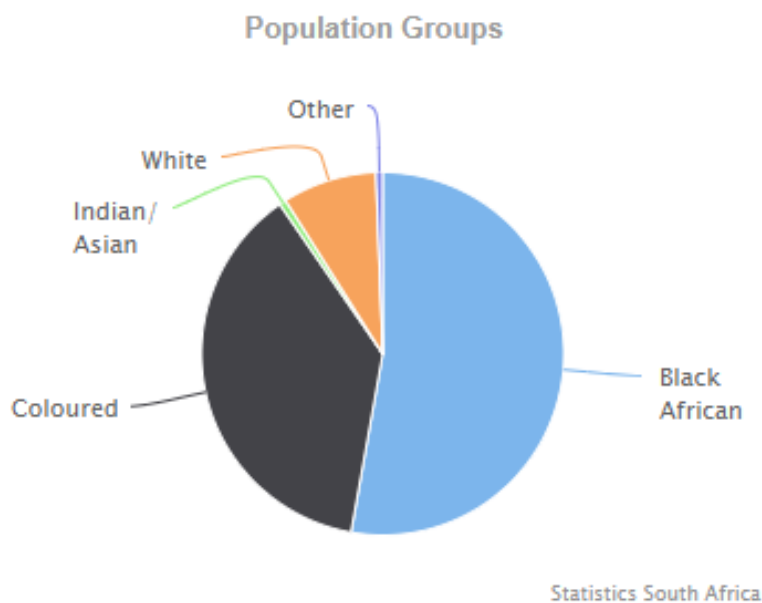


Figure 49: Population profile of the Tsantsabane municipal area (image obtained from Statistics South Africa).

### 3. Economic Profile

The TLM is well known for being rich in minerals, and for its mining, agriculture, manufacturing, and farming sectors. The construction of the Anglo American Kumba Iron Ore’s Kolomela mine has brought an implosion of development to the area. Eighteen point five percent of the average household income of the TLM range between R 19 601 – R 38 200, followed by an average income of R 38 201 – R 76 400 at 16.5%, while 14.2% of the households registered an income of R 74 401 – R 153 800 as shown below.

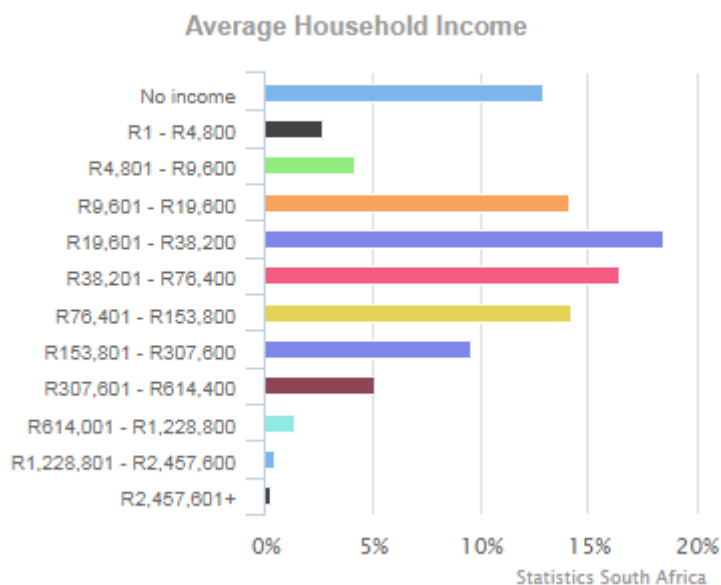


Figure 50: Average Household Income profile of the Tsantsabane municipal area (image obtained from Statistics South Africa).

The 2011 statistics showed a considerable decrease in the youth unemployment rate of the municipality from 43.1%, in 2001, to 32.3%. The average unemployment rate of the TLM decreased from 33.9% (2001) to 26.1% in 2011.

The ZFMMDM accounts for 30% of the Northern Cape economy. As mentioned earlier, the economic activities of the TLM comprise of Agriculture, Livestock Farming, Irrigation Farming, Tourism & Heritage, Eco-adventures and Safaris, and Mining. The main agriculture related activity is livestock farming that occurs mainly on large farms, because of the low carrying capacity, where farming is extensive and mainly privately owned. The tourism industry is noted as the fastest growing component of the economy of the ZFMMDM (2012 – 2017). Mining is one of the major sectors in the ZFMMDM and is found in all municipalities. Within the TLM limestone, asbestos, iron, manganese, and gemstones (diamonds) are mined.

#### 4. Education Levels

Thirteen point seven percent of the population above the age of 20 has no schooling, 25.3% has obtained matric and 6.3% obtained higher education. The matric rate increased from 16.7% in 2001 to 25.3% in 2011, the no schooling rate decreased from 24.2% to 13.7% and the Higher Education increased from 4.1% to 6.3%.

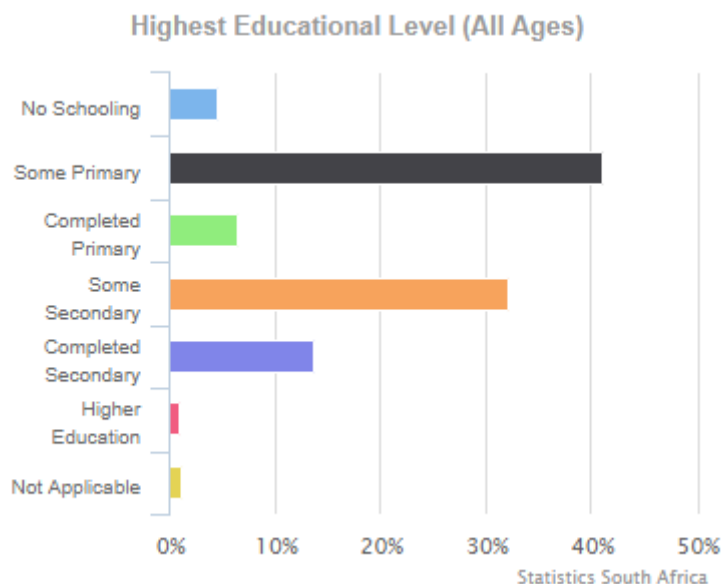


Figure 51: Average Household Income profile of the Tsantsabane municipal area (image obtained from Statistics South Africa).

Also refer to Part A(1)(u)(i)(1) Impact on the socio-economic conditions of any directly affected persons.

**(b) Description of the current land uses**

**1. DEVON NO 277 & BOTHA NO 313**

The farms Devon No 277 and Botha No 313 are south of Hotazel with the R31 passing along the northern boundary of Devon No 277 and the R380 passing through the farm. Both these farms are surrounded by mining operations such as the old Devon Manganese Pit that extends into the north-eastern boundary of Devon No 277, the Kgalagadi Mine north-west of the farm and the Sebilo Mine south of Devon No 277 and north-east of Botha No 313. The United Manganese Mine is further south-east of Botha No 313.

Both properties are presently used for agricultural (grazing) purposes although the properties are owned by mining companies (Kudumane Manganese Resources (KMR) & United Manganese of Kalahari (UMK) respectively). According to correspondence received on behalf of KMR the farm Devon No 277 is earmarked for the development of an authorised waste dump on the western side of the farm, as well as concurrent rehabilitation activities at the Devon pit. KMR also intends to expand mining operations (including underground mining) to the orebody on Devon No 277 and develop a blasting contractors site on the eastern side of the farm.

Portion 1 of Devon No 277 is directly south of the Hotazel Station precinct and the proposed PR footprint crosses the railway line over Land Asset No KH0327 owned by Transnet. A pipeline servitude 4 km in length passes the northern most corner of the farm Devon No 277 but falls outside the PR footprint.

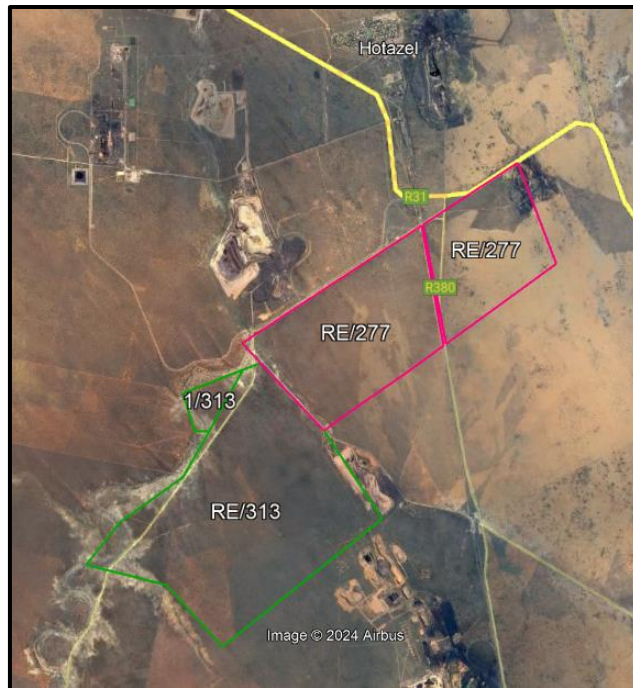


Figure 52: Satellite view of the farm boundaries where the pink polygons indicate the boundaries of the farm Devon No 277, and the green polygons show the portions of Botha No 313 (image obtained from Google Earth).

The following images show the land capability of the farms Devon No 277 and Botha No 313 as presented in the DFFE Screening Report.

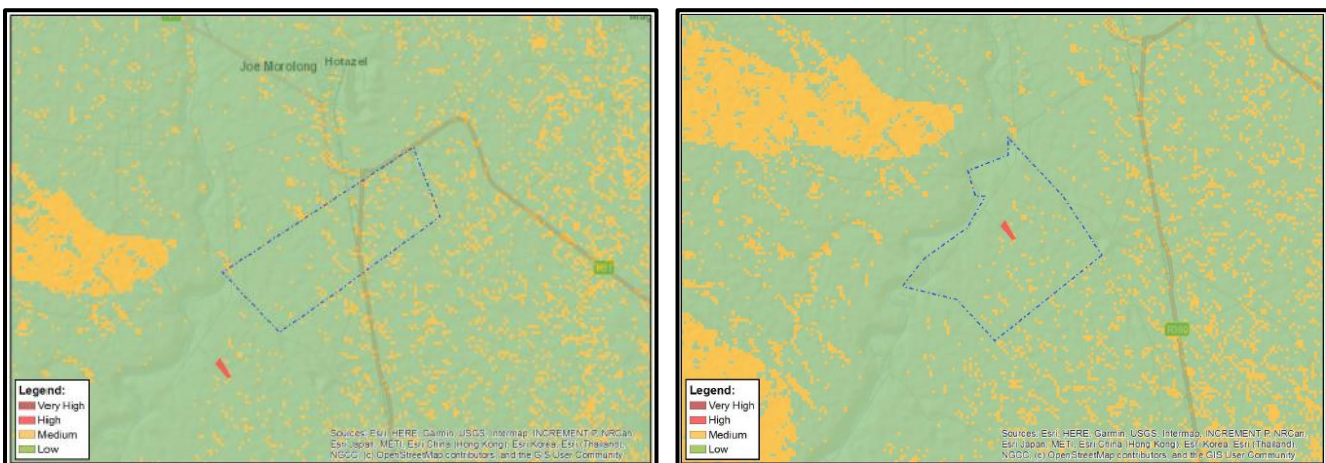


Figure 53: Agricultural Theme Sensitivity of the farm Devon No 277 (left pane) and Botha No 313 (right pane) according to the DFFE screening report.

The surrounding land use includes agriculture, mining, transport (provincial roads & rail), as well as the town of Hotazel. Kudumane Lodge is ±1 km from the north-western

boundary of Devon No 277. The following table provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the two mentioned properties.

Table 14: Land uses and/or prominent features that occur within 500 m radius of the farm Devon No 277 and Botha No 313.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	YES	-	The proposed footprint is surrounded by natural areas used for agricultural purposes.
Low density residential	-	NO	-
Medium density residential	-	NO	-
High density residential	-	NO	-
Informal residential	-	NO	-
Retail commercial & warehousing	-	NO	-
Light industrial	-	NO	-
Medium industrial	-	NO	-
Heavy industrial	-	NO	-
Power station	-	NO	-
High voltage power line	YES	-	Powerlines associated with the railway are present in the area.
Office/consulting room	-	NO	-
Military or police base / station / compound	-	NO	-
Spoil heap or slimes dam	YES	-	The stockpiles and settling dams of the various mines are within 500 m of the earmarked farms.
Quarry, sand or borrow pit	YES	-	There are various mines within 500 m of the earmarked farms.
Dam or reservoir	YES	-	Various farm dams are within 500 m of the footprint.
Hospital/medical centre	-	NO	-
School/ crèche	-	NO	-
Tertiary education facility	-	NO	-
Church	-	NO	-
Old age home	-	NO	-
Sewage treatment plant	-	NO	-
Train station or shunting yard	-	NO	The Hotazel Station precinct is more than 500 m north of the proposed PR footprint.
Railway line	YES	-	The railway line passes through Portion 1 of Devon No 277.
Major road (4 lanes or more)	-	NO	-
Airport	-	NO	-
Harbour	-	NO	-
Sport facilities	-	NO	-
Golf course	-	NO	-
Polo fields	-	NO	-
Filling station	-	NO	-
Landfill or waste treatment site	-	NO	-
Plantation	-	NO	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Agriculture	YES	-	The earmarked properties are used for agricultural purposes.
River, stream, or wetland	YES	-	The Witleegte and Ga-Mogara Streams pass through the earmarked properties.
Nature conservation area	-	NO	-
Mountain, hill, or ridge	YES	-	Various low hills/ridges cross through the farms.
Museum	-	NO	-
Historical building	To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of a historical building unless otherwise authorised by the specialist and SAHRA.		
Protected Area	-	NO	-
Graveyard	At least one grave was note on the farm Devon No 277.		
Archaeological site	To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of a grave/archaeological site unless otherwise authorised by the specialist and SAHRA.		
Other land uses (describe)	YES	-	A pipeline servitude 4 km in length passes the northern corner of the proposed PR footprint.

## 2. BERMOLLI NO 583 & ENGELSDRAAI NO 221

A provincial gravel road leading to the Kolomela mine cuts through Bermolli No 583 and Engelsdraai No 221 before joining up with the N8 in the south. The land use of these two farms are mainly agriculture with small scale historic mining on Bermolli No 583. The Kolomela 2 Mine is ±9 km north-east of Bermolli No 583. According to CDH (acting on behalf of SIOC) Portion 4 and 5 of Bermolli No 583 have been earmarked as “candidate” offset receiving areas as part of the Kolomela Biodiversity Offset Area.



Figure 54: Satellite view of the farm boundaries where the blue polygons indicate the boundaries of the farm Bermolli No 583, and the orange polygons show the portions of Engelsdraai No 221. The red numbers indicate the portions of the farms earmarked for potential invasive prospecting. (image obtained from Google Earth).

The following images show the land capability of the farms Bermolli No 583 and Engelsdraai No 221 as presented in the DFFE Screening Report.

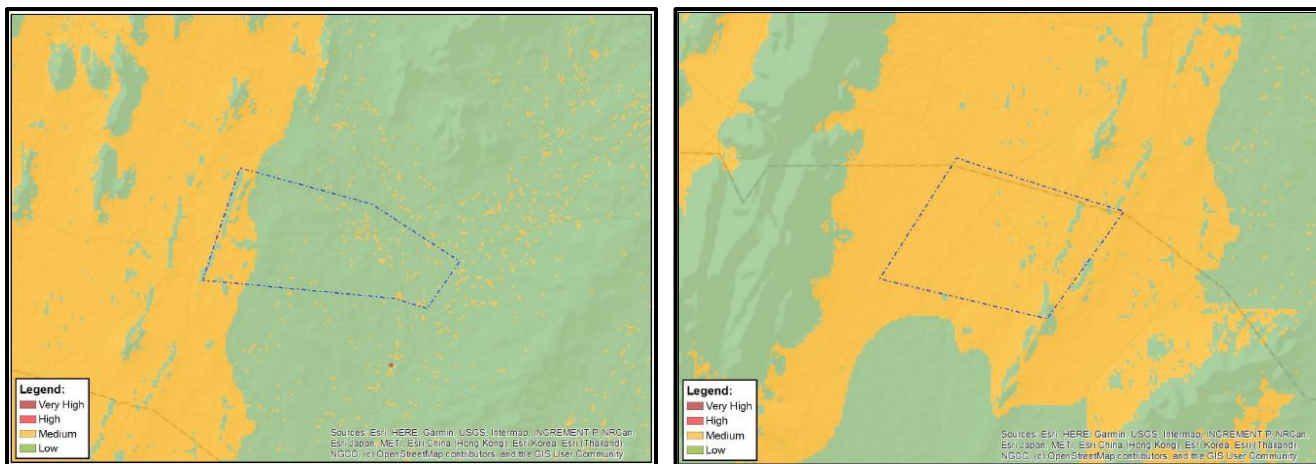


Figure 55: Agricultural Theme Sensitivity of the farm Bermolli No 583 (left pane) and Engelsdraai No 221 (right pane) according to the DFFE screening report.

The following table provides a list of the land uses and/or prominent features that were identified within a 500 m radius of the farms Bermolli No 583 and Engelsdraai No 221.



Table 15: Land uses and/or prominent features that occur within 500 m radius of the farms Bermolli No 583 and Engelsdraai No 221.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	YES	-	The proposed footprint is surrounded by natural areas used for agricultural purposes.
Low density residential	-	NO	-
Medium density residential	-	NO	-
High density residential	-	NO	-
Informal residential	-	NO	-
Retail commercial & warehousing	-	NO	-
Light industrial	-	NO	-
Medium industrial	-	NO	-
Heavy industrial	-	NO	-
Power station	-	NO	-
High voltage power line	-	NO	-
Office/consulting room	-	NO	-
Military or police base / station / compound	-	NO	-
Spoil heap or slimes dam	-	NO	-
Quarry, sand or borrow pit	YES	-	Some informal sand- and gravel borrow pits may occur on the farms.
Dam or reservoir	YES	-	Various farm dams are within 500 m of the footprint.
Hospital/medical centre	-	NO	-
School/ crèche	-	NO	-
Tertiary education facility	-	NO	-
Church	-	NO	-
Old age home	-	NO	-
Sewage treatment plant	-	NO	-
Train station or shunting yard	-	NO	-
Railway line	-	NO	-
Major road (4 lanes or more)	-	NO	-
Airport	-	NO	-
Harbour	-	NO	-
Sport facilities	-	NO	-
Golf course	-	NO	-
Polo fields	-	NO	-
Filling station	-	NO	-
Landfill or waste treatment site	-	NO	-
Plantation	-	NO	-
Agriculture	YES	-	The earmarked properties are used for agricultural purposes.
River, stream, or wetland	YES	-	Various unnamed drainage lines pass through the properties. The farms also has pans in some areas.
Nature conservation area	-	NO	-
Mountain, hill, or ridge	-	NO	-
Museum	-	NO	-
Historical building	To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of		

LAND USE CHARACTER	YES	NO	DESCRIPTION
			a historical building unless otherwise authorised by the specialist and SAHRA.
Protected Area	-	<b>NO</b>	-
Graveyard			Family graveyards were noted on Engelsdraai No 221.
Archaeological site			To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of a grave/archaeological site unless otherwise authorised by the specialist and SAHRA
Other land uses (describe)	-	<b>NO</b>	-

**3. WITDRAAI NO 204, VAALWATER NO 84 AND FARM NO 570 (ZAAI PLAATS)**

The land use of the farms Witdraai No 204, Vaalwater No 84, and Farm No 570 (Zaai Plaats) is mainly agriculture with small scale historic mining in some areas. There are no established mines within proximity to these two properties. The R383 passes through the centre of Vaalwater No 84 and Farm No 570 (Zaai Plaats).

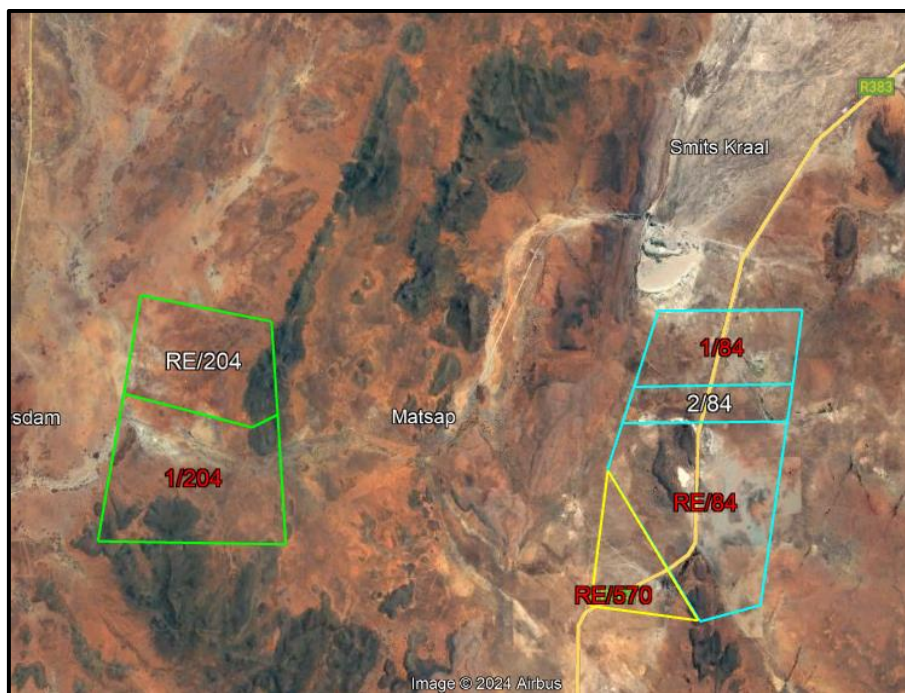


Figure 56: Satellite view of the farm boundaries where the green polygons indicate the boundaries of the farm Witdraai No 204, the blue polygons show the portions of Vaalwater No 84, and the yellow polygon indicates Farm No 570 (Zaai Plaats). The red numbers indicate the portions of the farms earmarked for potential invasive prospecting. (image obtained from Google Earth).

The following images show the land capability of the farms Witdraai No 204, Vaalwater No 84 and Farm No 570 (Zaai Plaats) as presented in the DFFE Screening Report.

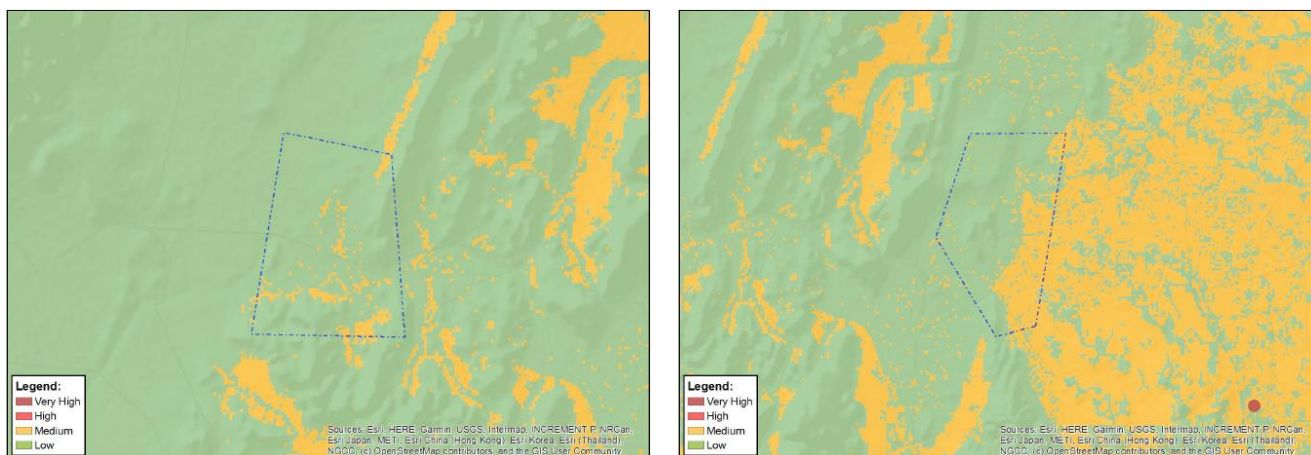


Figure 57: Agricultural Theme Sensitivity of the farm Witdraai No 204 (left pane) and Vaalwater No 84 (right pane) according to the DFFE screening report.

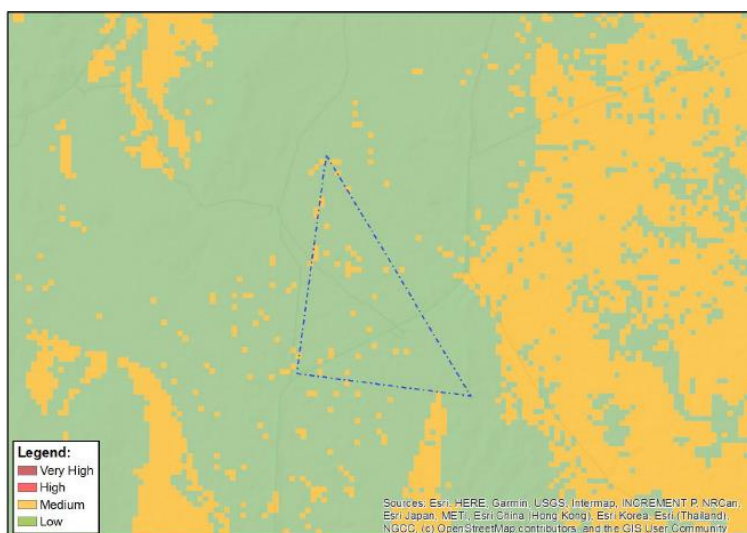


Figure 58: Agricultural Theme Sensitivity of Farm No 570 (Zaai Plaats) according to the DFFE screening report.

The following table provides a description of the land uses and/or prominent features that currently occur within a 500 m radius of the farms Witdraai No 204, Vaalwater No 84, and Farm No 570 (Zaai Plaats):

Table 16: Land uses and/or prominent features that occur within 500 m radius of Witdraai No 204, Vaalwater No 84, and Farm No 570 (Zaai Plaats).

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	<b>YES</b>	-	The proposed footprint is surrounded by natural areas used for agricultural purposes.
Low density residential	-	<b>NO</b>	-
Medium density residential	-	<b>NO</b>	-
High density residential	-	<b>NO</b>	-
Informal residential	-	<b>NO</b>	-
Retail commercial & warehousing	-	<b>NO</b>	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Light industrial	-	NO	-
Medium industrial	-	NO	-
Heavy industrial	-	NO	-
Power station	-	NO	-
High voltage power line	-	NO	-
Office/consulting room	-	NO	-
Military or police base / station / compound	-	NO	-
Spoil heap or slimes dam	-	NO	-
Quarry, sand or borrow pit	YES	-	Some informal sand- and gravel borrow pits may occur on the farms.
Dam or reservoir	YES	-	Various farm dams are within 500 m of the footprint.
Hospital/medical centre	-	NO	-
School/ crèche	-	NO	-
Tertiary education facility	-	NO	-
Church	-	NO	-
Old age home	-	NO	-
Sewage treatment plant	-	NO	-
Train station or shunting yard	-	NO	-
Railway line	-	NO	-
Major road (4 lanes or more)	-	NO	-
Airport	-	NO	-
Harbour	-	NO	-
Sport facilities	-	NO	-
Golf course	-	NO	-
Polo fields	-	NO	-
Filling station	-	NO	-
Landfill or waste treatment site	-	NO	-
Plantation	-	NO	-
Agriculture	YES	-	The earmarked properties are used for agricultural purposes.
River, stream, or wetland	YES	-	Various unnamed drainage lines pass through the properties. The farms also has pans in some areas.
Nature conservation area	-	NO	-
Mountain, hill, or ridge	YES	-	Hills are prevalent on the farms Witdraai No 204 and Vaalwater No 84.
Museum	-	NO	-
Historical building	To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of a historical building unless otherwise authorised by the specialist and SAHRA.		
Protected Area	-	NO	-
Graveyard	Family graveyards were noted on Vaalwater No 84.		
Archaeological site	To be confirmed during the walkthrough of the heritage specialist prior to commencement of invasive prospecting. No prospecting may occur within 30 m of		

LAND USE CHARACTER	YES	NO	DESCRIPTION
			a grave/archaeological site unless otherwise authorised by the specialist and SAHRA.
Other land uses (describe)	-	<b>NO</b>	-

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

**1. SITE SPECIFIC TOPOGRAPHY**

**Devon No 277 & Botha No 313**

The topography of Devon No 277 gradually decreases from the highest north-eastern corner towards the lowest corner in the south-west as shown in the following figure. The mean elevation of the farm ranges from 1 082 amsl to 1038 amsl. As shown in the following figure the elevation gain of the farm is 25.5 m over 7.09 km (north-eastern to south-western corner), the elevation profile shows a maximum slope of 11.2% with an average slope of 1.0%.

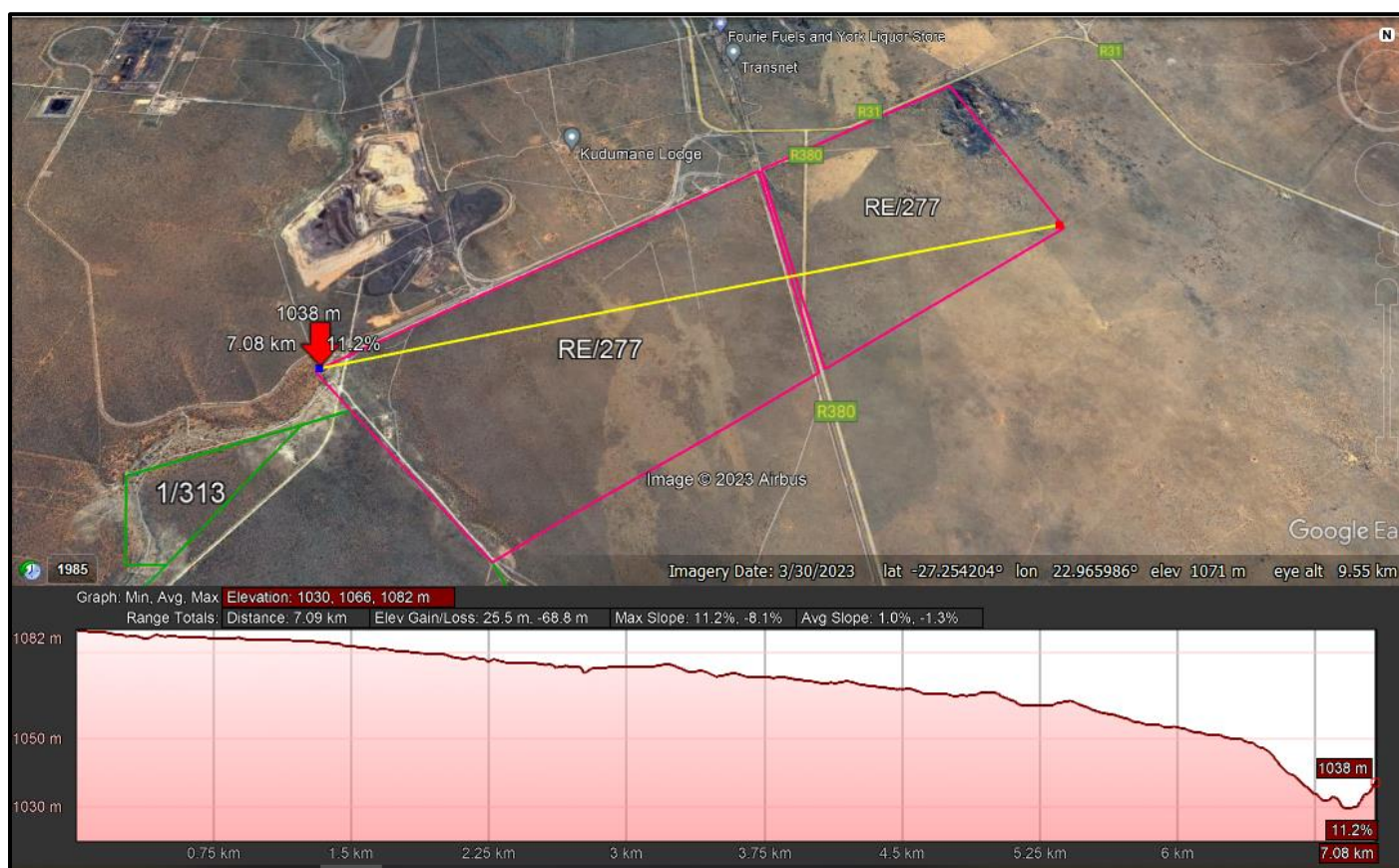


Figure 59: Elevation profile of the farm Devon No 277 (image obtained from Google Earth).

The topography of Botha No 313 gradually slopes from the higher laying south-eastern side down towards the Ga-Mogara stream along the north-western boundary as shown in the following figure. The mean elevation of the farm ranges

from 1 070 amsl to 1035 amsl. As shown in the following figure the elevation gain of the farm is 54 m over 4.87 km (north-western boundary to the south-eastern one), the elevation profile shows a maximum slope of 12.7% with an average slope of 1.5%.



Figure 60: Elevation profile of the farm Botha No 313 (image obtained from Google Earth).

### **Bermolli No 583 & Engelsdraai No 221**

The topography of Bermolli No 583 gradually slopes from the higher laying north-western side down towards the drainage line that passes through the farm where after the landscape remains flat up to the eastern boundary as shown in the following figure. The mean elevation of the farm ranges from 1 220 amsl to 1 152 amsl. As shown in the following figure the elevation gain of the farm is 35.2 m over 9.15 km (north-western boundary to the eastern one), the elevation profile shows a maximum slope of 4.4% with an average slope of 1.1%.

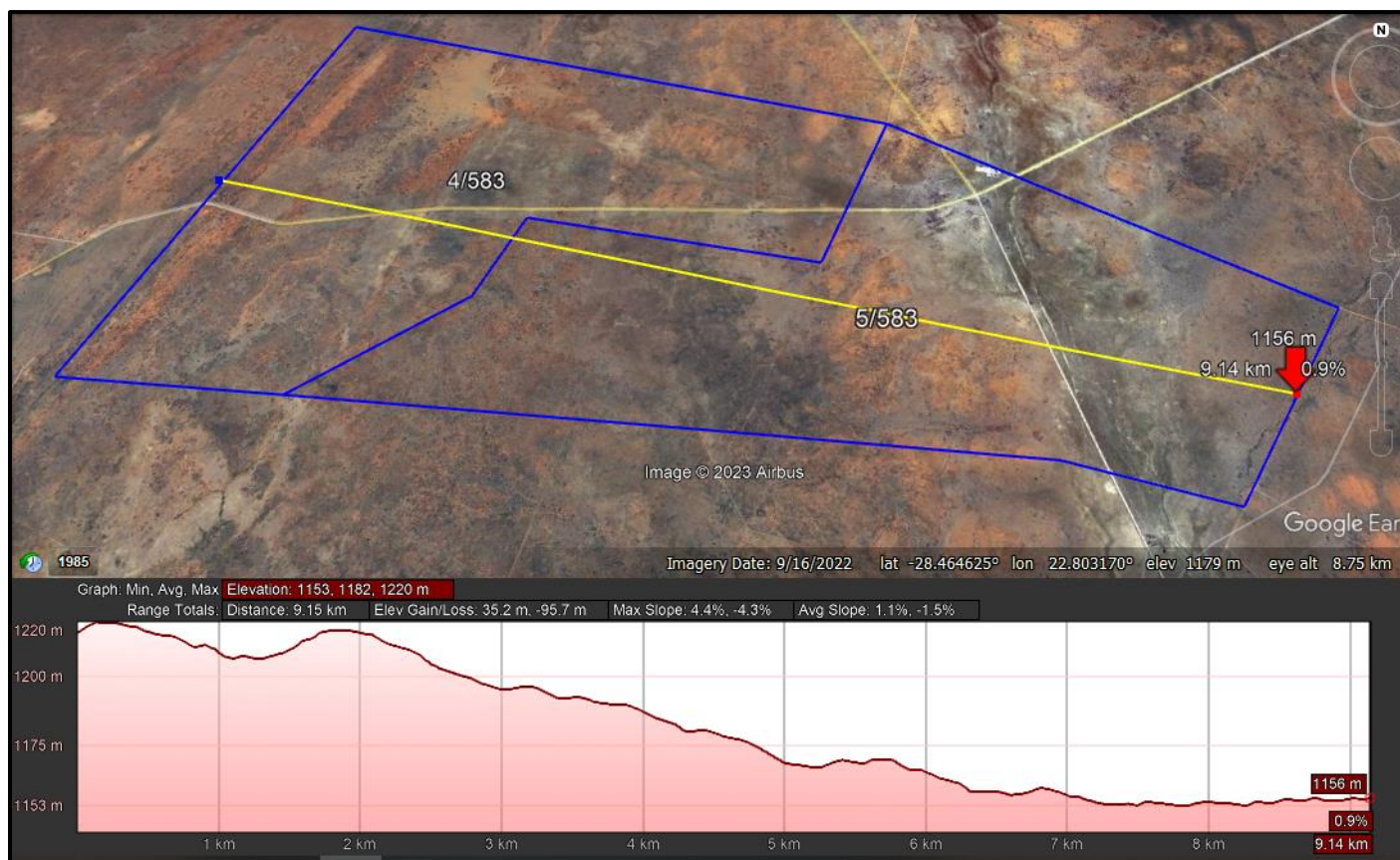


Figure 61: Elevation profile of the farm Bermolli No 583 (image obtained from Google Earth).

The topography of Engelsdraai No 221 is the highest at the south-eastern corner gradually sloping towards the drainage line in the middle of the property, whereafter the elevation remains relatively flat towards the north-western boundary as shown in the following figure. The mean elevation of the farm ranges from 1 209 amsl to 1 180 amsl. As shown in the following figure the elevation gain of the farm is 30.4 m over 6.54 km (south-western corner to the north-western one), the elevation profile shows a maximum slope of 3.6% with an average slope of 0.9%.

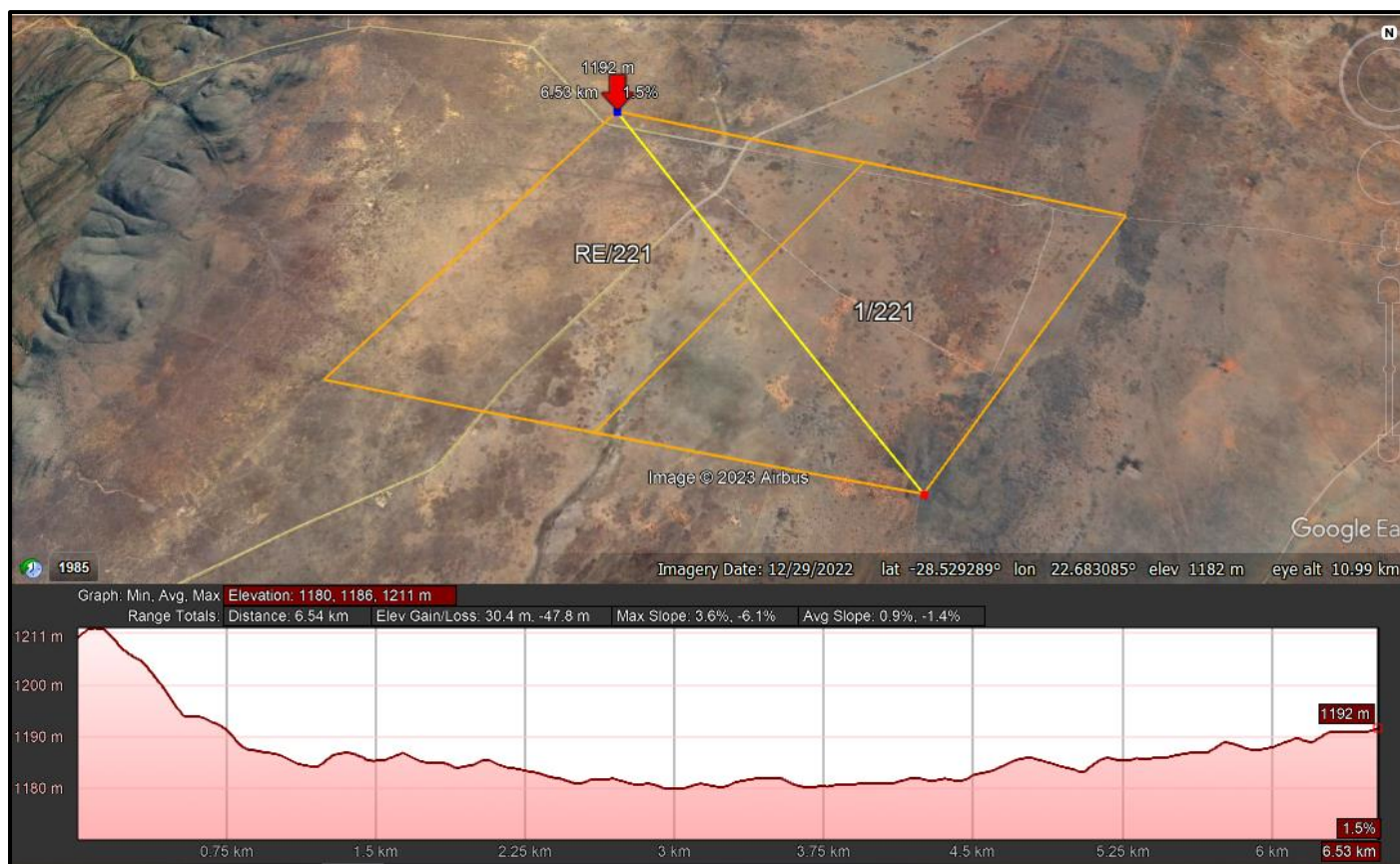


Figure 62: Elevation profile of the farm Engelsdraai No 221 (image obtained from Google Earth).

**Witdraai No 204, Vaalwater No 84 and Farm No 570 (Zaai Plaats)**

The topography of Witdraai No 204 remains relatively flat when measured from the north-western corner to the south-eastern one. Two ridges enter the property at the north-eastern and south-western corners respectively that natural increases elevation for the length of the ridge as shown in the following figure. The mean elevation of the farm (excluding the ridges) ranges from 1 109 amsl to 1 071 amsl. As shown in the following figure the elevation gain of the farm along this path is 75.2 m over 7.84 km (south-eastern corner to the north-western one), the elevation profile shows a maximum slope of 10.1% with an average slope of 1.5%.



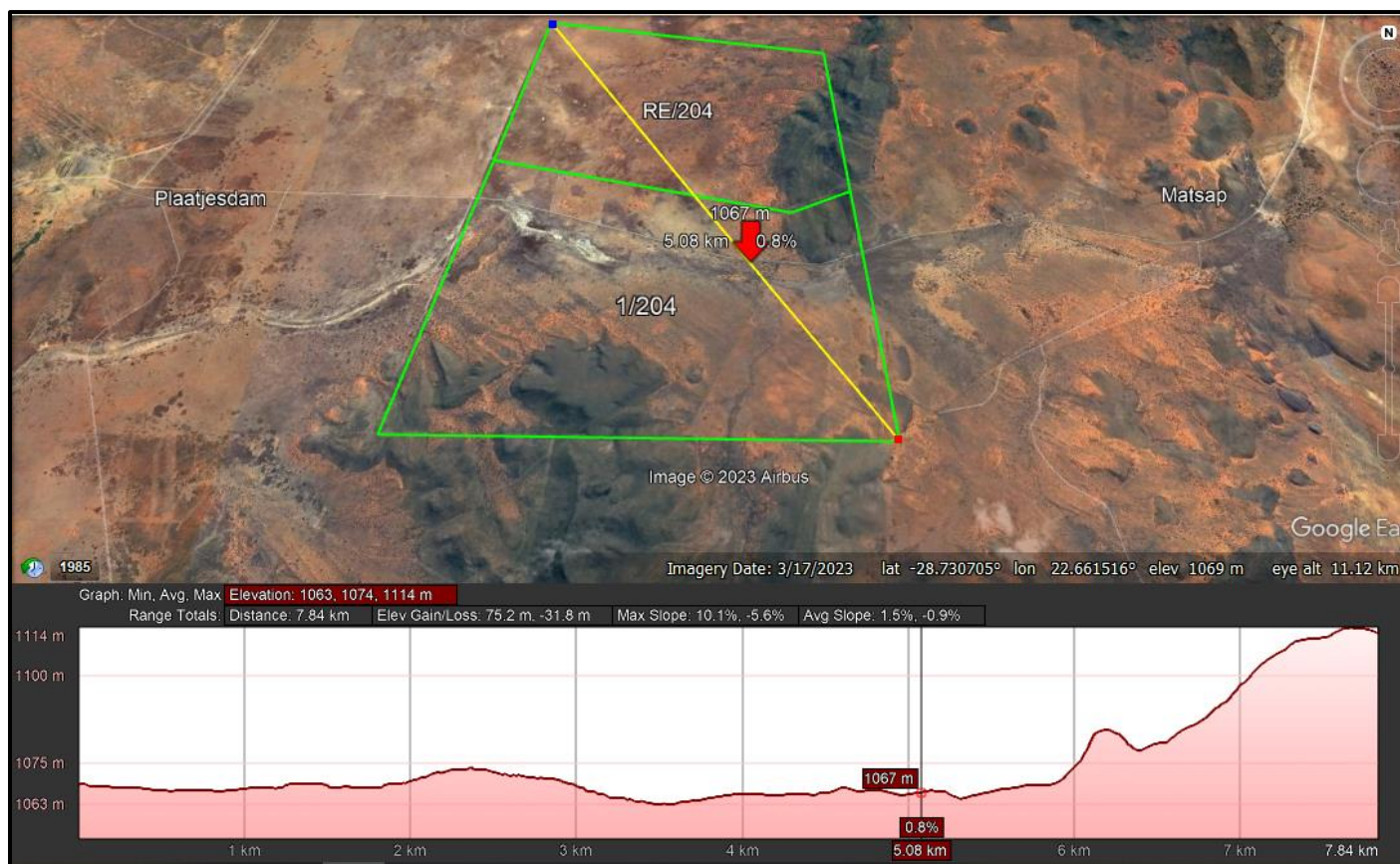


Figure 63: Elevation profile of the farm Witdraai No 204 (image obtained from Google Earth).

The topography of Vaalwater No 84 is relatively flat except for the hills to the south as shown in the following figure. The pans and surroundings remain more or less on the same elevation. The mean elevation of the farm (including the ridge to the south) ranges from 1 153 amsl to 1 101 amsl. As shown in the following figure the elevation gain of the farm along this path is 56.3 m over 15.5 km (southern corner, north-western corner and then to the western corner), the elevation profile shows a maximum slope of 2.6% with an average slope of 0.7%.

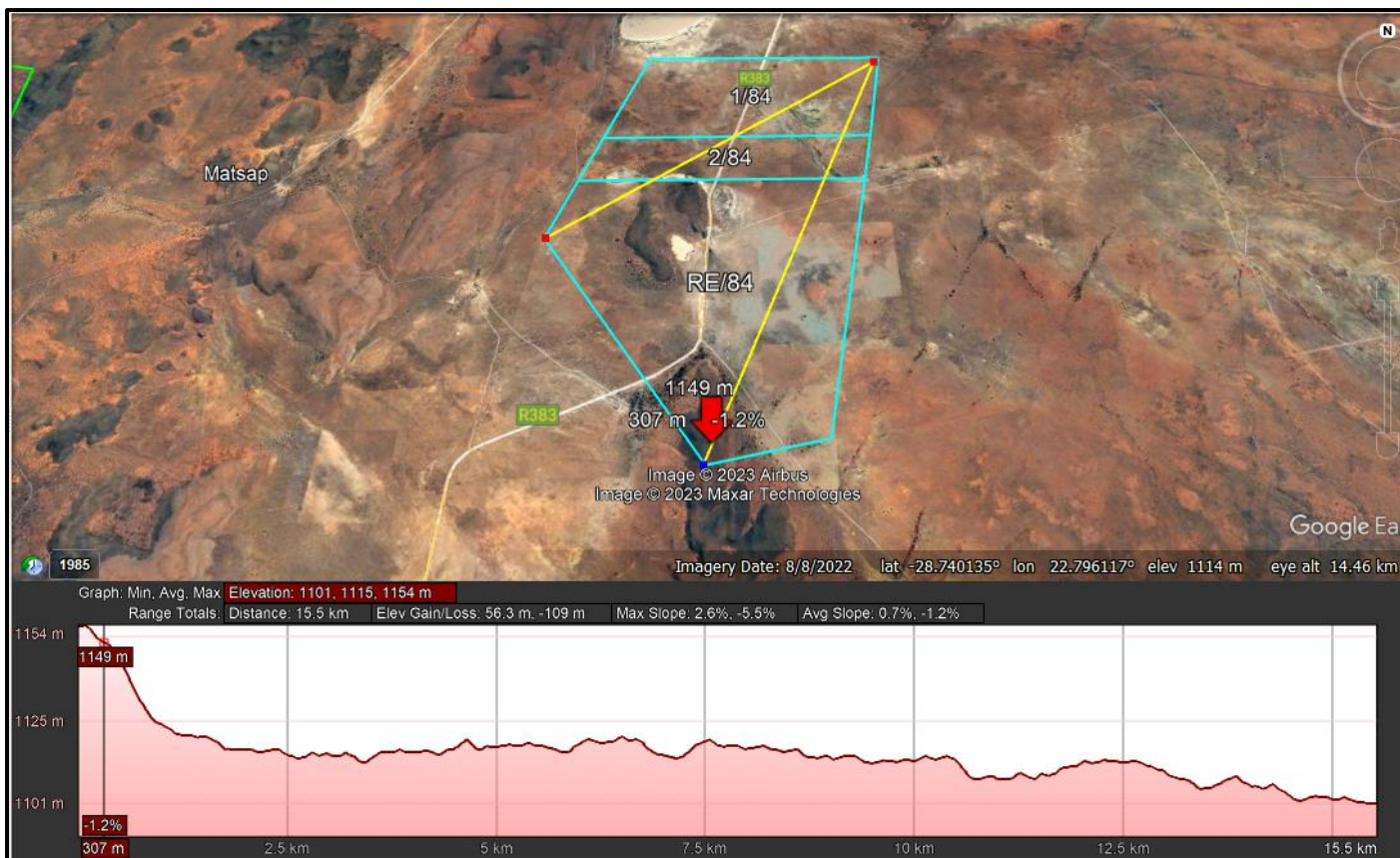


Figure 64: Elevation profile of the farm Vaalwater No 84 (image obtained from Google Earth).

The topography of Farm No 570 (Zaai Plaats) rises gradually toward the south-eastern corner where it intersects the nearby hills. The mean elevation of the farm ranges from 1 098 amsl to 1 154 amsl. As shown in the following figure the elevation gain of the farm along this path is 60.9 m over 3.12 km (western boundary to the south-eastern corner), the elevation profile shows a maximum slope of 6.4% with an average slope of 2.4%.

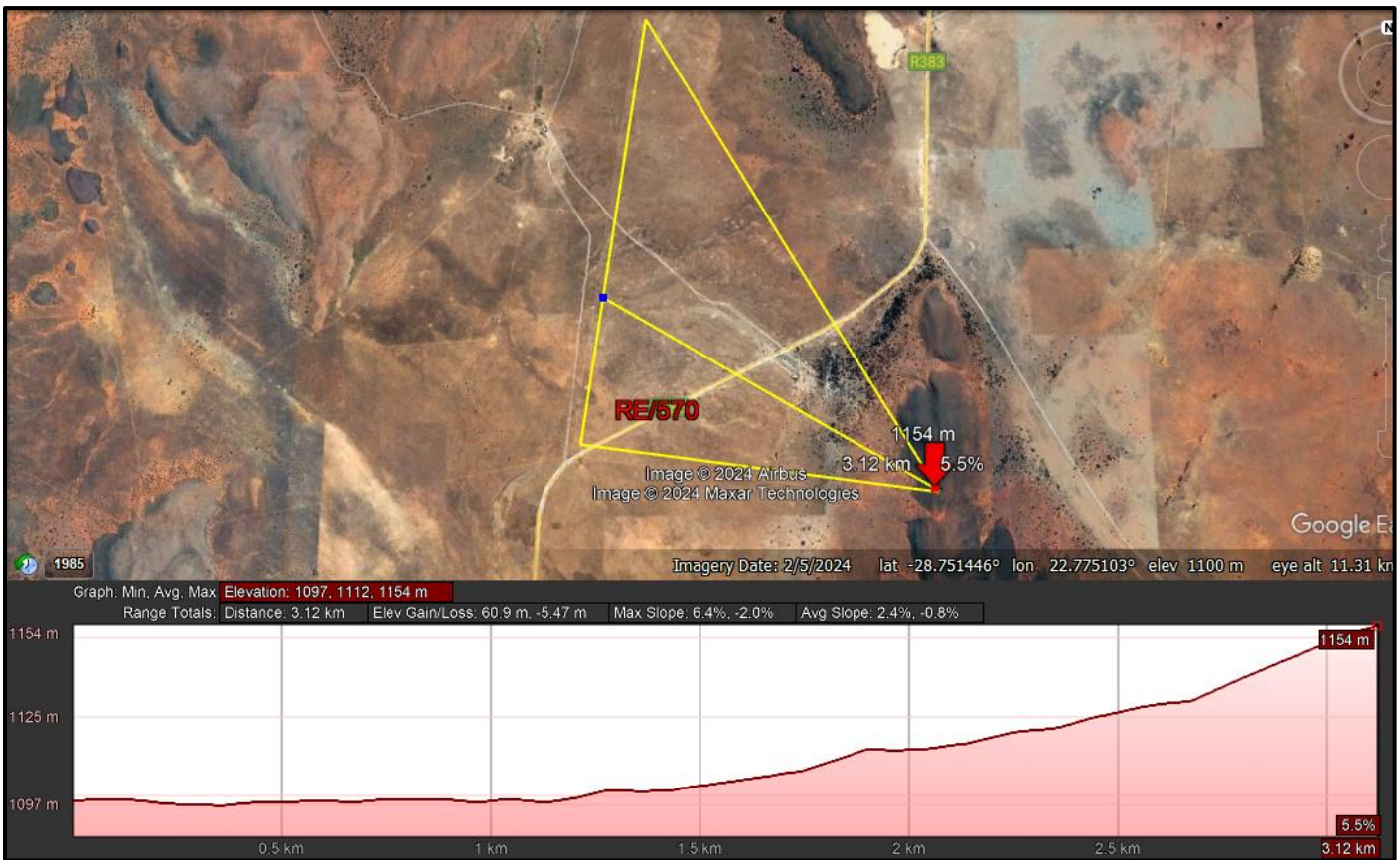


Figure 65: Elevation profile of Farm No 570 (Zaai Plaats) (image obtained from Google Earth).

## Conclusion

The invasive prospecting activities will temporarily impact the topography of the areas during the operational phase. Thereafter all boreholes will be capped, and the trenches/bulk sampling sites will be backfilled. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance. Should the mitigation measures proposed in this report be implemented, the activity will have no residual impact on the environment.

Also refer to *Part B(1)(d)(i) Determination of closure objectives*.

## 2. SITE SPECIFIC VISUAL CHARACTERISTICS

This prospecting right application extends across 16 162.1945 ha and includes fourteen farms (Remainders & Portions). As mentioned above, the topography of the area is fairly flat with the exception of a few ridges that enter some of the properties. The study area is very scarcely populated, and some parts, especially near Hotazel, have already been altered for mining.

As mentioned earlier, the area of disturbance is expected to be  $\pm 200$  m<sup>2</sup> per drill site and between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per bulk sampling area that will continuously be rehabilitated as prospecting progresses. The prospecting activities does not require the alteration of vast vegetated areas, and no permanent infrastructure will be erected. Considering this, the potential impact of the prospecting operation on the visual characteristics of the receiving environment is deemed to be of medium importance without mitigation and low-medium importance once the mitigation measures are implemented.

### **3. SITE SPECIFIC AIR QUALITY AND NOISE AMBIANCE**

Emission into the atmosphere is controlled by the National Environmental Management: Air Quality Act, 2004, and the proposed operation will not trigger an application in terms of the said act. Emissions to be generated at the proposed prospecting areas will mainly consist of dust due to drilling, sampling and driving on site. Due to the small scale of the operation (per sample site) the noise levels to be generated will be low and will mainly stem from the operation of the prospecting equipment and vehicles traveling on the roads.

Presently the air quality and noise ambiance near the application area on Devon No 277, and Botha No 313 are impacted on by the nearby mines, railway line and traffic along the R31 and gravel roads.

Gravel roads also travel through the farms Bermolli No 583, Engelsdraai No 221, and Witdraai No 204 with the R383 passing through Vaalwater No 84 and Farm No 570 (Zaai Plaats). Apart from traffic passing through the farms, these areas are rural in general and have very little dust/noise generators. The study area is very scarcely populated.

All invasive prospecting will take place during normal work hours, and noise stemming from the operation will be highly localised and comparable to the *status quo* of most areas. The dust emissions and/or noise levels that may arise from the proposed prospecting activities, if mitigated by the Applicant, will have a low impact on the receiving environment.

Also refer to *Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Air Quality and Noise Ambiance.*

#### 4. SITE SPECIFIC GEOLOGY

(Information obtained from the Strata Africa Exploration – Diatomite Literature Review & Target Generation compiled by Minrom Consulting (Pty) Ltd in 2024)

Minrom Consulting (Pty) Ltd was commissioned to evaluate the mineralisation potential and identify exploration targets for diatomite within the earmarked prospecting areas. The site specific geology (inferred from local scale geological mapping) of each earmarked area is discussed below.

##### Devon No 277 & Botha No 313

The northern target farms of Botha No 313 and Devon No 277 are completely covered by aeolian sediment. The overlying material is commonly referred to as “Kalahari cover” and can consist of sandstones, shales, and conglomerates. These Neogene sediments unconformably overlay the deeper Hotazel banded-iron formations and manganese layers. Thrust-related surface occurrences of manganese mineralisation are common within the area as observed at Black Rock mine.

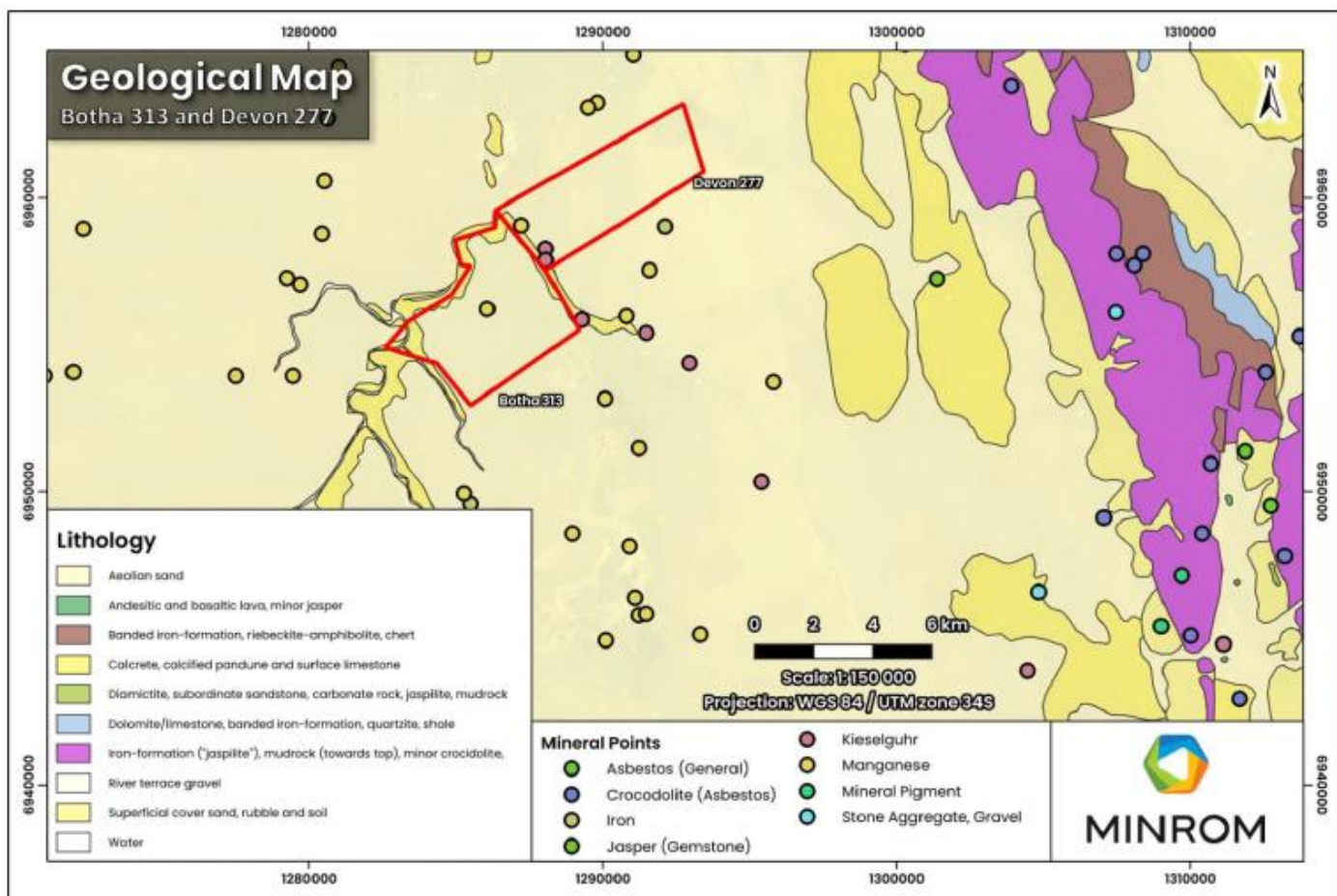


Figure 66: Local and site scale geological map for the farms Devon No 277 and Botha No 313 (image obtained from the Minrom Report)

**Bermolli No 583, Engelsdraai No 221, Witdraai No 204, Vaalwater No 84 and Farm No 570 (Zaai Plaats)**

The southern target farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204, Vaalwater No 84 and Farm No 570 (Zaai Plaats) are also predominantly covered by Neogene aeolian sands which unconformably overlay the older Postmasburg Group and the Olifantshoek Supergroup lithologies.

Witdraai No 204 is underlain by Koegas Subgroup mudrocks, quartzite (quartz wacke), jaspilite, iron-formation, and dolomite. The nearby Vaalwater No 84 and Farm No 570 (Zaai Plaats) are almost completely covered with sand but is also underlain by the same Koegas Subgroup rocks.

Engelsdraai No 221 is mostly covered by aeolian sands but the underlying geology consists of rocks of the Transvaal Supergroup (Makganyene Formation, Postmasburg Group) which locally presents as: diamictites, subordinate sandstones, carbonate rocks, jaspilite, mudrocks, cherts and conglomerates. Additionally, some Olifantshoek

Supergroup lithologies of the Lucknow Formation have been noted within the farm and present as quartzite, flagstone, shale, and dolomitic limestone.

Bermolli No 583 farm has a complete mix of all the aforementioned lithologies and is right over the contact between the Olifantshoek Supergroup and Transvaal Supergroup. However, most of the farm is likely underlain by the andesitic and basaltic lava of the Postmasburg Group (Transvaal Supergroup).

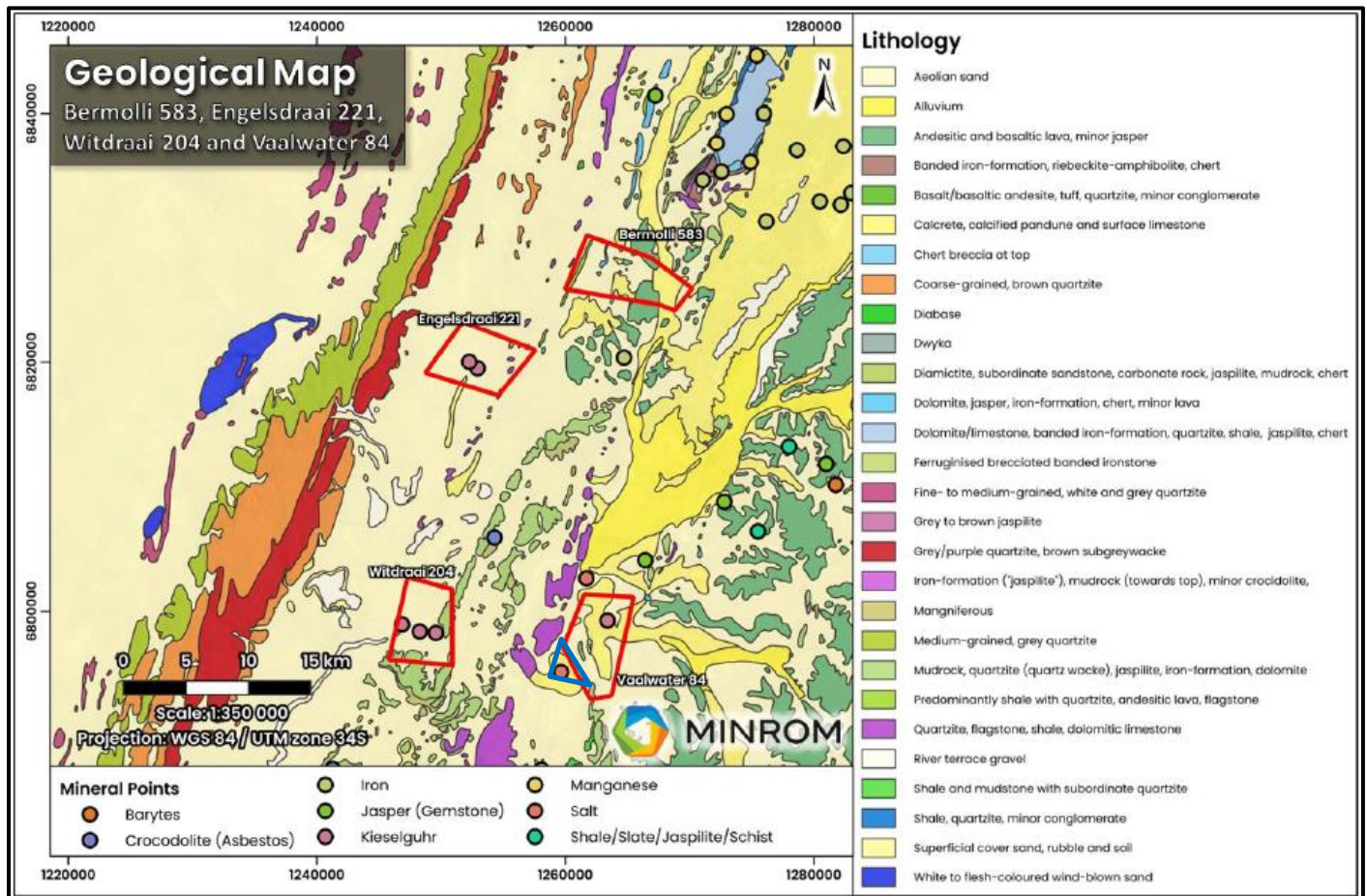


Figure 67: Local and site scale geological map for the farms Bermolli No 583, Engelsdraai No 221, Witdraai No 204 and Vaalwater No 84. Farm No 570 (Zaai Plaats) was added to the map (blue triangle) (image obtained from the Minrom Report)

### Remote Sensing (RS)

Due to the size of the project area, remote sensing was performed to identify exploration targets. Various open-source satellite imagery is available to the public, however, after processing the most useful data was derived from the ASTER satellite which records 14 bands that range from the visible spectrum at 0.52  $\mu\text{m}$  to 11.65  $\mu\text{m}$  (Satellite Imaging Corporation, 2023).

### Band Ratio Application

A band ratio is created by dividing different bands of satellite images from each other and is a technique used to draw attention to specific desired spectral differences (Cardoso-Fernandes et al. 2019). Spectral characteristics of features in an image get enhanced by band ratioing, regardless of the variation in scene illumination (Shahi et al. 2022). The presence of certain minerals is highlighted using band ratios, and it was applied in the following manner:

Table 17: Band ratios for ASTER.

ASTER Band Ratio	Feature
B14/B12	Quartz-rich rocks
B13/B11	Hydrous silica occurrences
B9/B7	Carbonates (limestones and dolomites)
B3/B2	Vegetation Index

Using the band ratio B14/B12 and B13/B11 (follow figure), the silica-rich areas are highlighted in red hues, while the blue hues highlight areas of low silica. These band ratios highlight the possible areas containing diatomite as diatomite is composed of mainly silica, along with minimal clay minerals and calcium carbonates. The high silica content has been used as an indicator of the presence of diatomite, however, it must be noted high silica does not directly mean there is diatomite mineralisation.

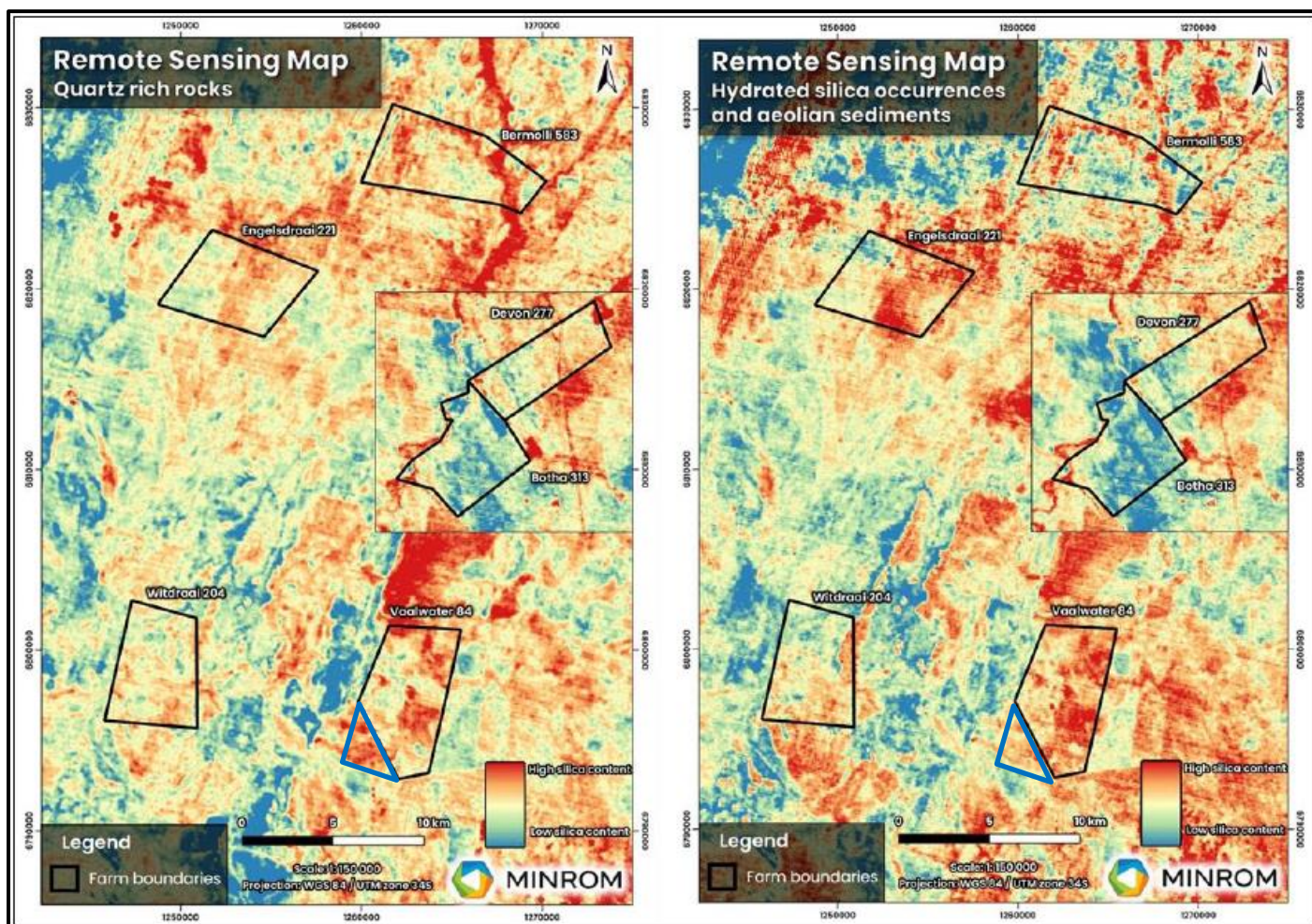


Figure 68: Remote sensing map for quartz rich rocks (left pane) and remote sensing map for hydrated silica occurrences and aeolian sediments Farm No 570 (Zai Plaats) was added to the map (blue triangle) (image obtained from the Minrom Report)

Comparing the band ratios with a vegetation index, it eliminates confusion in the remote sensing where possible areas of diatomite are confused with vegetation. A



comparison of each band ratio is given for each farm boundary. Figure 68 was used to identify potential areas of diatomite, by correlating between the quartz-rich rocks, hydrated silica occurrences and the carbonated areas against the vegetation index.

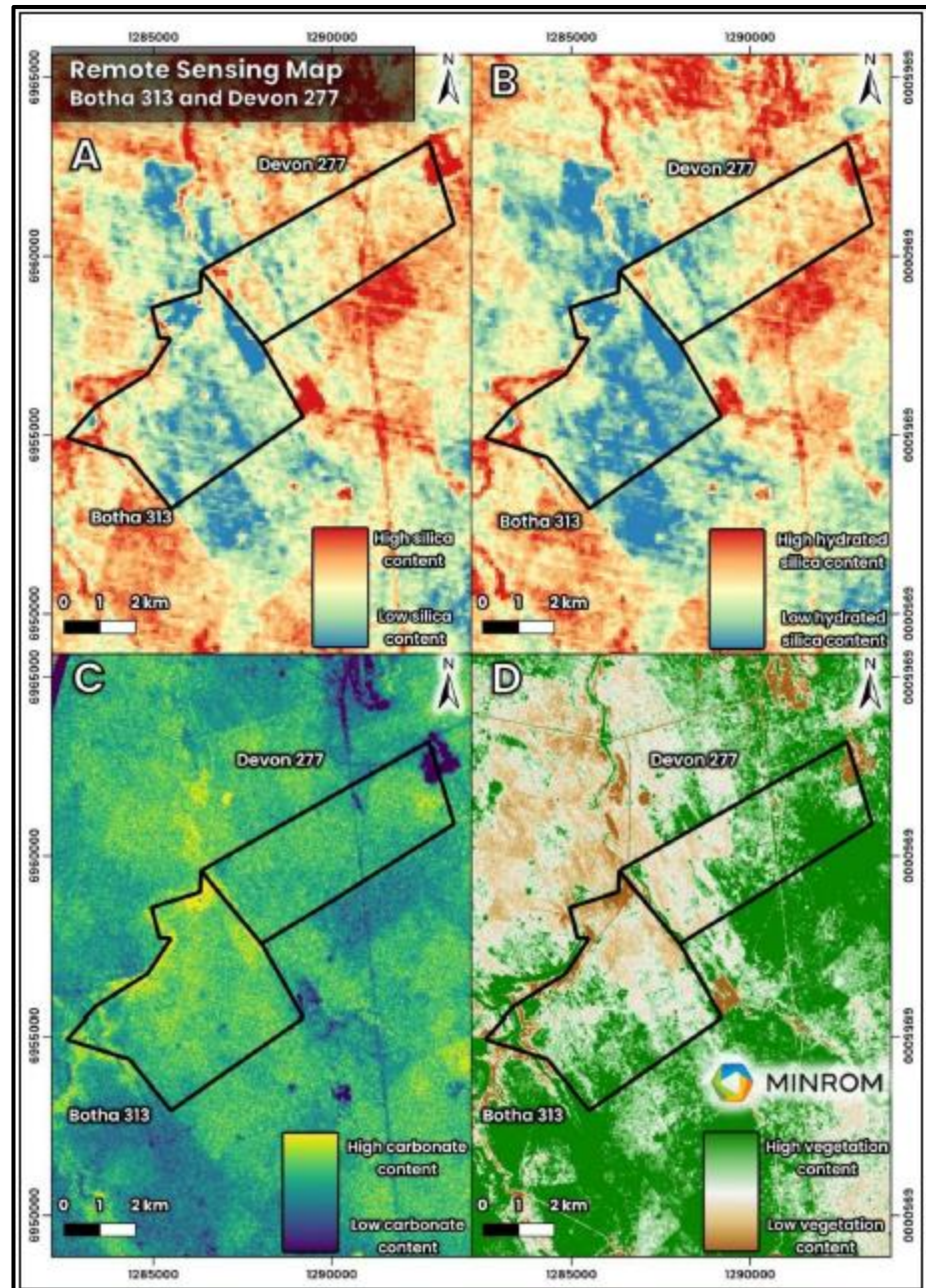


Figure 69: Remote sensing map for Devon No 277 and Botha No 313 where A shows the ASTER band ration B14/B12 highlighting quartz-rich rocks, B is the ASTER band ratio B13/B11 highlighting hydrated silica occurrences, C is the ASTER band ratio B9/B7 highlighting carbonates, and D shows ASTER band ratio B3/B2 highlighting the vegetation (image obtained from the Minrom Report)

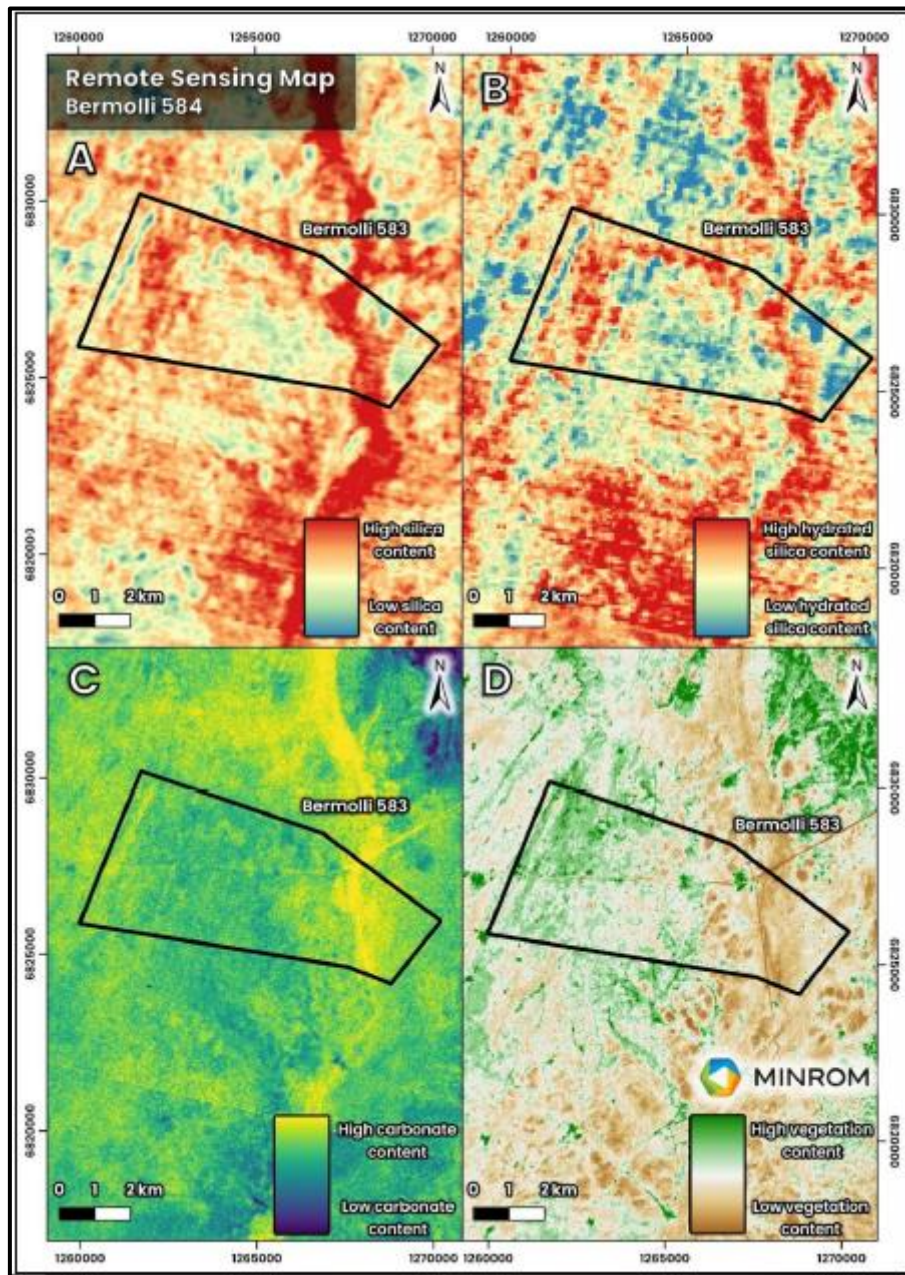


Figure 70: Remote sensing map for Bermolli No 583 where A shows the ASTER band ration B14/B12 highlighting quartz-rich rocks, B is the ASTER band ratio B13/B11 highlighting hydrated silica occurrences, C is the ASTER band ratio B9/B7 highlighting carbonates, and D shows ASTER band ratio B3/B2 highlighting the vegetation (image obtained from the Minrom Report)

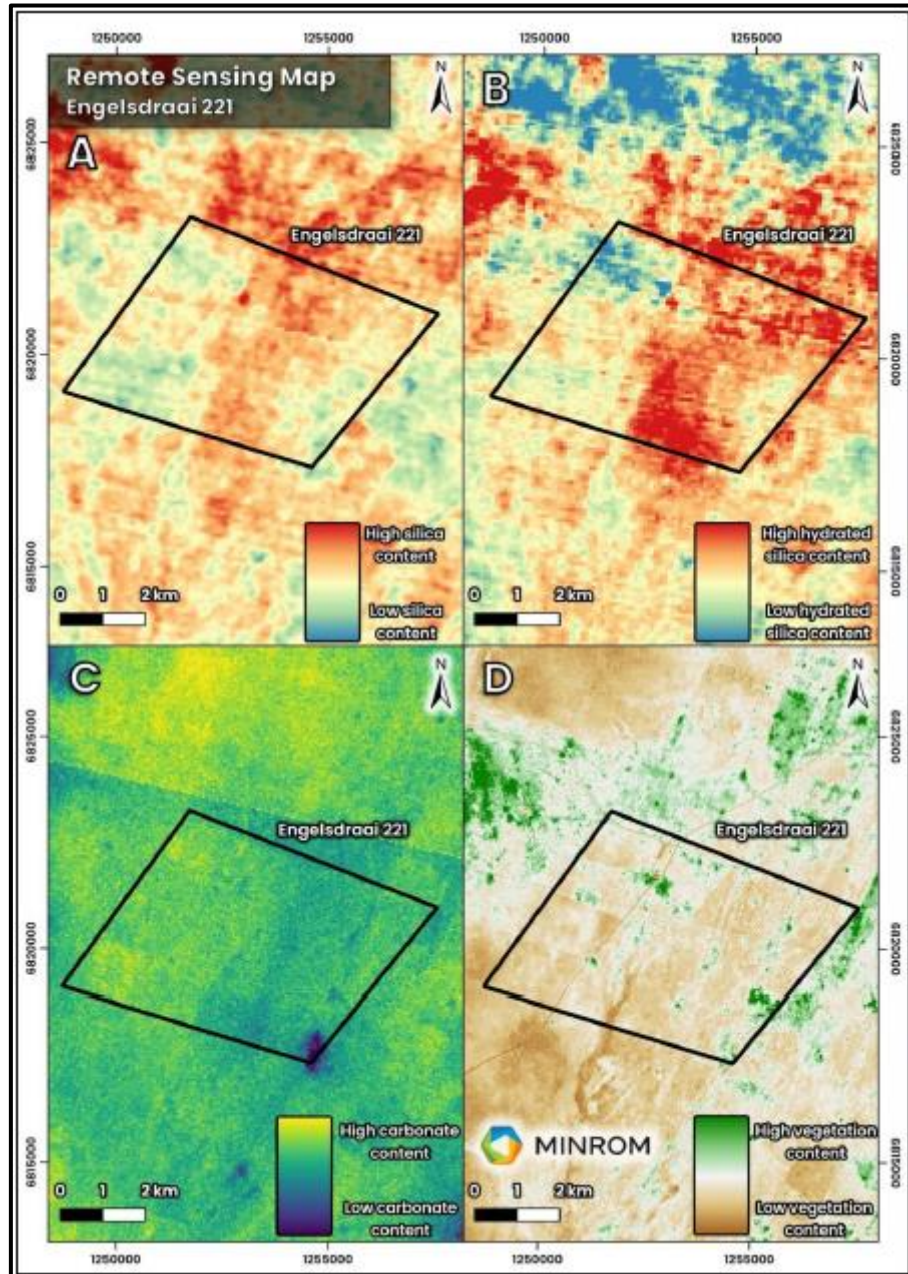


Figure 71: Remote sensing map for Engelsdraai No 221 where A shows the ASTER band ration B14/B12 highlighting quartz-rich rocks, B is the ASTER band ratio B13/B11 highlighting hydrated silica occurrences, C is the ASTER band ratio B9/B7 highlighting carbonates, and D shows ASTER band ratio B3/B2 highlighting the vegetation (image obtained from the Minrom Report)

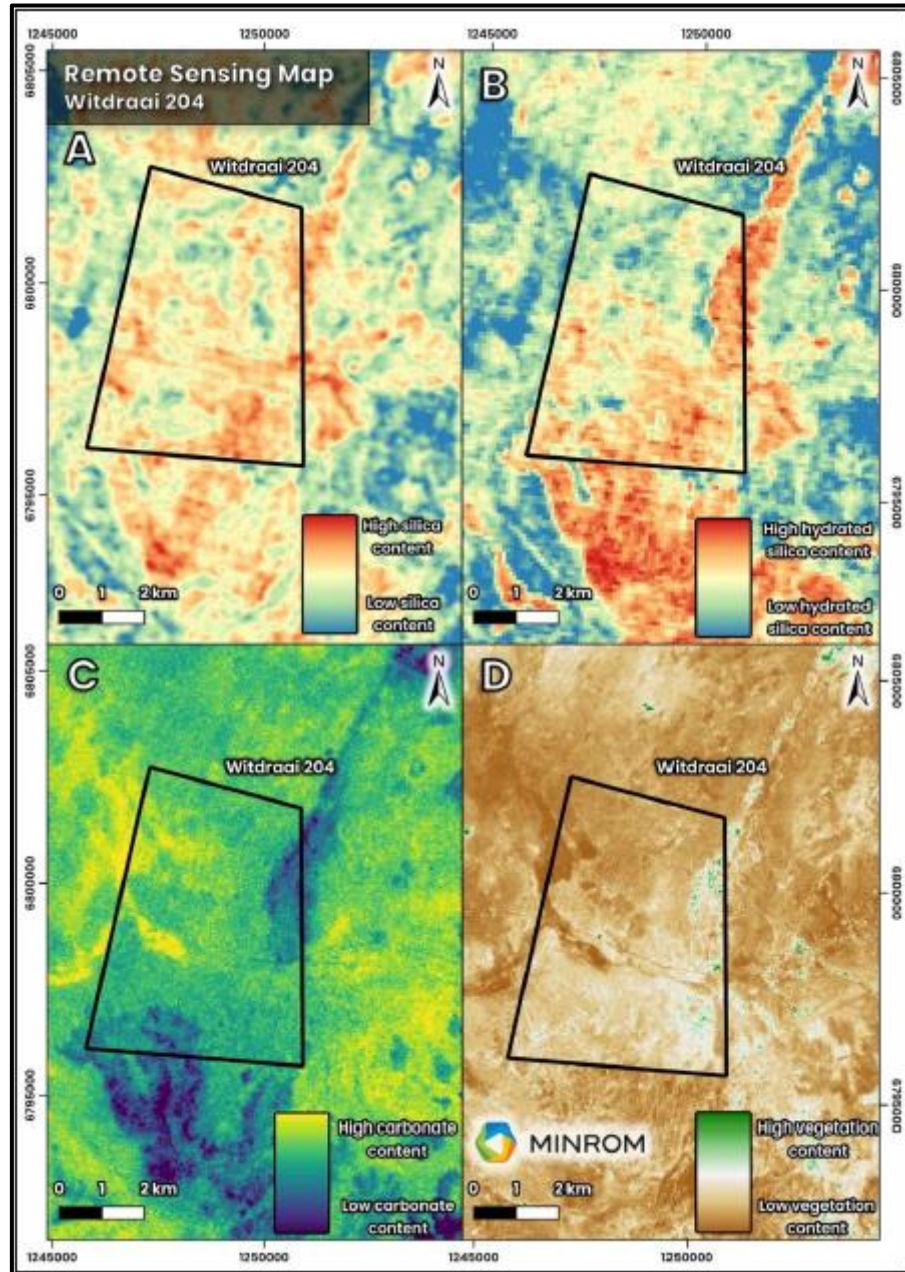


Figure 72: Remote sensing map for Witdraai No 204 where A shows the ASTER band ration B14/B12 highlighting quartz-rich rocks, B is the ASTER band ratio B13/B11 highlighting hydrated silica occurrences, C is the ASTER band ratio B9/B7 highlighting carbonates, and D shows ASTER band ratio B3/B2 highlighting the vegetation (image obtained from the Minrom Report)

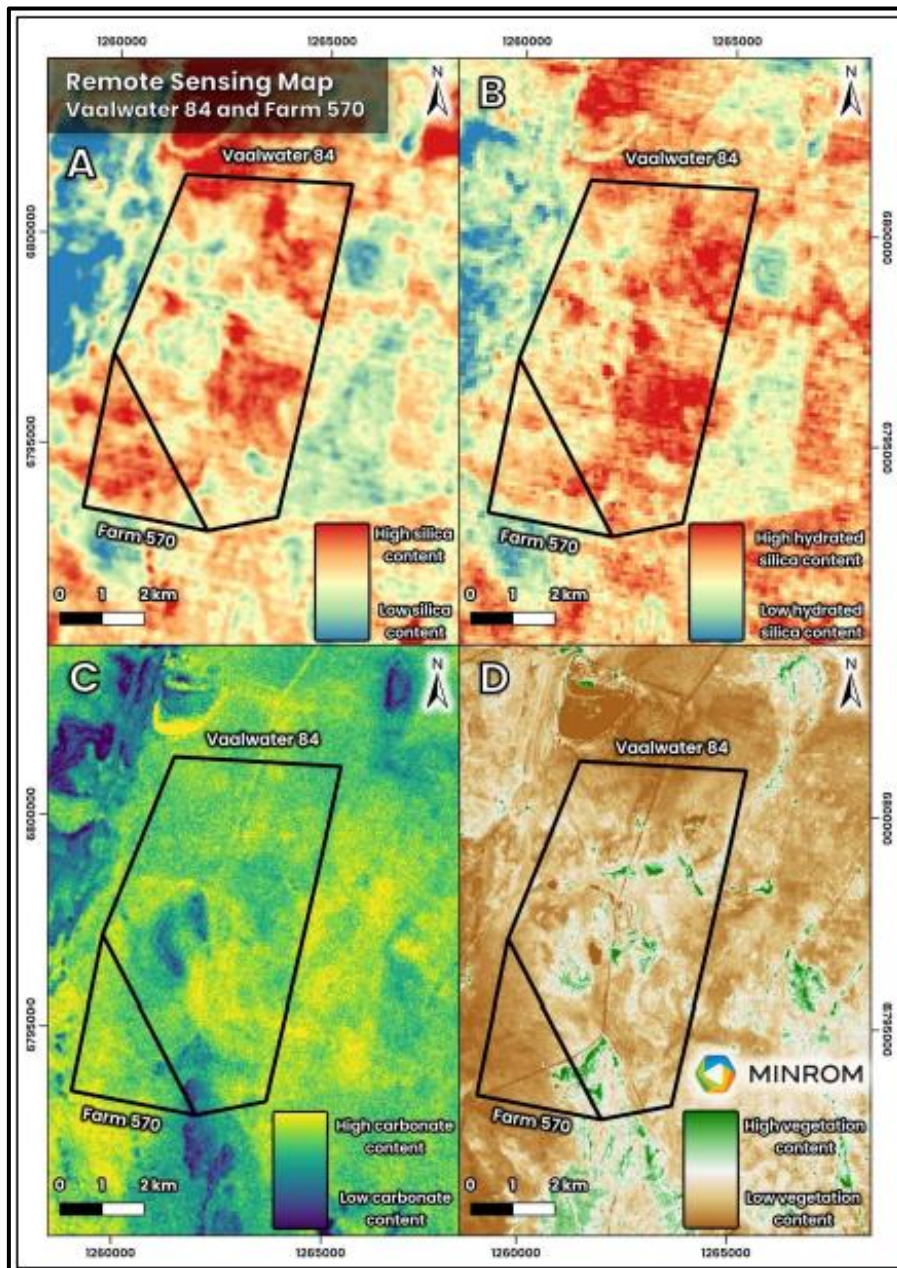


Figure 73: Remote sensing map for Vaalwater No 84 where A shows the ASTER band ration B14/B12 highlighting quartz-rich rocks, B is the ASTER band ratio B13/B11 highlighting hydrated silica occurrences, C is the ASTER band ratio B9/B7 highlighting carbonates, and D shows ASTER band ratio B3/B2 highlighting the vegetation. (image obtained from the Minrom Report)

After comparing the results of the RS analysis, 21 target areas (following figure) were identified, with all the generated targets containing medium to high-silica content. Most of the potential target are generally found near known diatomite occurrences indicating a reasonable, but not perfect, prediction from the regional scale RS data

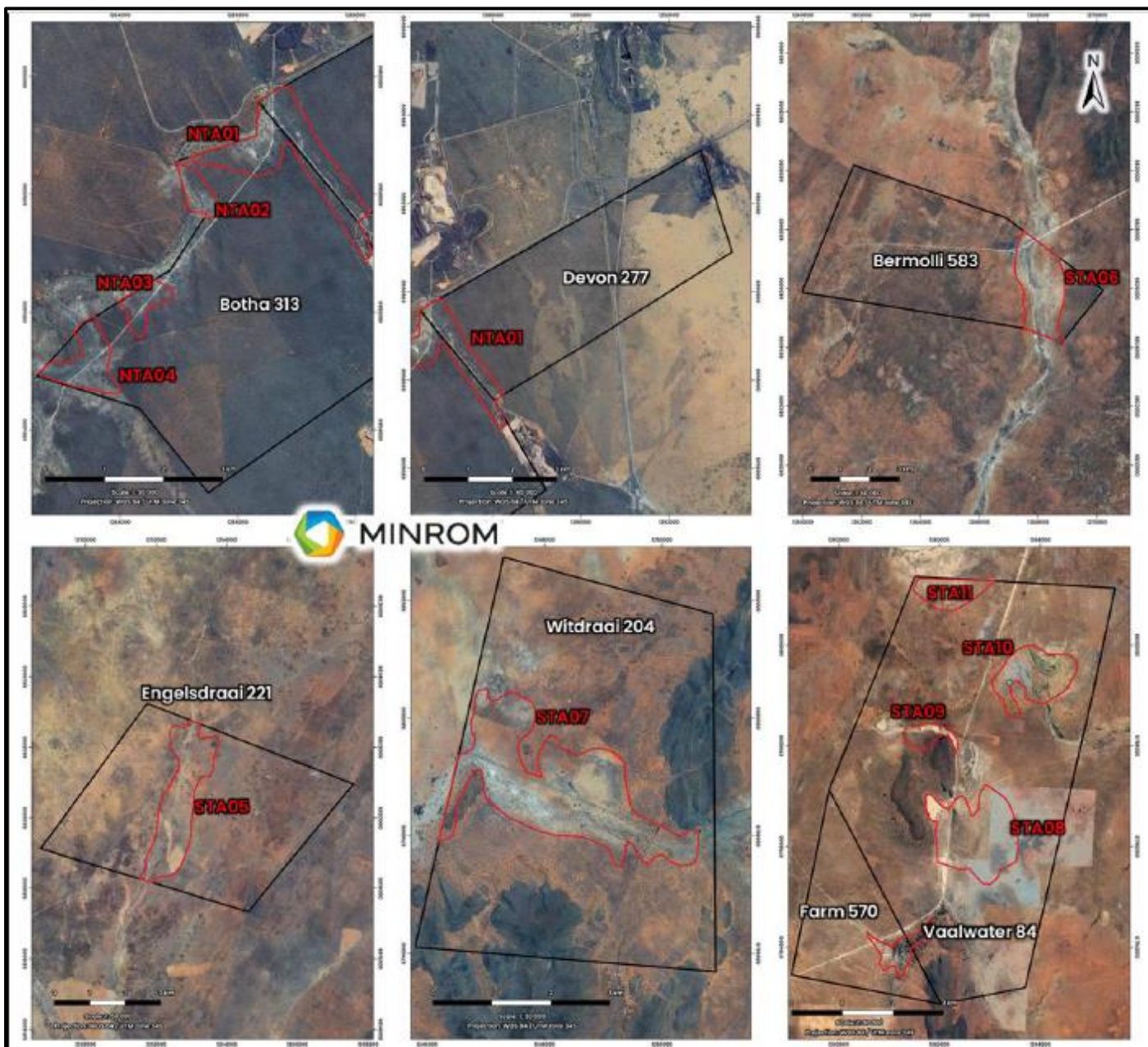


Figure 74: Potential diatomite targets identified using remote sensing (image obtained from the Minrom Report)

**Conclusion and Recommendations**

The highest priority target areas were located on Vaalwater No 84 and Farm No 570. Since historical mining on Witdraai 204 indicated that commercial grades of diatomite are present this is also a high priority target. The other targets are all likely to contain diatomite, however, the grade and size of these deposits will still need to be determined through field work and additional exploration.

Upon review of the Minrom study the Applicant intends to focus the invasive prospecting activities on the target areas listed in the following table.

Table 18: List of target areas.

FARM	FARM PORTION	TARGET SURFACE AREA (m <sup>2</sup> )	RANKING (Significance descending)
Vaalwater No 84	Portion 1	1 339 987	1
Farm No 570 (Zaai Plaats)	Remaining Extent (R/E)	442 111	2
Engelsdraai No 221	Remaining Extent (R/E)	4 231 912	3
Bermolli No 583	Portion 5	4 300 270	4
Witdraai No 204	Portion 1	5 240 068	5
Vaalwater No 84	Remaining Extent (R/E)	2 281 184	10

**Exploration Strategy**

Minrom recommends that the Applicant consider employing the exploration strategy as presented in the following table should the EA and PR application be approved:

Table 19: Proposed exploration strategy proposed by Minrom.

<ul style="list-style-type: none"> <li>● <b>Phase 1 - Literature review &amp; Target generation</b> <ul style="list-style-type: none"> <li>○ Review all available project data</li> <li>○ Develop mineralisation model which can be applied to search for the target commodity anywhere the geological setting</li> <li>○ Generate exploration targets</li> <li>○ Rank exploration targets</li> </ul> </li> </ul>	<b>Complete</b>
<ul style="list-style-type: none"> <li>● <b>Phase 2 – Field Verification &amp; Initial Exploration Potential (Range analysis)</b> <ul style="list-style-type: none"> <li>○ Site investigation to determine if the target areas contain diatomite mineralisation</li> <li>○ Surface sampling (representative samples)</li> <li>○ Excavate pits to check depth extension of mineralisation                             <ul style="list-style-type: none"> <li>▪ Pit sampling (representative channel sampling)</li> </ul> </li> <li>○ Selected samples for diatomite quality testing (XRF SiO<sub>2</sub> grade is not sufficient for diatomite quality)</li> <li>○ Calculate the potential size and grade of the deposit and determine if the deposits are economically viable (conceptual economic model)</li> </ul> </li> </ul>	<b>Proposed Next Phase</b>
<ul style="list-style-type: none"> <li>● <b>Phase 3 – Delineate &amp; Define the Resource</b> <ul style="list-style-type: none"> <li>○ Drilling / auguring / pitting of the potential economic deposits to get sufficient grade to estimate a mineral resource and mining plan.</li> </ul> </li> </ul>	<b>TBC</b> Likely follow up phases if determined to be economically viable

**5. SITE SPECIFIC HYDROLOGY**

*(Information obtained from the Wetland/Aquatic and Terrestrial Desktop Sensitivity & Familiarisation, 2024 attached as Appendix E)*

The site specific hydrology of the proposed prospecting footprint is representative of the regional hydrology described for the study area earlier in this report (*Part A(1)(g)(iv)(1)(a) Type of Environment Affected by the Proposed Activity – Hydrology*). The DFFE Screening Report indicates most of the study area is of low aquatic biodiversity importance except for the streams/drainage lines/pans, and FEPA's in the earmarked area as depicted in the following figures.

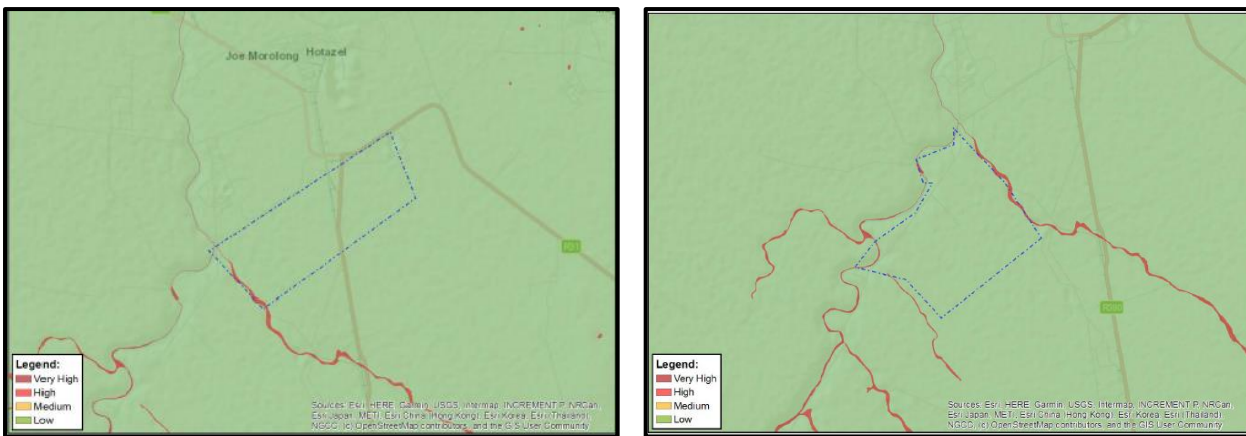


Figure 75: Aquatic biodiversity theme sensitivity of Devon No 277(left pane) and Botha No 313 (right pane) according to the DFFE screening report where the Wittege stream is of very high importance to Devon No 277, and the Ga-Mogara stream flows through Botha No 313.

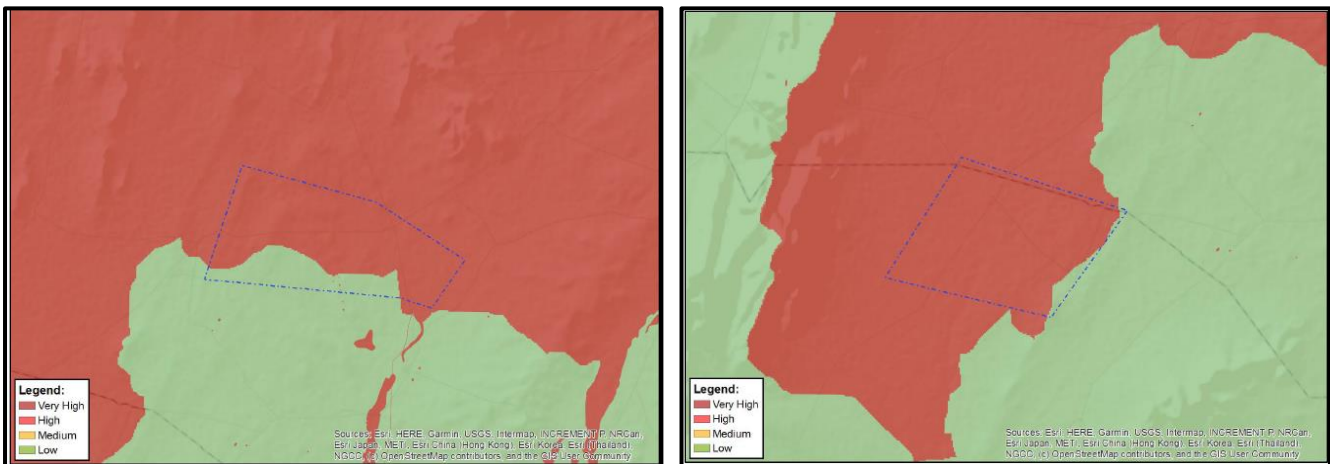


Figure 76: Aquatic biodiversity theme sensitivity of Bermolli No 583 (left pane) and Engelsdraai No 221 (right pane) according to the DFFE screening report where the FEPA (red shading) is of very high importance.



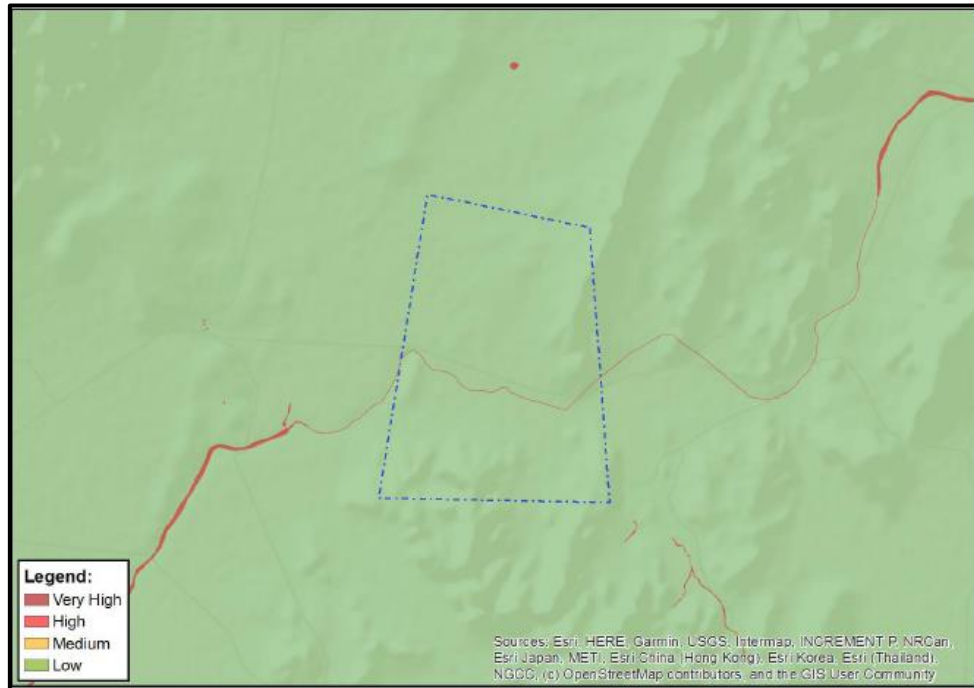


Figure 77: Aquatic biodiversity theme sensitivity of Witdraai No 204 according to the DFFE screening report where the drainage line (red line) is of very high importance.



Figure 78: Aquatic biodiversity theme sensitivity of Vaalwater No 84 (left pane) and Farm No 570 (Zaai Plaats) (right pane) according to the DFFE screening report where the pans (red polygons) are of very high importance.

### **Freshwater Ecosystem Sensitivity Mapping**

As part of the initial planning phase, the Applicant aimed to gain a deeper understanding of the freshwater (wetlands/rivers) and terrestrial habitats within properties identified to implement best impact avoidance and minimization measures through careful planning. Eco-Pulse was appointed for the initial phase, which includes the compilation of sensitivity maps to inform project planning in the interest of impact avoidance and/or minimization.

Eco-Pulse applied the following methods to generate the freshwater ecosystem sensitivity map and associated buffers (also refer to the full report attached as Appendix E):

- ◆ Desktop Analysis and Field Preparation  
In preparation for field work, available desktop wetland and river inventories were reviewed and clipped to the study area for refinement at a later stage.
  
- ◆ Field Verification and Familiarization Process  
The aim of the field familiarization process was to visit a suite of freshwater ecosystem within and nearby the properties to improve the accuracy of the mapping.
  
- ◆ Mapping of Freshwater Ecosystems and Drainage Features  
Following field familiarization efforts, the desktop river and wetland inventory maps was updated and refined based on field data. The following table shows the variable buffer widths applied to establish river and stream polygon features (for the sensitivity map).

Table 20: Variable buffer widths applied to establish river and stream polygon features (Eco-Pulse, 2024).

River/ stream class	Buffer width <sup>3</sup>	Active channel <sup>4</sup> width
1 – Ephemeral headwater drainage lines and/or first order streams	2.5m	5m
2 – Ephemeral second order headwater streams	5m	10m
3 – Seasonal and/or third order streams	7.5m	15m
4 – Seasonal fourth and fifth order streams and rivers	10m	20m

- ◆ Aquatic Impact Mitigation Buffers.  
The aim of the buffers (development setbacks) is to protect sensitive ecosystem such as wetlands, rivers, and streams from key risk associated with prospecting. Due to the scale of the project area and the early planning phase of the project, a generic aquatic buffer was applied to all aquatic ecosystems.

The following figures show the preliminary freshwater ecosystem sensitivity mapping results as compiled by Eco-Pulse.

1. Devon No 277 & Botha No 313

The Ga-Mogara stream borders the farm Botha No 313 to the west/north-western. At the junction of the farms Devon No 277 and Botha No 313 the Witleegte stream joins the Ga-Mogara stream. In addition to the above,

Eco-Pulse identified a few additional drainage lines on the farm Botha No 313 (following image).

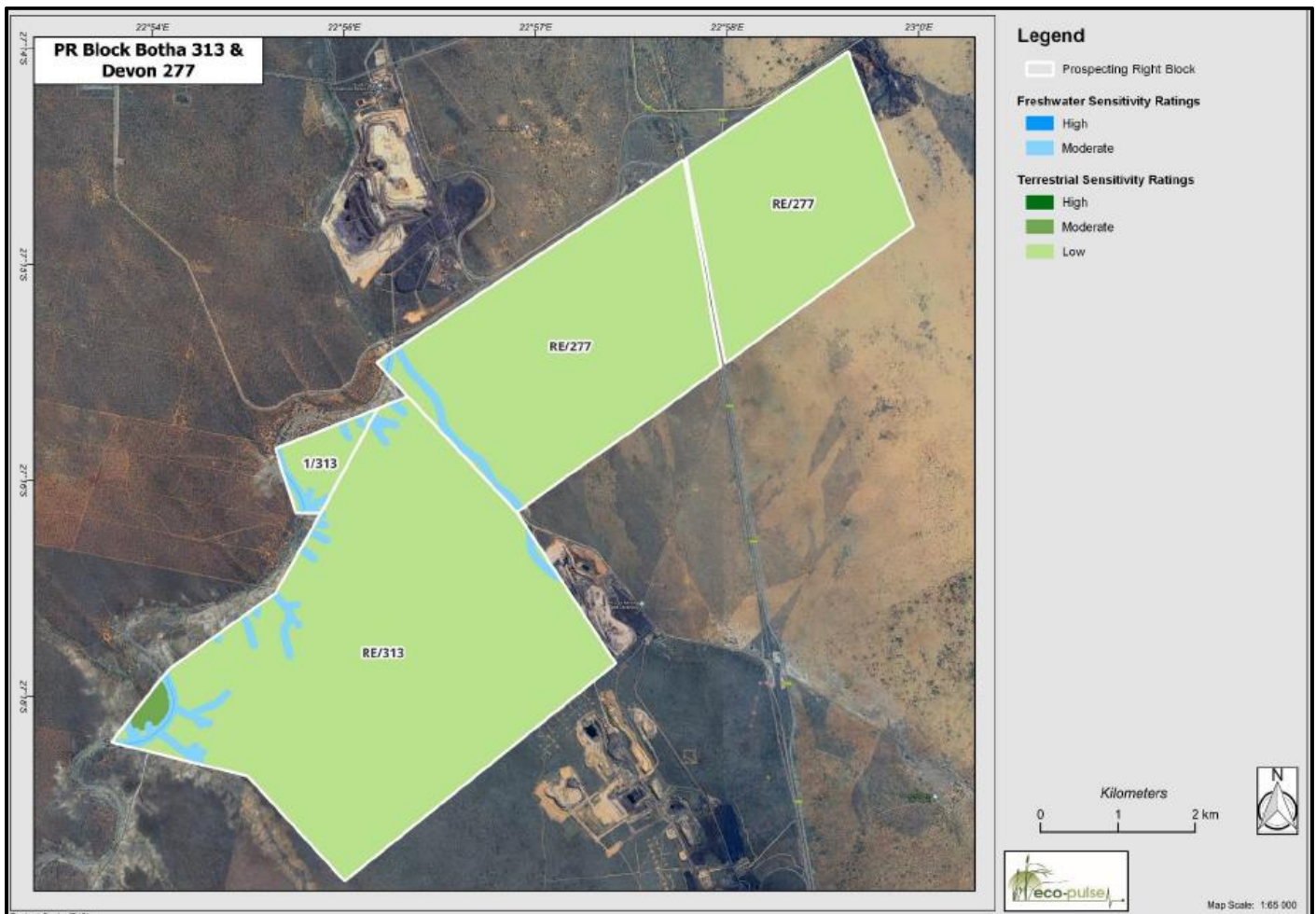


Figure 79: Desktop sensitivity map for the farms Devon No 227 and Botha No 313 (Eco-Pulse, 2024).

## 2. Bermolli No 583

According to the SANBI BGIS data an unnamed ephemeral drainage cross through the eastern part of the farm Bermolli No 583. This line is shown to feed into a pan classified as an Upper Nama Karoo Depression. Bermolli No 583 also extends into a FEPA. Eco-Pulse confirmed the drainage and pan along the eastern side of the farm. A few additional pans were also identified to the south (following image).

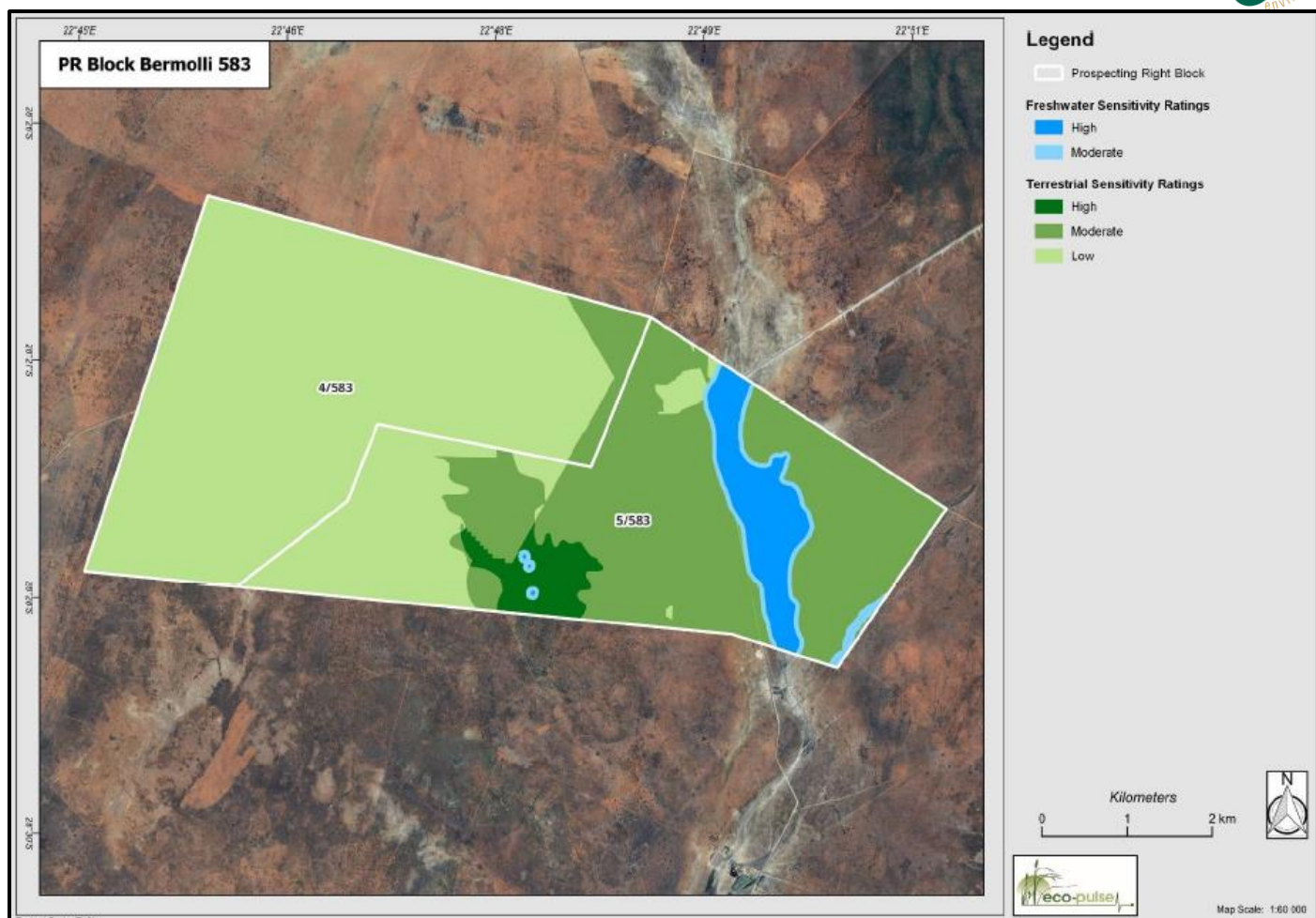


Figure 80: Desktop sensitivity map for Bermolli No 583 (Eco-Pulse, 2024).

### 3. Engelsdraai No 221

As mentioned earlier, at least one ephemeral drainage line runs through the farm Engelsdraai No 221 that was also confirmed by Eco-Pulse as shown below. Engelsdraai No 221 also extends into the same FEPA as Bermolli No 583.

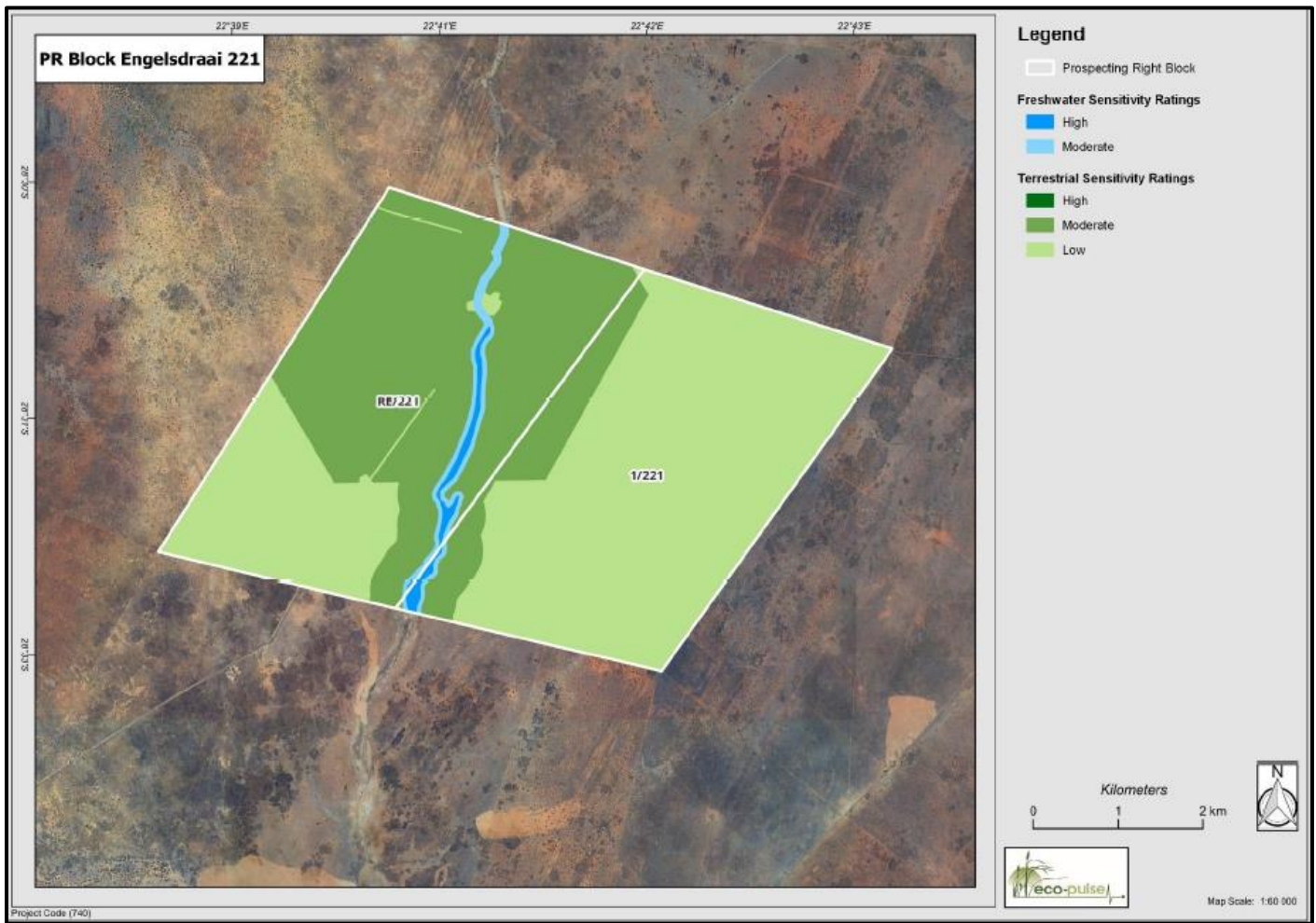


Figure 81: Desktop sensitivity map for Engelsdraai No 221 (Eco-Pulse, 2024).

#### 4. Witdraai No 204

The Soutloop Stream dissects the farm Witdraai No 204 into northern and southern sections. Eco-Pulse identified numerous other drainage lines within the boundaries of the farm as presented below.

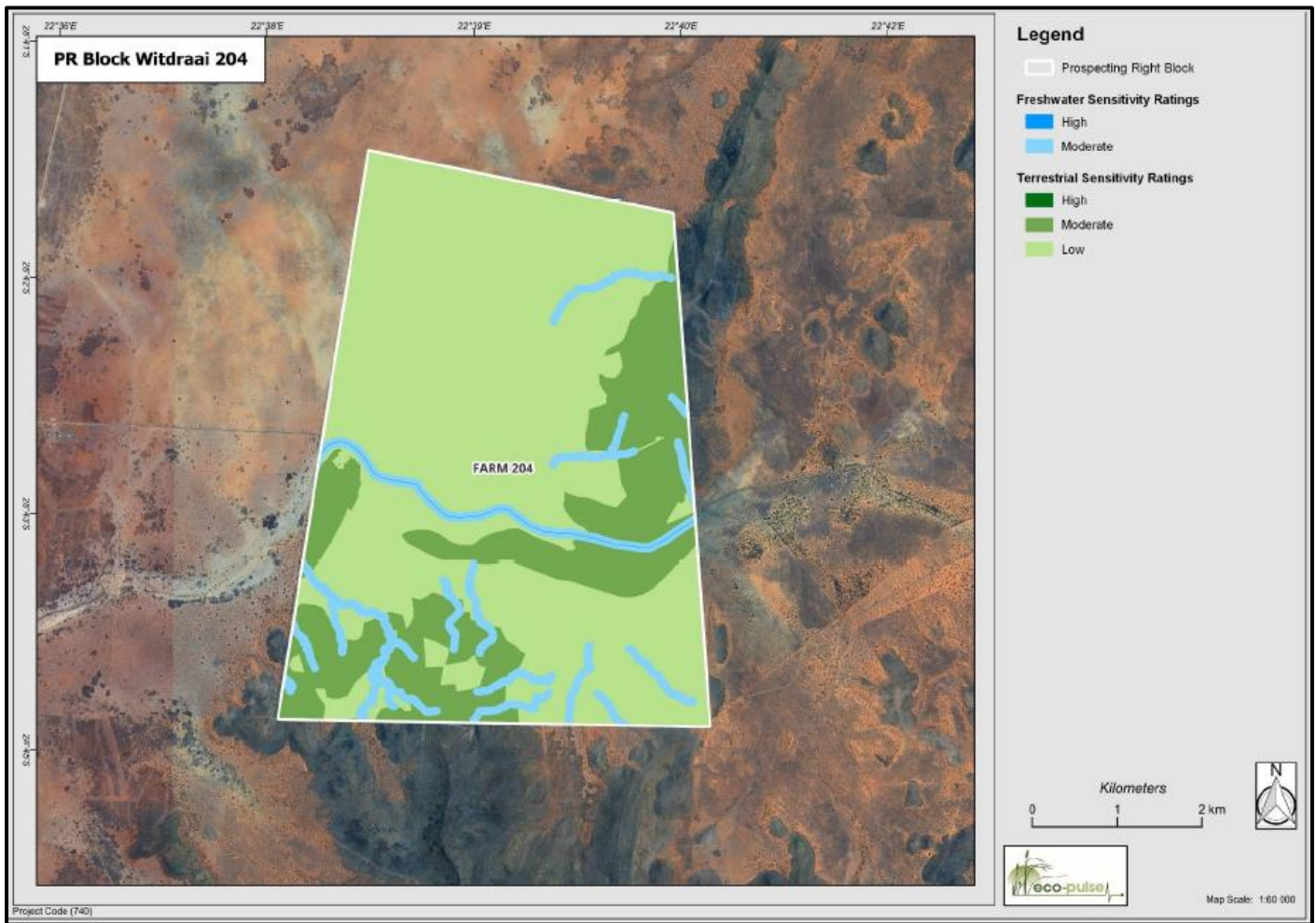


Figure 82: Desktop sensitivity map for Witdraai No 204 (Eco-Pulse, 2024).

### 5. Vaalwater No 84

Various pans also classified as Upper Nama Karoo Depressions are present on the farm Vaalwater No 84. Four important depressions/drainage were identified by Eco-Pulse as shown below.

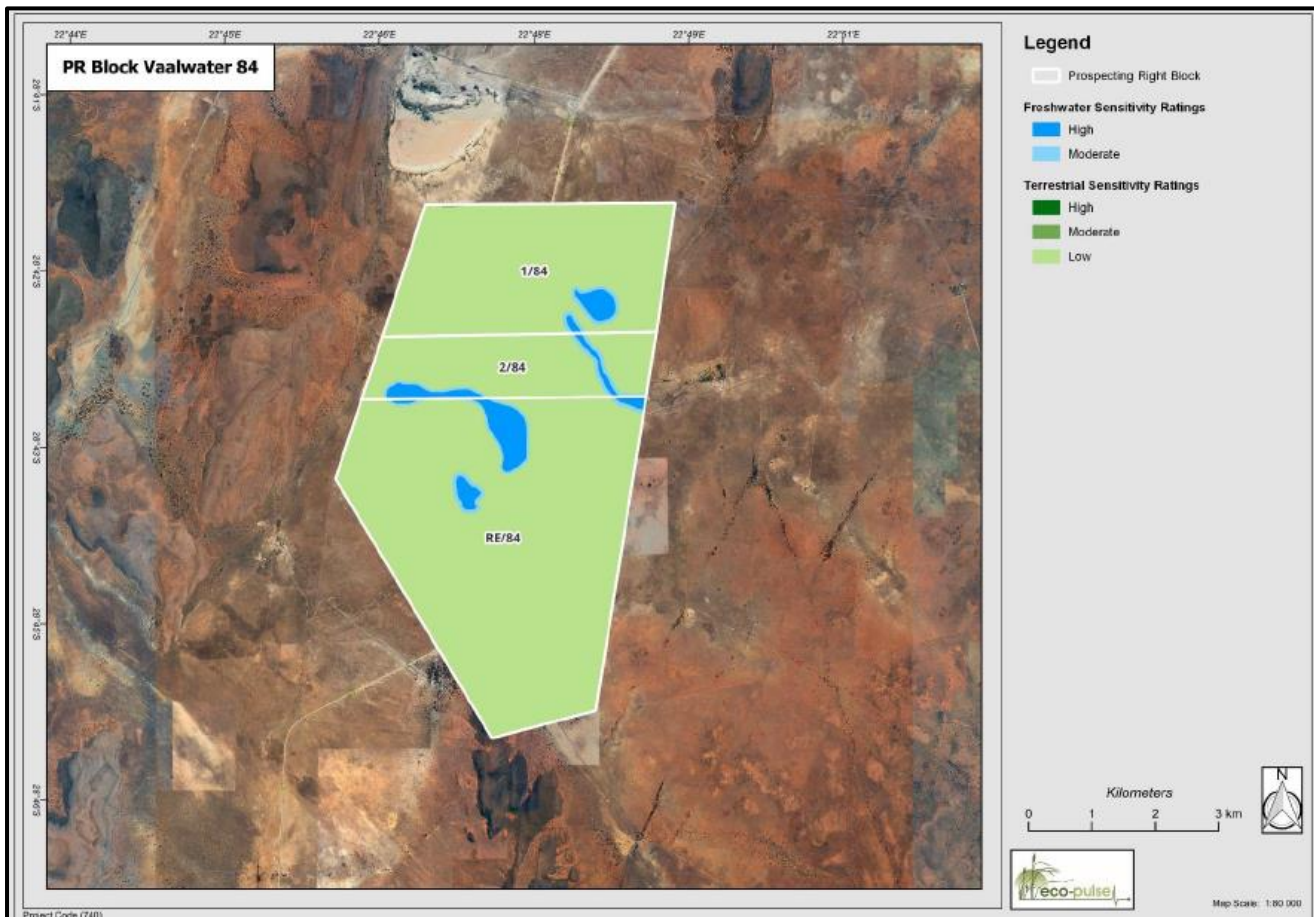


Figure 83: Desktop sensitivity map for Vaalwater No 84 (Eco-Pulse, 2024).

6. Farm No 570 (Zaai Plaats)

Eco-Pulse did not identify any pans or watercourses on Farm No 570 (Zaai Plaats).

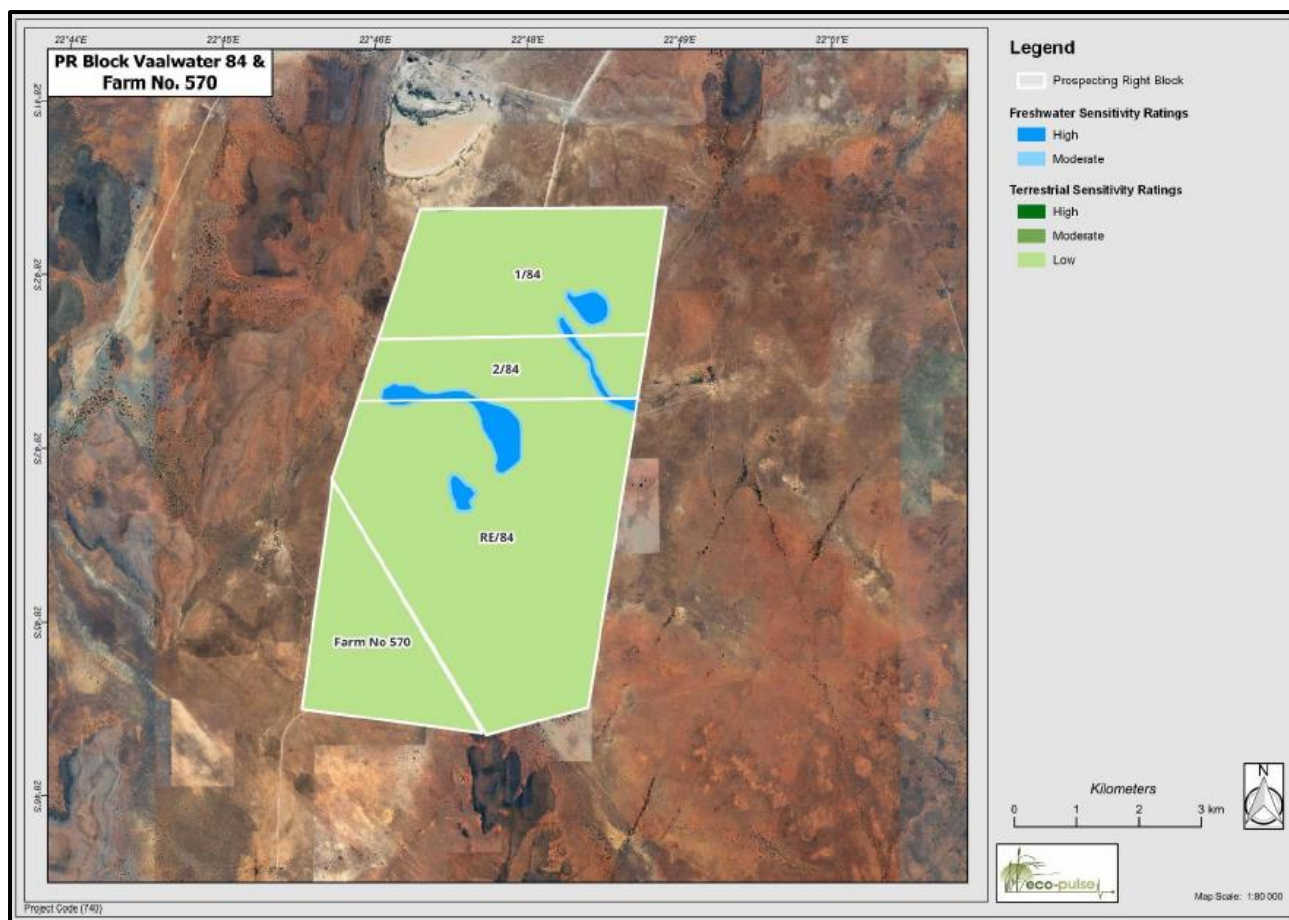


Figure 84: Desktop sensitivity map for Farm No 570 (Zaai Plaats) (Eco-Pulse, 2024).

### **Planning Recommendations for Freshwater Ecosystems**

Refer to Figures 6 to 12 for a comparison between the identified target areas (for invasive prospecting) and the freshwater sensitivity rating. As evident in these figures, the position of the target areas appears to mainly correspond with the identified watercourses on the farms.

In this regard, the specialist notes that watercourses such as rivers, wetland and drainage lines collect, retain, and convey surface water in the landscape and are sensitive to erosion and water quality impacts due to their location in the landscape. Therefore, unlike the terrestrial ecosystem sensitivity map, which has several sensitivity classes to inform siting of prospecting pits, Eco-Pulse noted that freshwater ecosystems should preferably be avoided irrespective of their sensitivity and ecosystem threat status. As such no prospecting may occur in any freshwater ecosystems considered high-moderate sensitivity prior to a second phase investigation that groundtruth the sensitivity of the earmarked areas and inform the invasive prospecting programme.



According to the buffer model of Eco-Pulse, the key risk associated with prospecting are sediment and turbidity impacts and water quality impacts from heavy metals. Importantly, buffers are only suited to mitigate against certain impacts. Buffers are capable of mitigating two of the key impacts identified by the model. Based on the tool outputs for the range of ecosystems and site variables tested, an aquatic impact buffer of 40 m is recommended. In addition, to the freshwater ecosystem themselves, aquatic buffers should be considered 'Moderate' sensitivity and ideally avoided too. The buffers will aid in the protection of sensitive freshwater ecosystems and mitigate against key risk identify by the buffer model.

### **Conclusion**

The sensitivity layers created for the identified freshwater ecosystems in the initial phase are crucial for planning purposes. As such the exact location of the freshwater ecosystems shall be groundtruthed through a second phase investigation.

It is anticipated that additional fieldwork will be necessary by a hydrologist once the areas where invasive prospecting and bulk sampling will occur are selected. Should the second phase investigation indicate that the target areas occur within any watercourses the applicability of a water use authorisation will be considered in consultation with the hydrologist.

## **6. SITE SPECIFIC TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUNDCOVER AND FAUNA**

*(Information obtained from the Wetland/Aquatic and Terrestrial Desktop Sensitivity & Familiarisation, 2024 attached as Appendix E)*

### **Terrestrial Vegetation/Habitat Sensitivity Mapping**

Eco-Pulse applied the following methods to generate the terrestrial ecosystem sensitivity maps (also refer to the full report attached as Appendix E):

- ◆ Field preparation  
Available desktop terrestrial databases were reviewed and clipped to the study area for refinement at a later stage.
- ◆ Species of Conservation Concern Potential Occurrence (POC) Assessment  
The purpose of conducting the potential occurrence assessment was to identify Species of Conservation Concern (SCC), which are species with significant

conservation value in preserving South Africa's biodiversity. This assessment aimed to flag the potential presence of SCC, helping to focus future surveys on these species or determine the need for more detailed studies. The habitat requirements/preferences for each plant/animal SCC was reviewed (based on available literature) and then compared with the habitat occurring on the site to estimate the likelihood of these species occurring on the target property.

◆ Terrestrial Ecosystem Mapping

Rapid present ecological state (PES) categories were assigned to the refined remaining extent layer as follows:

- ◆ A/B PES – Natural or largely natural primary terrestrial ecosystem.
- ◆ C/D PES – Terrestrial ecosystem which has experienced a degree of degradation, but which still retains some ecosystem functionality.
- ◆ E/F PES – Degraded / transformed terrestrial ecosystem type.

The refined remaining extent layer was unioned with the national vegetation map shapefile layer (SANBI, 2018). The refined wall-to-wall study area terrestrial ecosystem layer was then unioned with the Northern Cape Province Biodiversity Plan GIS layer (Holness and Oosthuysen, 2016).

◆ Field Verification and Familiarisation Process

The aim of the field familiarization process was to visit representable examples of the various vegetation types which occur within the targeted blocks and nearby the properties to improve the accuracy of the mapping.

◆ Rating Ecological Sensitivity

The desktop terrestrial and freshwater ecosystem layers were unioned to create a consolidated sensitivity layer. The following table shows the numerical sensitivity ratings that were assigned to the study area.

Table 21: Numerical sensitivity ratings were assigned final sensitivity classes (Eco-Pulse, 2024).

Ecological Sensitivity Class	Numerical Rating	Interpretation for drill well siting
High	0.68-1.0	Areas to be avoided when siting drilling wells as these are ecologically sensitive.
Moderate	0.33 – 0.67	Potentially suitable areas for siting drilling wells. These areas should however be avoided if possible.
Low	0.0-0.33	Areas which are suitable for the siting of drilling wells from an ecological sensitivity perspective.

The site specific findings of Eco-Pulse are discussed below for each earmarked farm.

1. *Devon No 277 & Botha No 313*

As mentioned earlier, an ESA is present along the south-western boundary of the farm Devon No 277. The same ESA (that borders the farm Devon No 277) borders the farm Botha No 313 along the north-western and north-eastern boundaries. The Kathu Bushveld (SVk12) and the Gordonia Duneveld (SVkd1) are the dominant vegetation types of these farms that are both regarded as Least Threatened (LT). The animal species theme sensitivity rating of the earmarked farms ranges between Low and Medium.

As presented in Figure 79, Eco-Pulse regarded the terrestrial sensitivity of the farms as mainly Low with a small section of High sensitivity along the south-western corner of Botha No 313.

2. *Bermolli No 583 & Engelsdraai No 221*

The farms Bermolli No 583 and Engelsdraai No 221 are mostly within a CBA. The vegetation types applicable to these farms are:

- ◆ Northern Upper Karoo (NKu3) (LT)
- ◆ Olifantshoek Plains Thornveld (SVk13) (LT)
- ◆ Postmasburg Thornveld (SVk14) (LT)
- ◆ Southern Kalahari Salt Pans (Azi4) (LT)

The animal species theme range between High – Medium. As presented in Figure 80, Eco-Pulse rated the sensitivity of Bermolli No 583/4 as mainly Low with Bermolli No 583/5 ranging from Low – High. Similarly, Engelsdraai No

221/1 is deemed to be of Low sensitivity while Engelsdraai No 221/RE is mainly of Medium sensitivity.

Bermolli No 583 and the northern boundary of Engelsdraai No 221 forms part of the Siyanda District Municipality Environmental Management Framework (EMF). According to the EMF the farms extends across areas with an environmental sensitivity index rating between 0 (pink colour in following image) and 2 (light green). The EMF notes the following factors were used to compile the index:

- ◆ The erosion potential of soil where soils with a high erosion potential were awarded a sensitivity of 1;
- ◆ The conservation priority of veld types for veld types with a medium conservation priority were awarded a sensitivity count of 1 those with a high conservation priority were awarded a count of 2 and those with a very high conservation priority were awarded a count of 3;
- ◆ Topographical areas with a high variance in shape and form were awarded a sensitivity count of 1;
- ◆ All watercourse, drainage lines and pans (including a 32 m buffer on either side) were awarded a sensitivity count of 2; and
- ◆ All transformed areas were awarded a sensitivity count of -1.

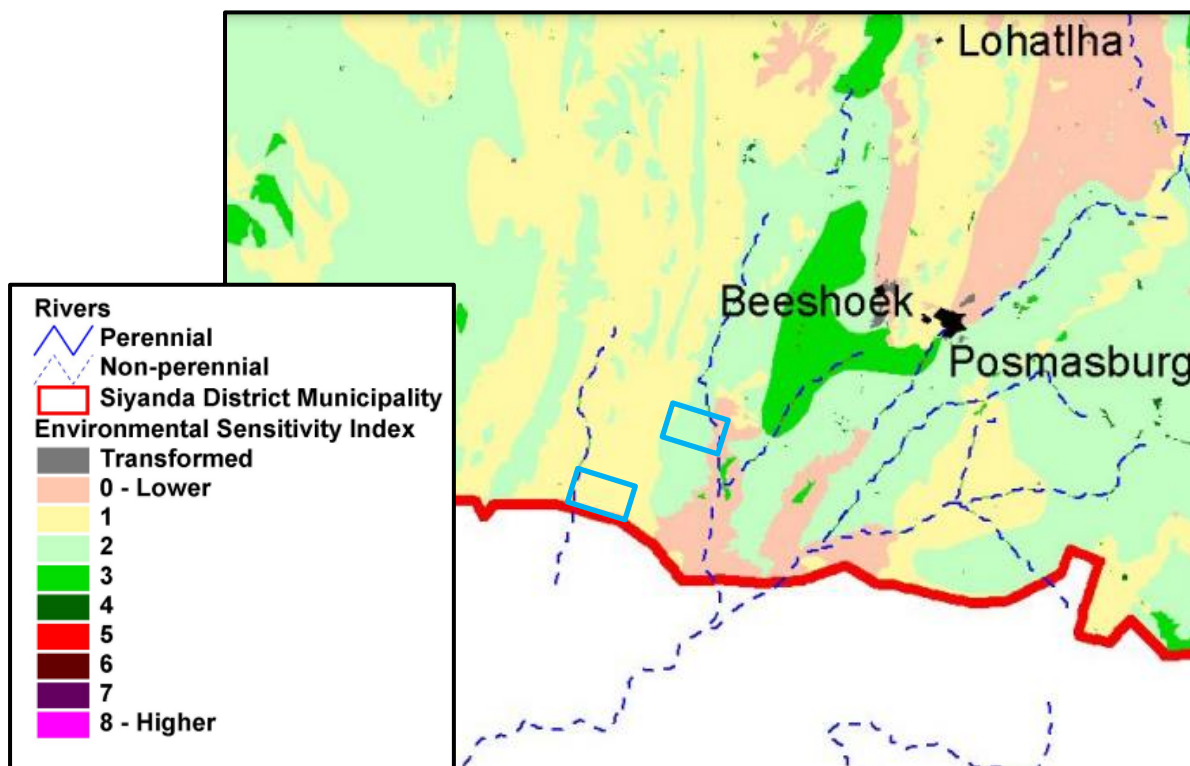


Figure 85: Environmental sensitivity index according to the Siyanda District Municipality EMF (2008) where the blue squares indicate Bermolli No 583 and Engelsdraai No 221 respectively.

Bermolli No 583 falls within EMF environmental control zones (ECZ) 3 and 7, and Engelsdraai No 221 within EMF ECZ 7. ECZ 3 refers to potential high to very high vegetation conservation areas, and ECZ 7 indicates a low control zone. The EMF notes the following regarding the respective zones:

### Zone 3 (summarised from the EMF)

The area covered by this zone has the potential to become core parts of conservation areas that may be necessary to meet national conservation targets. It is therefore important that the potential is maintained by keeping these areas as natural as possible (Siyanda EMF).

Management parameters suggested for Zone 3:

- ◆ Compatible land uses (with/without further assessment):
  - ▮ nature conservation;
  - ▮ stock farming;
  - ▮ game farming;
- ◆ Non-appropriate land uses:
  - ▮ Agriculture;

- ▶ Towns or settlements;
- ▶ Opencast mining and quarrying;
- ▶ New tracks, roads, railways, pipelines and cables; and
- ▶ Off-road vehicle driving.

◆ General parameters:

- ▶ The creation of unnecessary bare earth areas should be avoided at all costs.
- ▶ The construction or creation of new roads and tracks should be avoided.
- ▶ Exposed bare areas should be paved or be rehabilitated with vegetation cover whenever feasible.
- ▶ Overstocking with domestic animals or game must be prevented at all costs.

**Zone 7**

This zone is relatively less sensitive than the other zones and no special parameters, except those already implemented or required by law, are proposed for this zone.

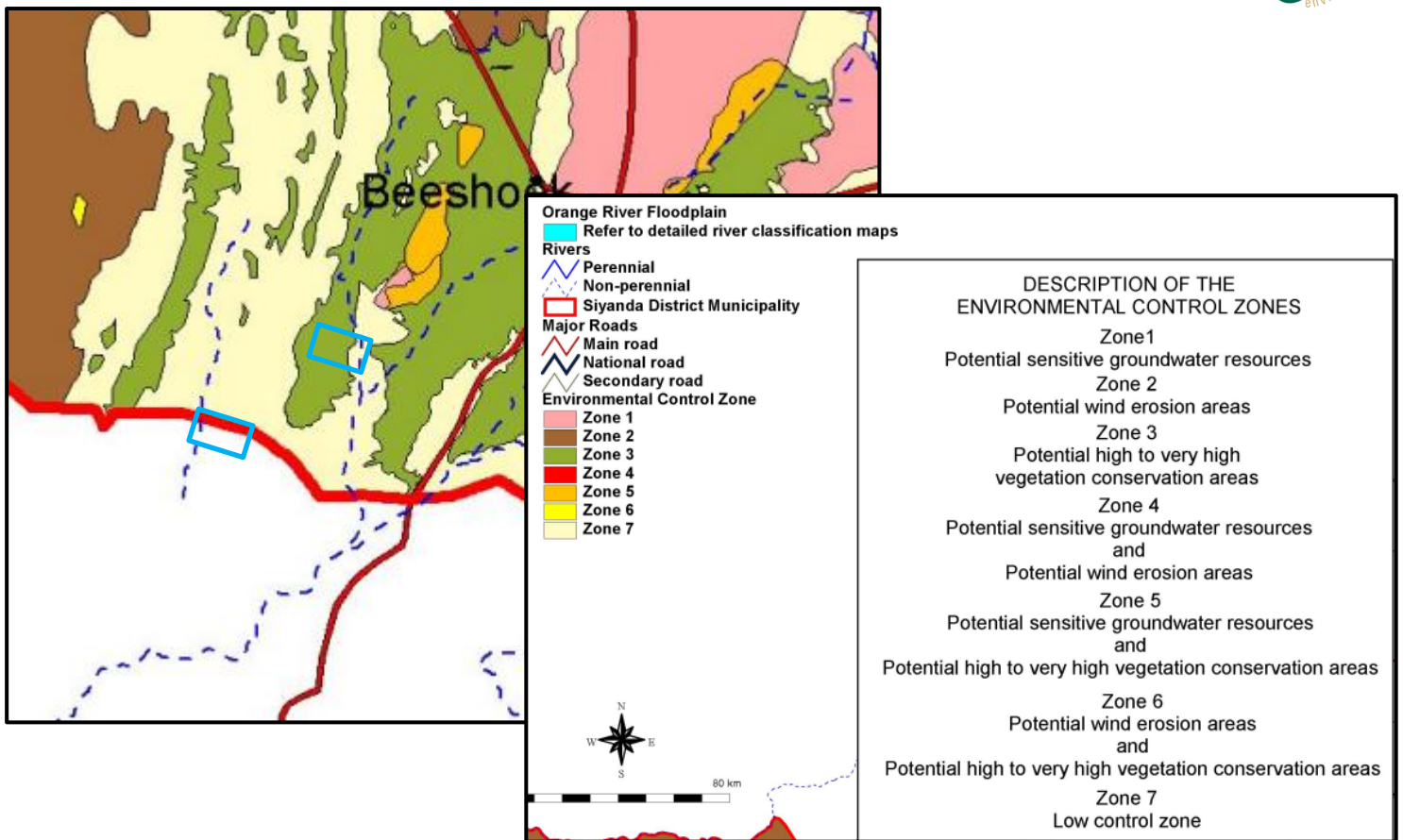


Figure 86: Environmental control zones according to the Siyanda District Municipality EMF (2008) where the blue squares indicate Bermolli No 583 and Engelsdraai No 221 respectively.

From the above the kieselguhr target area (Figure 74) identified on Bermolli No 583/5 is clearly within ECZ 7. As mentioned previously, Bermolli No 583/4 will be omitted from the invasive prospecting programme, and presently no kieselguhr potential was identified in the other areas classified as ECZ 3 (within the farm boundary). Therefore no prospecting related disturbance is anticipated in this zone.

As mentioned earlier, Portion 5 of Bermolli No 583 forms part of the proposed Kolomela Biodiversity Off-Set Area to be declared a nature reserve once the required administrative processes have been completed. CDH further submitted letters from the DFFE and DAERL objecting a mining right application submitted by Wadala Mining and Consulting (Pty) Ltd in relation to Portion 5 of Bermolli No 583 on the basis that the property was presented as a “candidate” offset receiving area and accepted for declaration as part of a Nature Reserve. DFFE and DAERL mentioned in the said correspondence that the property must be regarded as a no-go zone for mining and prospecting applications.

The kieselguhr target area on Bermolli No 583/5 is within in a previously disturbed area where the mineral was removed to most likely improve the farm roads as presented in the following figure.



Figure 87: Pictures showing the disturbed nature of the kieselguhr resource on Bermolli No 583/5.

### 3. Witdraai No 204, Vaalwater No 84 & Farm No 570 (Zaai Plaats)

The drainage line that crosses through the farm Witdraai No 204 is an ESA, while the north-western section and a portion to the north of the farm Vaalwater No 84 is indicated as CBA. No ESA/CBA occur on Farm No 570 (Zaai Plaats).

The vegetation types applicable to these farms are:

- ◆ Kuruman Mountain Bushveld (SVk10) (LT)
- ◆ Northern Upper Karoo (NKu3) (LT)
- ◆ Olifantshoek Plains Thornveld (SVk13) (LT)

The animal species theme range between High – Medium.

As presented in Figure 82, Eco-Pulse identified various area of Medium sensitivity on Witdraai No 221 that mainly corresponds to the ridges/hills on the farm. The biodiversity sensitivity of the farms Vaalwater No 84 (Figure 83) and Farm No 570 (Zaai Plaats) (Figure 84) is of Low significance.

### **Planning Recommendations for Terrestrial Ecosystems**

Terrestrial ecosystems were categorized into sensitivity classes and Eco-Pulse consequently recommends that areas categorized as High and Medium/Moderate



sensitivity in terrestrial ecosystems should be avoided, while targeted prospecting activities are recommended within areas classified as Low sensitivity.

### **Conclusion**

The sensitivity layers created for terrestrial ecosystems in the initial phase are crucial for planning purposes. It is imperative to avoid sensitive (groundtruthed) areas, particularly those classified as High sensitivity, to protect the environment and minimize project risks. Furthermore, it's anticipated that additional fieldwork will be necessary by an ecologist once the areas where invasive prospecting and bulk sampling will occur are selected. This fieldwork will help to refine the ecological sensitivity assessments and provide essential data for phase two of the assessment process.

## **7. SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT**

### **Archaeology**

*(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Right with Bulk Sampling over various farms in the Hay and Kuruman Administrative District, Northern Cape, 2024 attached as Appendix F)*

Beyond Heritage conducted a desk based Heritage Impact Assessment (HIA) for the proposed prospecting application that is located on the properties listed in Table 1. The aim of the study was to assess the proposed development footprint on a desktop level to understand the cultural layering of the study area. It serves to assess the potential impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations about the responsible cultural resources management measures required. It was also conducted to protect such resources within the framework provided by the National Heritage Resources Act of 1999 (Act No 25 of 1999) (NHRA).

At this stage of the project, it is impossible to define the exact locations of drill sites and bulk sampling trenches/pits or number of drill holes to be dug and a heritage walk down can only be conducted once this is confirmed.

### **Heritage Resources**

The various farms earmarked for prospecting are situated within a larger sphere of significant archaeological sites. Stone Age sites and artefacts can be expected across the entirety of the landscape with more significant sites clustered and expected on rocky outcrops, hills, and watercourses including pans. Low density scatters relating to the ESA, MSA, and MSA can also be expected in flat plains.

The northern farms (Devon No 277 and Botha No 313) are situated closer to Kuruman which is home to more prominent Stone Age sites of significance.

The following features may be focal points on the landscape for the presence of heritage resources:

- ◆ **Botha No 313:** the Ga-Mogara and Witleegte streams runs along the north-western boundary.
- ◆ **Devon No 277:** the Witleegte stream runs along the farm, a railway line passes through Portion 1 of the farm.
- ◆ **Bermolli No 583:** a drainage line passes through the farm; a farmyard is present on Portion 4.
- ◆ **Engelsdraai No 221:** a drainage line slopes towards the middle of the farm; two farmyards are situated on the farm and family graveyards have been noted on the farm.
- ◆ **Witdraai No 204:** Hills are prevalent on the farm, two ridges enter the farm at the north-eastern and south-western corners of the farm, a drainage line runs through the farm, a farmyard is present on Portion 1, the Soutloop stream dissects the farm.
- ◆ **Vaalwater No 84:** Hills are prevalent in the southern parts of the farm, a farmyard is present on Portion 1 and south of the remainder of the farm, family graveyards have also been noted on the farm, pans are also present on the farm.
- ◆ **Farm No 570 (Zaai Plaats):** Hills present on the farm Vaalwater 84 continue into the southeastern corner of the Farm No. 570. A drainage line also runs through the farm. Two farmsteads/homesteads are present south of the R383.

The Ga-Mogara and Witleegte streams have previously yielded MSA and LSA stone tools in a previous survey in which surface collection was recommended but as such heritage resources are confirmed within these water courses on farms Botha No 313 and Devon No 277 (Hutten and Hutten 2013).

These highlighted features, including further features which may be identified during prospecting including rocky outcrops, hills, and water courses should be avoided during non-invasive prospecting as these features are generally

concurrent with significant heritage resources within the Karoo landscape. Informal graves may be also present across the landscape.

### **Cultural Landscape**

The landscape has been mined since the contact period known as the Ceramic Later Stone Age whereby evidence of specularite mining and workings have been documented. The region is mineralogically rich, and mining is a large driving force in the economic sector. The project areas are situated within a landscape which is known for its extensive cultural layering spanning from the Early Stone Age to the Historic Period.

### **Archaeology Conclusion**

Due to the geographical size of the exploration application and the fact that no intrusive activities will occur at this point of the application, it was deemed not feasible to conduct fieldwork at this point. Several large-scale heritage surveys were conducted for mining projects in the area and the archaeological character of the area is now well described (e.g., Beaumont 2007; 2008, Morris 2005; 2008, Huffman 2001, Hutten and Hutten 2013, Fourie and van der Walt 2006, Webley and Halkett 2008). Extensive archaeological research has also been conducted at the Kathu Complex and Kuruman (Beaumont 2000). This provides the opportunity to establish potential heritage resources that could be affected in the area. The Farms Botha 313 and Devon 277 have previously undergone archaeological surveying whereby Middle and Later Stone Age artefacts were identified mainly along the Ga-Mogara and Witleegte streams (Hutten and Hutten 2013). It was recommended that the finds be collected and stored in a museum, but the presence of further heritage resources cannot be excluded here as the survey verified the heritage sensitivity of these watercourses.

National Heritage sites of Kathu Townlands and Wonderwerk Cave in the Kuruman Hills are situated near the northern farms. It is clear from the studies conducted that the general area has a wealth of heritage sites and a cultural layering dating back to the Stone Age with scatters and sites dating to the ESA, MSA and LSA. Sites and artefacts dating to these periods are scattered over the landscape with MSA and LSA sites centred on rocky outcrops, pans and watercourses and similar sites are expected to occur in the project areas. Due to the great archaeological significance of the landscape, especially relating to the Stone Age, rocky outcrops, hills, and watercourses such as drainage lines and pans should be avoided as significant Middle and Late Stone Age sites are more likely to be found within these

topographical features. Kieselguhr appears to be more prevalent along ancient water courses and paleo-marshes within the Griqualand West area where the southern Project areas are situated. These ancient watercourses may however be of high heritage sensitivity and Stone Age sites of significance may be present within these ancient watercourses and should be avoided as far as possible in terms of prospecting.

No intrusive activities will occur at this point of the application and the potential impact on heritage resources is expected to be very low. Final bulk sample trench/pit locations must be subject to a heritage walk-down prior to invasive prospecting.

The impact to heritage resources is expected to be low provided that the recommendations (refer to *Part A(1)(g)(viii) The possible mitigation measures* and *Part A(1)(k) Summary of Specialist Reports*) in this report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval.

The overall impact of the Project with the recommended mitigation measures is acceptable and residual impacts can be managed to an acceptable level through implementation of the recommendations made in this report. The socio-economic benefits also outweigh the possible impacts of the development if the correct mitigation measures are implemented for the Project.

### **Palaeontology**

*Information extracted from the Palaeontological Impact Assessment for the Prospecting Right with bulk sampling over various farms in the Hay and Kuruman Administrative Districts, Northern Cape Province attached as Appendix G)*

Diatomite is the accumulation of millions of diatoms which are microscopic algae of the *Chrysophyta* that have silica exoskeletons. Seasonal or pH changes trigger the mass death of the floating algae, and their exoskeletons are deposited at the bottom of lakes.

Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. The aeolian sands do not preserve fossils but might cover features such as palaeo-pans or palaeo-springs that trap or form fossils but no such feature is visible in the satellite imagery. Since there is an extremely high chance that diatoms will be found and destroyed, and a small chance that trapped or transported fossils occur in the sands and may be disturbed a Fossil Chance Find Protocol has been proposed by the specialist.

Taking account of the defined criteria, the potential impact to fossil heritage resources is extremely high.

### **Palaeontology Conclusion**

Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the overlying soils and sands of the Quaternary. There is a very small chance that fossils may occur in traps such as palaeo-pans or palaeo-springs, but no such feature is visible in the satellite imagery. Nonetheless, a Fossil Chance Find Protocol was added to the EMPr. If fossils are found by the contractor, environmental officer or other responsible person once prospecting has commenced it must be rescued and a palaeontologist called to assess and collect a representative sample.

It is known that diatomite occurs in the prospecting areas and the age and extent of the fossils is unknown. Therefore, samples must be collected and deposited in a recognised repository, such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action has been taken.

## **8. SITE SPECIFIC EXISTING INFRASTRUCTURE**

Various farmyards occur within the proposed prospecting area, and the existing infrastructure component of the project therefore includes, but is not limited to, the following:

- ◆ Family graveyards;
- ◆ Fencing;
- ◆ Housing and supporting structures;
- ◆ Power and telephone lines;
- ◆ Pipeline servitude;
- ◆ Railway lines;
- ◆ Roads (public as well as private);
- ◆ Stock pens;
- ◆ Water abstraction and storage infrastructure.

The proposed prospecting method is such that it can be moved away from build structures and existing infrastructure. As mentioned earlier, jeep-tracks to some of the prospecting areas will be developed in agreement with the landowner, and

presently it is not expected that the proposed activity will impact or necessitate the removal of any existing infrastructure.

As mentioned earlier, no prospecting will be done (amongst others) on Devon No 277 and no invasive prospecting on Botha No 313, safeguarding the existing infrastructure on these farms (including the railway line on Devon No 277/1) against any disturbance.

**(d) Environmental and current land use map.**

(Show all environmental, and current land use features)

The environmental and current land use maps are attached as Appendix B1 – B3.

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

(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).

By nature, the non-invasive prospecting activities are not expected to have an impact on the receiving environment as it will occur off-site at desktop level. However, the following potential impacts were identified regarding the invasive prospecting activities in each phase of the proposed project. The significance rating was determined using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact rating listed below was determined for each impact **prior** to bringing the proposed mitigation measures into consideration. The degree of mitigation indicates the possibility of partial, full or no mitigation of the identified impact.

**INVASIVE PROSPECTING (PHASE 3 & 5): SITE ESTABLISHMENT**

Temporary loss of agricultural land earmarked for site camp establishment.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low-Medium			Final Project Proposal			Degree of Mitigation: Partial	
1	4	1	2	4	5	4.5	9

Visual intrusion because of site camp.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low-Medium			Final Project Proposal			Degree of Mitigation: Partial	
2	4	1	2.3	3	5	4	9.2

Work opportunity for 15 - 20 community members (**Positive Impact**)

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	5	3.3	5	5	5	<b>16.5</b>

Upgrading of access roads during invasive prospecting (**Positive Impact**).

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	4	3	4	2	3	<b>9</b>

**INVASIVE PROSPECTING (PHASE 3 & 5): OPERATIONAL PHASE**

Temporary loss of some agricultural land earmarked for invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	4	1	2.3	5	5	5	<b>11.5</b>

Visual intrusion because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	4	2	2.6	5	5	5	<b>13</b>

Potential negative impact on the identified CBA and/or ESA areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
4	4	3	3.6	4	5	4.5	<b>16.2</b>

Potential negative impact on the watercourses/wetlands and FEPA's of the study area.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
4	4	3	3.6	4	5	4.5	<b>16.2</b>

Increase in sediment inputs and turbidity due to invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	3	4	3.6	3	5	4	<b>14.4</b>

Increase in toxic heavy metal contaminants.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	3	4	3.6	3	1	2	7.2

Dust nuisance because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	2	3	4	5	4.5	13.5

Noise nuisance because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	4	2	2.6	4	5	4.5	11.7

Potential impact on sensitive/protected flora within the footprint.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	5	4.3	3	2	2.5	10.7

Potential impact on fauna within the footprint.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	3	3.3	3	2	2.5	8.2

Infestation of the prospecting areas with invader plant species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	2	3	4	2	3	9

Potential soil contamination associated with littering and/or hydrocarbon spillages.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	1	3	4	3	3.5	10.5

Potential impact on areas/infrastructure of heritage or cultural concern.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	5	5	4.6	1	1	1	4.6



Potential impact on palaeontological aspects.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
4	5	1	4.6	5	5	5	<b>23</b>

Erosion of denuded areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	2	3	4	2	3	<b>9</b>

Deterioration of access roads due to prospecting activities.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	3	3.3	4	3	3.5	<b>11.5</b>

Health and safety risk posed by invasive activities to prospecting employees.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	1	3	3	5	4	<b>12</b>

Presence of prospector negatively affecting safety and security of the property.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	4	4	3	5	4	<b>16</b>

Increased fire risk during operational phase.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	3	3.3	4	5	4.5	<b>14.8</b>

Upgrading of access roads during invasive prospecting (**Positive Impact**).

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	3	3.6	5	5	5	<b>18</b>

NC 30/5/1/1/2/13826 PR: DIATOMITE / KIESELGUHR / DIATOMACEOUS EARTH PROSPECTING RIGHT  
**INVASIVE PROSPECTING (PHASE 3 & 5): DECOMMISSIONING (MEDIUM- & LONG TERM)**



Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	5	1	3	4	5	4.5	<b>13.5</b>

Potential impact associated with litter/hydrocarbon spillages left at the prospected areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	5	1	3	4	5	4.5	<b>13.5</b>

Erosion of roads, vehicle tracks and/or denuded areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	5	2	3.3	4	2	3	<b>9.9</b>

Infestation of the reinstated areas with invader plant species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	5	2	3.3	4	2	3	<b>9.9</b>

Return of the site camp and prospected areas to agricultural use. **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	5	5	3.7	5	5	5	<b>18.5</b>

**CUMULATIVE IMPACTS**

Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	5	4	4	5	4.5	<b>18</b>

Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	4	3.6	2	5	3.5	<b>12.6</b>

Fragmentation of ecosystems affecting safe movement of faunal species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
3	4	4	3.6	2	5	3.5	<b>12.6</b>

Potential impact on the declaration of the Kolomela biodiversity offset area.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
4	4	5	4.3	4	5	4.5	<b>19.4</b>

Compensation of landowners during operational phase. **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	4	3	5	5	5	<b>15</b>

**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 to decide the extent to which the initial site layout needs revision).

**Methodology for the assessment of the potential environmental, social and cultural impacts**

**DEFINITIONS AND CONCEPTS**

**Environmental significance**

The concept of significance is at the core of impact identification, evaluation, and decision-making. The concept remains largely undefined and there is no international consensus on a single definition. The following common elements are recognized from the various interpretations:

- ◆ Environmental significance is a value judgment
- ◆ The degree of environmental significance depends on the nature of the impact
- ◆ The importance is rated in terms of both biophysical and socio-economic values
- ◆ Determining significance involves the amount of change to the environment perceived to be acceptable to affected communities.

Significance can be differentiated into impact magnitude and impact significance.

Impact magnitude is the measurable change (i.e., intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e., level of acceptability) (DEAT (2002) Impact Significance, Integrated Environmental Management, Information Series 5).

The concept of risk has two dimensions, namely the consequence of an event or set of circumstances, and the likelihood of consequences being realized (Environment Australia (1999) Environmental Risk Management).

### **Impact**

The positive or negative effects on human well-being and / or the environment.

### **Consequence**

The intermediate or outcome of an event or situation OR it is the result, on the environment, of an event.

### **Likelihood**

A qualitative term covering both probability and frequency.

### **Frequency**

The number of occurrences of a defined event in each time or rate.

### **Probability**

The likelihood of a specific outcome measured by the ratio of a specific outcome to the total number of possible outcomes.

### **Environment**

Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation (ISO 14004, 1996).

### **Methodology that will be used**

The environmental significance assessment methodology is based on the following determination:

$$\text{Environmental Significance} = \text{Overall Consequence} \times \text{Overall Likelihood}$$

**Determination of Overall Consequence**

Consequence analysis is a mixture of quantitative and qualitative information, and the outcome can be positive or negative. Several factors can be used to determine consequence. For determining the environmental significance in terms of consequence, the following factors were chosen **Severity/Intensity, Duration and Extent/Spatial Scale**. Each factor is assigned a rating of 1 to 5, as described in the tables below.

**Determination of Severity / Intensity**

**Severity** relates to the nature of the event, aspect or impact to the environment and describes how severe the aspects impact on the biophysical and socio-economic environment.

The following table will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 22: Table to be used to obtain an overall rating of severity, taking into consideration the various criteria.

TYPE OF CRITERIA	RATING				
	1	2	3	4	5
Quantitative	0-20%	21-40%	41-60%	61-80%	81-100%
Qualitative	Insignificant / Non-harmful	Small / Potentially harmful	Significant/ Harmful	Great/ Very harmful	Disastrous / Extremely harmful
Social/ Community response	Acceptable / I&AP satisfied	Slightly tolerable / Possible objections	Intolerable/ Sporadic complaints	Unacceptable / Widespread complaints	Totally unacceptable / Possible legal action
Irreversibility	Very low cost to mitigate/ High potential to mitigate impacts to level of insignificance/ Easily reversible	Low cost to mitigate	Substantial cost to mitigate/ Potential to mitigate impacts/ Potential to reverse impact	High cost to mitigate	Prohibitive cost to mitigate/ Little or no mechanism to mitigate impact Irreversible
Biophysical (Air quality, water quantity and quality, waste production, fauna, and flora)	Insignificant change / deterioration or disturbance	Moderate change / deterioration or disturbance	Significant change / deterioration or disturbance	Very significant change / deterioration or disturbance	Disastrous change / deterioration or disturbance

### Determination of Duration

Duration refers to the amount of time that the environment will be affected by the event, risk or impact, if no intervention e.g., remedial action takes place.

Table 23: Criteria for the rating of duration.

RATING	DESCRIPTION
1	Up to one month
2	One month to three months (quarter)
3	Three months to one year
4	One to ten years
5	Beyond ten years

### Determination of Extent/Spatial Scale

Extent or spatial scale is the area affected by the event, aspect, or impact.

Table 24: Criteria for the rating of extent / spatial scale.

RATING	DESCRIPTION
1	Immediate, fully contained area
2	Surrounding area
3	Within Business Unit area of responsibility
4	Within the farm/neighbouring farm area
5	Regional, National, International

### Determination of Overall Consequence

Overall consequence is determined by adding the factors determined above and summarized below, and then dividing the sum by 3.

Table 25: Example of calculating overall consequence.

CONSEQUENCE	RATING
Severity	Example 4
Duration	Example 2
Extent	Example 4
<b>SUBTOTAL</b>	<b>10</b>
<b>TOTAL CONSEQUENCE:</b> (Subtotal divided by 3)	<b>3.3</b>

### Determination of Likelihood

The determination of likelihood is a combination of Frequency and Probability. Each factor is assigned a rating of 1 to 5, as described below and in tables 6 and 7.

**Determination of Frequency**

Frequency refers to how often the specific activity, related to the event, aspect, or impact, is undertaken.

Table 26: Criteria for the rating of frequency.

RATING	DESCRIPTION
1	Once a year or once/more during operation
2	Once/more in 6 Months
3	Once/more a Month
4	Once/more a Week
5	Daily

**Determination of Probability**

Probability refers to how often the activity or aspect has an impact on the environment.

Table 27: Criteria for the rating of probability.

RATING	DESCRIPTION
1	Almost never / almost impossible
2	Very seldom / highly unlikely
3	Infrequent / unlikely / seldom
4	Often / regularly / likely / possible
5	Daily / highly likely / definitely

**Overall Likelihood**

Overall likelihood is calculated by adding the factors determined above and summarized below, and then dividing the sum by 2.

Table 28: Example of calculating overall likelihood.

CONSEQUENCE	RATING
Frequency	Example 4
Probability	Example 2
<b>SUBTOTAL</b>	<b>6</b>
<b>TOTAL LIKELIHOOD</b> (Subtotal divided by 2)	<b>3</b>

**Determination of Overall Environmental Significance:**

The multiplication of overall consequence with overall likelihood will provide the environmental significance, which is a number that will then fall into a range of **LOW**, **LOW-MEDIUM**, **MEDIUM**, **MEDIUM-HIGH**, or **HIGH**, as shown in the table below.

Table 29: Determination of overall environmental significance.

SIGNIFICANCE OR RISK	LOW	LOW-MEDIUM	MEDIUM	MEDIUM-HIGH	HIGH
Overall Consequence x Overall Likelihood	1 - 4.9	5 - 9.9	10 - 14.9	15 – 19.9	20 - 25

**Qualitative description or magnitude of Environmental Significance**

This description is qualitative and is an indication of the nature or magnitude of the Environmental Significance. It also guides the prioritizations and decision-making process associated with this event, aspect or impact.

Table 30: Description of environmental significance and related action required.

SIGNIFICANCE	LOW	LOW-MEDIUM	MEDIUM	MEDIUM-HIGH	HIGH
Impact Magnitude	Impact is of very low order and therefore likely to have very little real effect. Acceptable.	Impact is of low order and therefore likely to have little real effect. Acceptable.	Impact is real, and potentially substantial in relation to other impacts. Can pose a risk to company	Impact is real and substantial in relation to other impacts. Pose a risk to the company. Unacceptable	Impact is of the highest order possible. Unacceptable. Fatal flaw.
Action Required	Maintain current management measures. Where possible improve.	Maintain current management measures. Implement monitoring and evaluate to determine potential increase in risk. Where possible improve	Implement monitoring. Investigate mitigation measures and improve management measures to reduce risk, where possible.	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Based on the above, the significance rating scale has been determined as follows:

- High                      Of the highest order possible within the bounds of impacts, which could occur. In the case of negative impacts, there would be no possible mitigation and / or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.
- Medium-High           Impacts of a substantial order. In the case of negative impacts, mitigation and / or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts,



other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

Medium	Impact would be real but not substantial within the bounds of those, which could occur. In the case of negative impacts, mitigation and / or remedial activity would be both feasible and easily possible. In case of positive impacts; other means of achieving these benefits would be about equal in time, cost, and effort.
Low-Medium	Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and / or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.
Low	Impact would be negligible. In the case of negative impacts, almost no mitigation and or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap, and simple. In the case of positive impacts, alternative means would almost all likely be better, in one or several ways, than this means of achieving the benefit
Insignificant	There would be a no impact at all – not even a very low impact on the system or any of its parts.

**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)

**POSITIVE IMPACTS ASSOCIATED WITH THE PROJECT PROPOSAL**

- ◆ If approved the prospecting activities will identify the kieselguhr sources within the earmarked areas.
- ◆ Work opportunities for 15 - 20 community members including associated growth development opportunities.
- ◆ Compensation of landowners during operational phase.
- ◆ Upgrading of access roads during invasive prospecting.
- ◆ Return of the site camp and prospected areas to agricultural use.
- ◆ Feasible mineral resources could lead to economic development of the earmarked areas.

**NEGATIVE IMPACTS ASSOCIATED WITH THE PROJECT PROPOSAL:**

The following table lists the potential negative impacts associated with the present project proposal:

*Table 31: List of potential negative impacts associated with the preferred project proposal.*

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
<ul style="list-style-type: none"> <li>◆ Site establishment.</li> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Temporary loss of agricultural land earmarked for site camp establishment.</li> <li>◆ Temporary loss of some agricultural land earmarked for invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Low-Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Site establishment.</li> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Visual intrusion because of site camp.</li> <li>◆ Visual intrusion because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low</li> <li>◆ Low-Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> <li>◆ Cumulative impacts.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential impact on sensitive/protected flora within the footprint.</li> <li>◆ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>◆ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.</li> <li>◆ Potential impact on the declaration of the Kolomela biodiversity offset area</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Medium-High</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Low-Medium</li> <li>◆ Low</li> <li>◆ Low</li> <li>◆ Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> <li>◆ Increase in sediment inputs and turbidity due to invasive prospecting.</li> <li>◆ Increase in toxic heavy metal contaminants.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Low-Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium</li> <li>◆ Low</li> <li>◆ Low</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Dust nuisance because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low</li> </ul>

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
◆ Operational phase	◆ Noise nuisance because of invasive prospecting.	◆ Medium	◆ Low
◆ Operational phase. ◆ Cumulative impacts.	◆ Potential impact on fauna within the footprint. ◆ Fragmentation of ecosystems affecting safe movement of faunal species.	◆ Low-Medium ◆ Medium	◆ Low ◆ Low
◆ Operational phase. ◆ Decommissioning phase.	◆ Infestation of the prospecting areas with invader plant species. ◆ Infestation of the reinsated areas with invader plant species.	◆ Low-Medium ◆ Low-Medium	◆ Low ◆ Low
◆ Operational phase. ◆ Decommissioning phase.	◆ Potential soil contamination associated with littering and/or hydrcarbon spillages. ◆ Potential impact associated with litter/hydrocarbon spillages left at the prospected areas.	◆ Medium ◆ Medium	◆ Low ◆ Low
◆ Operational phase.	◆ Potential impact on areas/infrastructure of heritage or cultural concern. ◆ Potential impact on palaeontological aspects.	◆ Low ◆ High	◆ Low ◆ Medium-High
◆ Operational phase. ◆ Decommissioning phase.	◆ Erosion of denuded areas. ◆ Erosion of roads, veichle tracks and/or denuded areas.	◆ Low-Medium ◆ Low-Medium	◆ Low ◆ Low
◆ Operational phase.	◆ Deterioration of access roads due to prospecting activities.	◆ Medium	◆ Low
◆ Operational phase.	◆ Health and safety risk posed by invasive activities to prospecting employees.	◆ Medium	◆ Low
◆ Operational phase.	◆ Presence of prospector negatively affecting safety and security of the property.	◆ Medium-High	◆ Low
◆ Operational phase.	◆ Increased fire risk during operational phase.	◆ Medium	◆ Low
◆ Decommissioning phase.	◆ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.	◆ Medium	◆ Low

**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 following mitigation measures are proposed to address/minimize the potential impacts that the proposed activity may have on the surrounding environment.

**VISUAL CHARACTERISTICS****Visual Mitigation**

The risk of the prospecting activities having a negative impact on the aesthetic quality of the surrounding environment is deemed to be of low-medium significance should the following mitigation measures be implemented.

- ◆ Prospecting must be contained to the approved boundaries.
- ◆ The camp site and every sampling site must have a neat appearance and always be kept in good condition.
- ◆ The contractor must limit vegetation removal (where possible) and avoid the removal of large trees (>20 cm stem) or vegetation of significance without prior approval of the ECO.
- ◆ Prospecting equipment must be stored neatly in a dedicated area when not in use.
- ◆ Concurrent rehabilitation must be done as prospecting progress to limit the visual impact on the aesthetic value of the area.
- ◆ Stripping of topsoil may only be done immediately prior to the use of a specific area.
- ◆ Upon closure all sites must be rehabilitated to keep the visual impact on the aesthetic value of the area to a minimum.

**AIR QUALITY AND NOISE AMBIANCE****Fugitive Dust Emission Mitigation**

The risk of dust, generated due to the prospecting activities, having a negative impact on the surrounding environment can be reduced to being low through the implementation of the following mitigation measures:

- ◆ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).
- ◆ The site manager must ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.
- ◆ The crusher plant must be equipped with water sprayers to alleviate dust and fines buildup must at least weekly be removed from and around the conveyors.

- ◆ Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust.
- ◆ Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to prospecting.
- ◆ Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.
- ◆ All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).
- ◆ Best practice measures shall be implemented during the stripping of topsoil to minimize potential dust impacts.

### **Noise Handling**

The risk of noise, generated by the prospecting activity, having a negative impact on the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- ◆ The Applicant must ensure that the employees and visitors to the site conduct themselves in an acceptable manner while on site.
- ◆ No loud music may be permitted at the site camp and/or prospecting areas.
- ◆ All vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).
- ◆ Best practice measures shall be implemented to minimize potential noise impacts.

### **GEOLOGY AND SOIL**

#### **Topsoil Management**

- ◆ The upper 300 mm of soil must be stripped and stockpiled before site camp establishment and/or prospecting.
- ◆ Topsoil is a valuable and essential resource for rehabilitation, and it must therefore be managed carefully to conserve and maintain it throughout the stockpiling and rehabilitation processes.
- ◆ Topsoil stripping, stockpiling, and re-spreading must be done in a systematic way. The prospecting plan must be such that topsoil is stockpiled for the minimum possible time.
- ◆ The topsoil must be placed on a levelled area, within the prospecting footprint. No topsoil may be stockpiled in undisturbed areas.

- ◆ Topsoil stockpiles must be protected against losses by water- and wind erosion. Stockpiles must be positioned so as not to be vulnerable to erosion by wind and water. The establishment of plants (grass or indigenous cover crop) on the stockpiles will help to prevent erosion.
- ◆ Topsoil heaps may not exceed 2 m to preserve micro-organisms within the topsoil, which can be lost due to compaction and lack of oxygen.
- ◆ The temporary topsoil stockpiles must be kept free of invasive plant species.
- ◆ Storm- and runoff water must be diverted around the stockpile area to prevent erosion.
- ◆ The stockpiled topsoil must be evenly spread, to a depth of 300 mm, over the rehabilitated area upon closure of the site.
- ◆ The Applicant must strive to re-instate topsoil at a time of year when vegetation cover can be established as quickly as possible afterwards, so that erosion of returned topsoil by both rain and wind, before vegetation is established, is minimized. The best time of year is at the end of the rainy season, when there is moisture in the soil for vegetation establishment and the risk of heavy rainfall events is minimal.
- ◆ A cover crop must be planted, irrigated, and established immediately after spreading of topsoil, to stabilize the soil and protect it from erosion. The cover crop must be fertilized for optimum biomass production, and any soil deficiencies must be corrected, based on a chemical analysis of the re-spread soil (if deemed necessary). It is important that rehabilitation be taken up to the point of cover crop stabilization. Rehabilitation cannot be considered complete until the first cover crop is well established.
- ◆ The rehabilitated area must be monitored for erosion, and appropriately stabilized if any erosion occurs for at least 12 months after reinstatement.

## **HYDROLOGY**

### **Mitigating the potential impact on watercourse/wetlands and FEPA's of the study area**

The potential of the prospecting activities having a negative impact on the FEPA's, watercourses and/or wetlands will be of medium significance should the following mitigation measures be implemented:

- ◆ No prospecting may occur in any freshwater ecosystems considered high-moderate sensitivity prior to a second phase investigation by a qualified hydrologist.
- ◆ The findings of the hydrologist, with the final sampling programme, must be submitted to the DMRE for approval prior to commencement.
- ◆ No activities may take place, without the necessary authorisation from the DWS, within a horizontal distance of 100 m from any watercourse or estuary or within a 500 m radius from a delineated boundary of any wetland or pan.

- ◆ No site camp may be established in or within 100 m of a watercourse.
- ◆ In addition to the EA, if a WUA is applicable, the Applicant must always adhere to the conditions of the authorisation.
- ◆ Water abstraction may only occur at a registered water source in accordance with the requirements of the authorisation. Water tally sheets must monitor water use, and baseline water quality results must be obtained for each source and filed for auditing purposes.
- ◆ Upon closure, the Applicant must remove all prospecting related equipment/machinery from the footprint and reinstate the sampled areas to a state determined and approved by the hydrologist.

### **Erosion Mitigation / Storm Water Control**

- ◆ Storm water must be diverted around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion.
- ◆ Drainage must be controlled to ensure that runoff from the prospecting areas do not culminate in off-site pollution, flooding or result in any damage to properties downstream or any storm water discharge points.
- ◆ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system (if applicable).
- ◆ Dirty water must be collected and contained in a system separate from the clean water system.
- ◆ Dirty water must be prevented from spilling or seeping into clean water systems.

### **TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUNDCOVER AND FAUNA**

#### **Mitigating the impacts on floral species and fragmentation of vegetation communities within the CBA and ESA ecosystems**

The risk of the prospecting activity having a negative impact on the vegetation cover of the footprint will be low-medium should the following mitigation measures be implemented:

- ◆ Once the invasive prospecting programme is available additional fieldwork must be done by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants.
- ◆ The findings of the ecologist, with the final sampling programme, must be submitted to the DMRE for approval prior to commencement.
- ◆ The prospecting boundaries must be clearly demarcated, and all operations must be contained to the approved areas.

- ◆ The area outside the boundaries must be declared a no-go area, and all employees must be educated accordingly.
- ◆ An invasive plant species management plan must be implemented on site to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.
- ◆ Should an application for the removal of protected plant species, and/or indigenous plants (1) on large-scale, (2) or on small scale within 100 meters of a river or a public road, be applicable, the EA Holder must submit a thorough walk-through report to the relevant competent authorities (DAERL) prior to commencing any earthworks. This report must comprehensively assess, and list species based on their protection statuses according to the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA), the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA: ToPS), and the National Forest Act 84 of 1998 (NFA). It must also include the IUCN Red List status, endemism, and estimate the quantities of each impacted protected species. Ideally, the walk-through assessment must be conducted during the appropriate season for the area to ensure accurate observation of species presence and habitat conditions, thereby maximizing the effectiveness of the assessment in capturing the full ecological picture.
- ◆ Should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.
- ◆ At Bermolli No 583/5 and Engelsdraai No 221/RE the site camps must be established on previously disturbed/altered areas.
- ◆ Bulk sampling must be restricted to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s where the ecologist deems it necessary.

### **Management of Invasive Plant Species**

The risk of weeds or invader plants invading the disturbed area can be reduced to being low through the implementation of the mitigation measures listed below:

- ◆ The invasive plant species management plan (attached as Appendix K to this document) must be implemented at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto). Weed/alien clearing must be done on an ongoing basis throughout the life of the prospecting activities.
- ◆ All stockpiles must be kept free of invasive plant species.
- ◆ Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
  - ▶ The plants can be uprooted, felled, or cut off and can be destroyed completely.



- ▶ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.

### **Protection of Fauna**

The risk resulting from the prospecting activity on the fauna of the footprint as well as the surrounding environment, can be reduced to low through the implementation of the mitigation measures listed below:

- ◆ The site manager must ensure no fauna is caught, killed, harmed, sold, or played with.
- ◆ Workers must be instructed to report any animals that may be trapped in the working area.
- ◆ No snares may be set, or nests raided for eggs or young.
- ◆ No pets allowed on site.

### **CULTURAL AND HERITAGE ENVIRONMENT**

#### **Archaeological, Heritage and Palaeontological Aspects**

The impact on archaeological, heritage and palaeontological aspects, because of the prospecting activities, can be reduced to being low through the implementation of the mitigation measures listed below:

- ◆ Once the sampling sites have been confirmed these areas have to be subjected to a heritage walk down, this should be conducted prior to the commencement of invasive prospecting activities.
- ◆ Sampling sites must be kept as close as possible to existing roads to minimise the impact on the landscape.
- ◆ Focal points on the landscape like rocky outcrops, caves, or pans must be avoided as far as possible as these areas could be sensitive from a heritage point of view.
- ◆ Burial sites, memorials and graves must be avoided with a 30 m buffer zone.
- ◆ Further palaeontological studies must be conducted once the impact areas are confirmed.
- ◆ Samples of diatomite from each farm must be collected and deposited at a recognised repository such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action has been taken.
- ◆ Monitoring of the project area by the ECO during the exploration phase for heritage chance finds, and if chance finds are encountered to implement the Chance Find Procedure for the project.
- ◆ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at

the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

- ◆ It is the responsibility of the senior on-site manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- ◆ The senior on-site manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA.
- ◆ Work may only continue once the go-ahead was issued by SAHRA.

## **LAND USE**

### **Loss of Agricultural Land for Duration of Prospecting**

- ◆ If needed, areas that has been prospected and rehabilitated can be signed back to the landowners to revert to agricultural use once the cover crop stabilised.

## **EXISTING INFRASTRUCTURE**

### **Access Road Mitigation**

- ◆ Stormwater must be diverted around the access road to prevent erosion.
- ◆ Vehicular movement must be restricted to the existing access roads (where possible) and crisscrossing of tracks through undisturbed areas must be prohibited.
- ◆ Rutting and erosion of the access road caused as a direct result of the prospecting activities must be repaired by the Applicant.
- ◆ Overloading of the trucks must be prevented, and proof of load weights must be filed for auditing purposes.
- ◆ Prior to commencement, all contractors must sign an agreement confirming their responsibility towards the movement of their employees.
- ◆ Damages to fences (by prospecting employees) must be repaired/reinstated by the responsible contractor. Losses, due to gates left open by prospecting employees, must be compensated by the responsible entity.
- ◆ A speed limit of not more than 40 km/h on internal roads and 60 km/h on public roads must be implemented for the duration of the project.

## GENERAL

### Waste Management

The risk of uncontrolled waste generation having a negative impact on the surrounding environment can be reduced to being low through the implementation of the mitigation measures listed below:

- ◆ Vehicle maintenance, repairs and services may only take place at the workshop and service area in the site camp. If emergency repairs are needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal.
- ◆ Ablution facilities must be provided to all employees. The toilet must be placed outside the 1:100 year floodline of all watercourses.
- ◆ The ablution facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage. Any pollution problems arising from the above are to be addressed immediately by the Applicant.
- ◆ If a diesel bowser is used on site, it must always be equipped with a drip tray. Drip trays must be used during every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.
- ◆ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.
- ◆ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.
- ◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed to the hazardous waste storage area of the workshop, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.
- ◆ General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to a registered general waste landfill site.
- ◆ No waste may be buried or burned on the site.
- ◆ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities is reported to the Department of Water and Sanitation and other relevant authorities.

### **Management of Health and Safety Risks**

- ◆ Adequate ablution facilities and water for human consumption must daily be available on site.
- ◆ Worker(s) must have access to the correct personal protection equipment (PPE) as required by law.
- ◆ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).
- ◆ Drill-holes must daily be covered, and pits/trenches barricaded even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped, while the pits/trenches are backfilled as prescribed in the rehabilitation plan.

### **Management of safety and security risk posed by prospecting activities to residents**

- ◆ Employees to be appointed must be vetted prior to inception of contract.
- ◆ No employees may be allowed to reside within the prospecting area.
- ◆ Prospecting employees must be educated to report suspicious looking person/s and/or matters to site management.
- ◆ Direct communication between the prospector and the landowners must be maintained for the duration of the site establishment-, operational, and decommissioning phases.
- ◆ The prospecting contractor may not enter negotiations with farm employees.
- ◆ Prospecting may only take place during normal business hours and unless otherwise authorised by the landowner.
- ◆ No alcohol or prohibited drugs may be allowed on site.
- ◆ Attendance registers must be maintained, and all prospecting vehicles/machinery must be pre-registered with the landowner/security.
- ◆ No firearms will be allowed on site.

### **Fire Risk Management**

- ◆ No open fires are permitted on any of the sampling sites. Contained fires for heating and cooking (i.e. in a fire drum) but be restricted to designated areas at the site camp,
- ◆ Employees must be prevented from setting fires randomly outside designated areas.
- ◆ No fuel or chemicals may be stored under trees.
- ◆ Gas may not be stored in the same storage area as liquid fuel.
- ◆ Smoking may only occur at designated areas (>3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds.
- ◆ Ensure Work Site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site.

- ◆ Specific fire safety precautions must be implemented during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any “HOT WORK” is undertaken e.g. welding, grinding, gas cutting etc,
- ◆ Any fires noted on site must be reported to the responsible SHE rep and/or fire officer.
- ◆ The site must implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases.
- ◆ In the event of large fires all personnel must assemble at a safe assembly point to be transported from site. The fire department or local fire watch must be informed of the fire to ensure that the fire is brought under control as soon as possible.

**ix) Motivation where no alternative sites were considered.**

Not applicable.

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

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

Refer to *Part A(1)(g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site above*, and *Part A(1)(k)(i) Summary of the key findings of the environmental impact assessment*.

**h) 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).

During the impact assessment process, the following potential impacts were identified of each main activity in each phase. An initial significance rating (listed under *v) Impacts and Risks Identified*) was determined for each potential impact should the mitigation measures proposed in this document not be implemented on-site.

The impact assessment process then continued in identifying mitigation measures to address the impact that the proposed prospecting activities may have on the surrounding environment. The significance rating was again determined for each impact associated with the identified alternatives using the methodology as explained under *vi) Methodology Used in Determining and Ranking the Significance*. The impact ratings listed below was determined for each impact **after** bringing the proposed mitigation measures into consideration and therefore represents the final layout/activity proposal.

Temporary loss of agricultural land earmarked for site camp establishment.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
1	3	1	1.6	4	5	4.5	<b>7.2</b>

Visual intrusion because of site camp.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
1	3	1	1.6	1	4	2.5	<b>4</b>

Work opportunity for 15 - 20 community members (**Positive Impact**)

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	5	3.3	5	5	5	<b>16.5</b>

Upgrading of access roads during invasive prospecting (**Positive Impact**).

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	4	3	4	2	3	<b>9</b>

**INVASIVE PROSPECTING (PHASE 3 & 5): OPERATIONAL PHASE**

Temporary loss of some agricultural land earmarked for invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
1	3	1	1.6	4	5	4.5	<b>7.2</b>

Visual intrusion because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
1	2	2	1.6	2	5	3.5	<b>5.6</b>

Potential negative impact on the identified CBA and/or ESA areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	3	1	2	3	2	2.5	<b>5</b>

Potential negative impact on the watercourses/wetlands and FEPA's of the study area.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	3	2	2.3	4	5	4.5	<b>10.3</b>

Increase in sediment inputs and turbidity due to invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	1	2	1.6	3	1	2	<b>3.2</b>

Increase in toxic heavy metal contaminants.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	1	2	1.6	3	1	2	<b>3.2</b>

Dust nuisance because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Noise nuisance because of invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Potential impact on sensitive/protected flora within the footprint.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low-Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	4	5	3.6	2	1	1.5	<b>5.4</b>

Potential impact on fauna within the footprint.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Infestation of the prospecting areas with invader plant species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	1	1	1.3	2	2	2	<b>2.6</b>

Potential soil contamination associated with littering and/or hydrocarbon spillages.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	3.2

Potential impact on areas/infrastructure of heritage or cultural concern.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	5	5	4.6	1	1	1	4.6

Potential impact on palaeontological aspects.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Medium-High</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
3	5	1	3	5	5	5	15

Erosion of denuded areas.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	3.2

Deterioration of access roads due to prospecting activities.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	3.2

Health and safety risk posed by invasive activities to prospecting employees.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	3.2

Presence of prospector negatively affecting safety and security of the property.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
1	4	2	2.3	2	2	2	4.6

Increased fire risk during operational phase.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
1	3	1	1.6	2	2	2	3.2



Upgrading of access roads during invasive prospecting (**Positive Impact**).

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
4	4	3	3.6	5	5	5	<b>18</b>

**INVASIVE PROSPECTING (PHASE 3 & 5): DECOMMISSIONING (MEDIUM- & LONG TERM)**

Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Potential impact associated with litter/hydrocarbon spillages left at the prospected areas.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
1	2	1	1.3	2	2	2	<b>2.6</b>

Erosion of roads, vehicle tracks and/or denuded areas.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Infestation of the reinstated areas with invader plant species.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	2	1	1.6	2	2	2	<b>3.2</b>

Return of the site camp and prospected areas to agricultural use. (**Positive Impact**)

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	5	5	3.7	5	5	5	<b>18.5</b>

**CUMULATIVE IMPACTS**

Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.

Severity	Duration	Extent	Consequence			Likelihood	Significance
				Probability	Frequency		
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	4	3	3	2	1	1.5	<b>4.5</b>

Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	4	3	3	2	1	1.5	<b>4.5</b>

Fragmentation of ecosystems affecting safe movement of faunal species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Low</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Full</b>	
2	4	1	2.6	2	1	1.5	<b>3.9</b>

Potential impact on the declaration of the Kolomela biodiversity offset area.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: Partial</b>	
2	3	5	3.3	4	5	4.5	<b>14.8</b>

Compensation of landowners during operational phase. **(Positive Impact)**

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
<b>Rating: Medium-High (+)</b>			<b>Final Project Proposal</b>			<b>Degree of Mitigation: N/A</b>	
1	4	4	3	5	5	5	<b>15</b>

**i) 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 32: Assessment of each identified potentially significant impact and risk.

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)	(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc...etc...etc.)		In which impact is anticipated. (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	If not mitigated.	(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.	If not mitigated.
Invasive Prospecting (Phase 3 & 5):  ♦ Site Establishment ♦ Operational Phase	♦ Temporary loss of agricultural land earmarked for site camp establishment.  ♦ Temporary loss of some agricultural land earmarked for invasive prospecting.	The impact may affect the agricultural operations of the property.	Site Establishment- & Operational Phase	♦ Low-Medium  ♦ Medium	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint, only to be reversed upon rehabilitation of the site camp and/or prospected areas. The impact can be controlled through progressive rehabilitation.	♦ Low-Medium  ♦ Low-Medium
Invasive Prospecting (Phase 3 & 5):  ♦ Site Establishment ♦ Operational Phase	♦ Visual intrusion because of site camp.  ♦ Visual intrusion because of invasive prospecting.	The visual impact may affect the aesthetics of the landscape.	Site Establishment- & Operational Phase	♦ Low-Medium  ♦ Medium	<u>Control:</u> Implementing proper housekeeping.	♦ Low  ♦ Low-Medium

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impacts</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential impact on sensitive/protected flora within the footprint.</li> <li>◆ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>◆ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.</li> <li>◆ Potential impact on the declaration of the Kolomela biodiversity offset area.</li> </ul>	<p>Impact may affect the biodiversity richness of the area.</p>	<p>Operational Phase</p>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Medium-High</li> </ul>	<p><u>Control:</u> Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.</p>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Low-Medium</li> <li>◆ Low</li> <li>◆ Low</li> <li>◆ Medium</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> </ul>	<p>Impact may affect water resources in a water scarce area.</p>	<p>Operational Phase</p>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Low-Medium</li> </ul>	<p><u>Control &amp; Stop:</u> Implementing the proposed mitigation measures.</p>	<ul style="list-style-type: none"> <li>◆ Medium</li> <li>◆ Low</li> <li>◆ Low</li> </ul>

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	<ul style="list-style-type: none"> <li>◆ Increase in sediment inputs and turbidity due to invasive prospecting.</li> <li>◆ Increase in toxic heavy metal contaminants.</li> </ul>					
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Dust nuisance because of invasive prospecting.</li> </ul>	<p>Increased dust generation will impact on the air quality of the receiving environment.</p>	<p>Operational Phase</p>	<ul style="list-style-type: none"> <li>◆ Medium</li> </ul>	<p><u>Control:</u> Dust suppression methods and proper housekeeping.</p>	<ul style="list-style-type: none"> <li>◆ Low</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Noise nuisance because of invasive prospecting.</li> </ul>	<p>Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.</p>	<p>Operational Phase</p>	<ul style="list-style-type: none"> <li>◆ Medium</li> </ul>	<p><u>Control:</u> Noise suppression methods and proper housekeeping.</p>	<ul style="list-style-type: none"> <li>◆ Low</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impact</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint.</li> <li>◆ Fragmentation of ecosystems affecting safe movement of faunal species.</li> </ul>	<p>This will impact on the biodiversity of the receiving environment.</p>	<p>Operational Phase</p>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Medium</li> </ul>	<p><u>Control &amp; Stop:</u> Implementing good management practices.</p>	<ul style="list-style-type: none"> <li>◆ Low</li> <li>◆ Low</li> </ul>

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase ♦ Decommissioning Phase	♦ Infestation of the prospecting area with invader plant species. ♦ Infestation of the reinstated areas with invader plant species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	♦ Low-Medium ♦ Low-Medium	<u>Control:</u> Implementing invader plant control measures.	♦ Low ♦ Low
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase ♦ Decommissioning Phase	♦ Potential soil contamination associated with littering and/or hydrocarbon spillages. ♦ Potential impact associated with litter/hydrocarbon spills left in the prospected areas.	Contamination of the footprint will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the Applicant.	Operational- and Decommissioning Phase	♦ Medium ♦ Medium	<u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan.	♦ Low ♦ Low
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Potential impact on area/infrastructure of heritage or cultural concern. ♦ Potential impact on palaeontological aspects.	This could impact the cultural, heritage and/or palaeontological legacy of the receiving environment.	Operational Phase	♦ Low ♦ High	<u>Control &amp; Stop:</u> Implementing good management practices, as well as the chance-find protocol.	♦ Low ♦ Medium-High
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Erosion of denuded areas.	Erosion of prospected areas will affect the rehabilitation requirements and	Operational- & Decommissioning Phase	♦ Low-Medium ♦ Low-Medium	<u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.	♦ Low ♦ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
◆ Decommissioning Phase	◆ Erosion of roads, vehicle tracks and/or denuded areas.	incur additional cost to the Applicant.				
Invasive Prospecting (Phase 3 & 5): ◆ Operational Phase	◆ Deterioration of the access roads due to prospecting activities.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	◆ Medium	<u>Control &amp; Remedy:</u> Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	◆ Low
Invasive Prospecting (Phase 3 & 5): ◆ Operational Phase	◆ Health and safety risk posed by invasive activities to prospecting employees.	The safety of the employees will be affected.	Operational Phase	◆ Medium	<u>Control, Stop &amp; Remedy:</u> Prospecting according to the health and safety regulations of the country and rectifying any shortcomings.	◆ Low
Invasive Prospecting (Phase 3 & 5): ◆ Operational Phase ◆ Decommissioning Phase	◆ Presence of prospector negatively affecting safety and security of the property. ◆ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.	The impact may affect the security of the area.  Unsafe boreholes/pits/trenches will pose a safety risk to the animals and humans of the area.	Operational Phase	◆ Medium-High ◆ Medium	<u>Control, Stop &amp; Remedy:</u> Implementing proper human resources practices, and progressive rehabilitation. Closing boreholes at the end of each day.	◆ Low ◆ Low
Invasive Prospecting (Phase 3 & 5): ◆ Operational Phase	◆ Increased fire risk during operational phase.	Uncontrolled fires may affect the biodiversity	Operational Phase	◆ Medium	<u>Control:</u> Implementing good housekeeping and emergency risk procedures.	◆ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
		and agricultural practices of the area.				

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

**j) 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):

Table 33: Summary of specialist reports.

LIST OF 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
<p><b>Heritage Impact Assessment</b></p> <p>For the proposed prospecting right with bulk sampling over various farms in the Hay and Kuruman Administrative Districts, Northern Cape.</p> <p><i>(See Appendix F for a full copy of the document)</i></p>	<p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>◆ Once the bulk sampling trenches/pit sites have been confirmed these areas have to be subjected to a heritage walk down, this should be conducted prior to the commencement of prospecting activities;</li> <li>◆ Drill sites must be kept as close as possible to existing roads in order to minimise the impact on the landscape;</li> <li>◆ Focal points on the landscape like rocky outcrops, hills, pans, and watercourses must be avoided as far as possible as these areas could be sensitive from a heritage point of view;</li> <li>◆ Monitoring of the Project area by the ECO during the exploration phase for heritage and palaeontology</li> </ul>	<p>This report supports all the recommendations proposed by the specialist.</p>	<p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Archaeological, Heritage and Palaeontological Aspects.</p>



LIST OF 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
	<p>chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9.</p> <p><u>Chance Find Procedure:</u></p> <p>The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during invasive activities any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP. A short summary of chance find procedures is discussed below and monitoring guidelines applicable to the Chance Find procedure is discussed below and monitoring guidelines for this procedure are provided in Section 9.5.</p> <p>This procedure applies to the developer’s permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.</p>		

LIST OF 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
	<ul style="list-style-type: none"> <li>◆ If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>◆ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.</li> <li>◆ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.</li> </ul>		
<p><b>Palaeontological Impact Assessment</b></p> <p>For the proposed prospecting right with bulk sampling over various farms in the Hay and Kuruman Administrative Districts, Northern Cape.</p>	<p><u>Recommendations:</u></p> <p>Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the overlying soils and sands of the Quaternary. There is a very small chance that fossils may occur in traps such as palaeo-pans or palaeo-springs but no such feature is visible in the satellite imagery. Nonetheless, a Fossil Chance Find</p>	<p>This report supports all the recommendations proposed by the specialist.</p>	<p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Archaeological, Heritage and Palaeontological Aspects.</p>

LIST OF 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
<p><i>(See Appendix G for a full copy of the document)</i></p>	<p>Protocol should be added to the EMP. If fossils are found by the contractor, environmental officer or other responsible person once prospecting has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.</p> <p>It is known that diatomite occurs in the prospecting areas and the age and extent of the fossils is unknown. Samples must be collected and deposited in a recognised repository, such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action has been taken.</p> <p><u>Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.</u></p> <ul style="list-style-type: none"> <li>◆ The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.</li> <li>◆ When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (trace fossils, fossils of plants, insects, bone or coalified material) should be put aside in a suitably protected place. This way the Project activities will not be interrupted. Samples of diatomite from each farm must be deposited at a recognised repository.</li> </ul>		

LIST OF 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
	<ul style="list-style-type: none"> <li>◆ Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures.</li> <li>◆ Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.</li> <li>◆ If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this Project, should visit the site to inspect the selected material and check the dumps where feasible.</li> <li>◆ Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.</li> <li>◆ If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the Project has been completed and only if there are fossils.</li> <li>◆ If no fossils are found and the excavations have finished, then no further monitoring is required.</li> </ul>		

LIST OF 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
<p><b>Wetland/Aquatic and Terrestrial Desktop Sensitivity &amp; Familiarisation</b></p> <p>Prospecting right application for targeted blocks within the Hay and Kuruman Magisterial Districts, Northern Cape Province, South Africa.</p> <p><i>(See Appendix E for a full copy of the document)</i></p>	<p><b><u>Planning Recommendations for Terrestrial Ecosystems:</u></b></p> <p>Terrestrial ecosystems were categorized into sensitivity classes following the guidelines in section 3.1.5, guiding the placement of prospecting pits. Consequently, areas categorized as 'High' and 'Moderate' sensitivity in terrestrial ecosystems should once groundtruthed be avoided, while targeted prospecting activities are recommended within areas classified as 'Low' sensitivity.</p> <p><b><u>Planning Recommendations for Freshwater Ecosystems:</u></b></p> <p>Unlike the terrestrial ecosystem sensitivity map, which has several sensitivity classes to inform the siting of prospecting pits, freshwater ecosystems should preferably be avoided irrespective of their sensitivity and ecosystem threat status. As such, no prospecting may occur in any freshwater ecosystems considered high-moderate sensitivity prior to a second phase investigation and receipt of a water use authorization <i>(if applicable)</i>. Watercourses such as rivers, wetland and drainage lines collect, retain, and convey surface water in the landscape and are sensitive to erosion and water quality impacts due to their location in the landscape.</p>	<p>The study proposes initial recommendations of the specialist based on desktop findings. The recommendation that a second phase investigation be conducted (by ecologist &amp; hydrologist) once the invasive prospecting programme (sampling pattern) is available to refine the identified sensitivities is supported and incorporated in the EIAR &amp; EMPR. The findings of the second phase investigation/s must be approved, with the sampling plan, by the DMRE prior to commencement.</p>	<p>Part A(1)(g)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna.</p> <p>Part A(1)(g)(viii) The possible mitigation measures that could be applied and the level of risk – Hydrology.</p>

LIST OF 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
	<p>According to the buffer model, the key risk associated with prospecting are sediment and turbidity impacts and water quality impacts from heavy metals. Importantly, buffers are only suited to mitigate against certain impacts. These have been displayed in bold text in Table 2. Buffers are capable of mitigating two of the key impacts identified by the model. Based on the tool outputs for the range of ecosystems and site variables tested, an aquatic impact buffer of 40m is recommended. In addition, to the freshwater ecosystem themselves, aquatic buffers should be considered 'Moderate' sensitivity and ideally avoided too. The buffers will aid in the protection of sensitive freshwater ecosystems and mitigate against key risk identify by the buffer model.</p>		

## **k) Environmental impact statement**

### **i) Summary of the key findings of the environmental impact assessment.**

The key findings of the environmental impact assessment entail the following:

#### **PROJECT PROPOSAL**

The Applicant applies for a PR with bulk sampling for diatomite ( $\text{SiO}_2 \cdot n\text{H}_2\text{O}$ ) / diatomaceous earth / kieselguhr over 16 162.1945 ha that extends over the properties listed in Table 1. Should the PR be issued, the proposed project will comprise of six phases that can be divided into non-invasive- and invasive prospecting (Tables 4 & 5 ). The targeting of all drilling/sampling activities will be dependent on the results obtained during the preceding phases of prospecting.

The prospecting activities do not require the use of permanent equipment/infrastructure. A central site camp will be established at an area agreed to by the landowner where mobile containers will be used as office space and for storage. Chemical ablutions will be established, and the site camp will be fenced to control access. All chemicals/hydrocarbons will be kept in the storage containers or bunded areas with impermeable surfaces.

Rehabilitation will include continuous reinstatement of prospected areas, and the management of invasive plant species and/or erosion.

Refer to Table 9 for a summary of the Final Project Proposal (regarding alternatives that were considered).

#### **LAND USE**

The land capability of Bermolli No 583/5, Engelsdraai No 221/RE, Witdraai No 204/1, Vaalwater No 84/1 and RE, Farm No 570 (Zaai Plaats) (earmarked for invasive prospecting) range between Low and Medium. The farms are mainly used for grazing with Bermolli No 583/5 earmarked as a potential biodiversity offset area of Kolomela. The Applicant will engage the landowners of the earmarked properties regarding co-existence agreements prior to commencement of invasive prospecting, and no site camp and/or drill site will be sited on sensitive areas. Once rehabilitated, all sampling sites will once again be available for agricultural use.

## **TOPOGRAPHY**

The invasive prospecting activities will temporarily impact the topography of the areas during the operational phase. Thereafter all boreholes will be capped, and the trenches/bulk sampling sites will be backfilled. The potential for the prospecting activities to negatively impact the topography of the study area is of low significance. Should the mitigation measures proposed in this report be implemented during the decommissioning phase, the activity will have no residual impact on the topography upon closure of the PR.

## **VISUAL CHARACTERISTICS**

The area of disturbance is expected to be  $\pm 200$  m<sup>2</sup> per drill site and between 2 500 m<sup>2</sup> (0.25 ha) and 10 000 m<sup>2</sup> (1 ha) per bulk sampling area that will continuously be rehabilitated as prospecting progresses. The prospecting activities does not require the alteration of vast vegetated areas, and no permanent infrastructure will be erected. Considering this, the potential impact of the prospecting operation on the visual characteristics of the receiving environment is deemed to be of low-medium significance once the mitigation measures are implemented.

## **AIR QUALITY AND NOISE AMBIANCE**

The prospecting activity does not trigger an application in terms of the NEM:AQA, 2004. Emissions to be generated will mainly consist of dust due to drilling, sampling and driving on site. Due to the small scale of the operation (per sample site) the noise levels to be generated will be low and will mainly stem from the operation of the prospecting equipment and vehicles traveling on the roads. The dust emissions and/or noise levels that may arise from the proposed prospecting activities, if mitigated by the Applicant, will therefore have a low impact on the receiving environment.

## **GEOLOGY**

The remote sensing study suggests that the following farms hold the greatest kieselguhr potential and invasive prospecting will target these farms:

- ◆ Witdraai No 204, 1
- ◆ Engelsdraai No 221/RE;
- ◆ Bermolli No 583/5



- ◆ Vaalwater No 84/1 and RE; and
- ◆ Farm No 570 (Zaai Plaats).

### **HYDROLOGY**

The initial sensitivity layers created for freshwater ecosystems (Figure 79 – 84) are crucial for planning purposes. The hydrologists recommended that the exact location of the freshwater ecosystems be groundtruthed through a second phase investigation. Once the invasive prospecting programme (sampling pattern) is available the hydrologist will need to revisit the target areas to refine the identified sensitivities. The findings of the second phase investigation must be approved, with the sampling plan, by the DMRE prior to commencement.

Upon closure the sampled areas must be backfilled and rehabilitated to an acceptable state to be determined by the hydrologist.

### **TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUND COVER AND FAUNA**

The initial sensitivity layers created for terrestrial ecosystems (Figure 79 – 84) are crucial for planning purposes. It is imperative to avoid sensitive areas classified as 'High' sensitivity (once groundtruthed), to protect the environment and minimize project risks. Furthermore, it's anticipated that additional fieldwork will be necessary (by the ecologist) at selected prospecting sites to refine the identified sensitivities. The findings of the second phase investigation must be approved, with the sampling plan, by the DMRE prior to commencement.

Should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.

### **CULTURAL AND HERITAGE ENVIRONMENT**

The desktop study provided an overview of potential heritage resources that could be affected by the proposed activity. The impact to heritage resources is expected to be low provided that the recommendations of the specialists are adhered to, and SAHRA approval is obtained. Once the sampling sites have been confirmed these areas must be subjected to a heritage walk down, prior to

the commencement of invasive prospecting activities. Burial sites, memorials and graves must be avoided with a 30 m buffer zone.

### **PALAEONTOLOGY**

Based on the nature of the project, surface activities may impact upon the fossil heritage if preserved in the development footprint. The aeolian sands do not preserve fossils but might cover features such as palaeo-pans or palaeo-springs that trap or form fossils but no such feature is visible in the satellite imagery. Since there is an extremely high chance that diatoms will be found and destroyed, and a small chance that trapped or transported fossils occur in the sands and may be disturbed a Fossil Chance Find Protocol has been proposed by the specialist. Taking account of the defined criteria, the potential impact to fossil heritage resources is extremely high. Therefore, samples must be collected and deposited in a recognised repository, such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action was taken.

### **SITE SPECIFIC INFRASTRUCTURE**

The prospecting method is such that it can be moved away from build structures and existing infrastructure. Jeep-tracks to some of the areas will be developed in agreement with the landowner, and it is not expected that the proposed activity will impact on or necessitate the removal of existing infrastructure.

No prospecting will be done on Devon No 277 and no invasive prospecting on Botha No 313, safeguarding the infrastructure and current land use of these farms (including the railway line on Devon No 277/1) against disturbance.

#### **ii) Finale Site Map**

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

As mentioned earlier, the invasive prospecting plan (showing drilling and trenching locations) will be determined based on the outcome of phases 1, 2, 4, and 6. Presently it is expected that non-invasive prospecting will be conducted on all the farms applied for, and that invasive prospecting will be conducted on the following farms:

- ◆ Bermolli No 583/5

- ◆ Engelsdraai No 221/RE;
- ◆ Witdraai No 204, 1
- ◆ Vaalwater No 84/1 and RE; and
- ◆ Farm No 570 (Zaai Plaats).

See Appendix D1 – D5 for maps showing the areas where invasive prospecting is expected. These maps will be updated once the sampling plan is available and will be submitted to the DMRE for approval when available.

**iii) Summary of the positive and negative implications and risks of the proposed activity and identified alternatives.**

**POSITIVE IMPACTS ASSOCIATED WITH THE PROJECT PROPOSAL**

- ◆ If approved the prospecting activities will identify the kieselguhr sources within the earmarked areas.
- ◆ Work opportunities for 15 - 20 community members including associated growth development opportunities.
- ◆ Compensation of landowners during operational phase.
- ◆ Upgrading of access roads during invasive prospecting.
- ◆ Return of the site camp and prospected areas to agricultural use.
- ◆ Feasible mineral resources could lead to economic development of the earmarked areas

**NEGATIVE IMPACTS ASSOCIATED WITH THE PROJECT PROPOSAL**

The following table shows the potential negative impacts associated with the proposed activity that were deemed to have a Low-Medium or higher significance/risk:

Table 34: List of potential impacts deemed to have a low-medium or higher significance/risk.

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
<ul style="list-style-type: none"> <li>◆ Site establishment.</li> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Temporary loss of agricultural land earmarked for site camp establishment.</li> <li>◆ Temporary loss of some agricultural land earmarked for invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Low-Medium</li> </ul>

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
<ul style="list-style-type: none"> <li>◆ Site establishment.</li> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Visual intrusion because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> <li>◆ Cumulative impacts.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential impact on sensitive/protected flora within the footprint.</li> <li>◆ Potential impact on the declaration of the Kolomela biodiversity offset area</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> <li>◆ Medium</li> <li>◆ Medium-High</li> </ul>	<ul style="list-style-type: none"> <li>◆ Low-Medium</li> <li>◆ Low-Medium</li> <li>◆ Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium</li> </ul>
<ul style="list-style-type: none"> <li>◆ Operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential impact on palaeontological aspects.</li> </ul>	<ul style="list-style-type: none"> <li>◆ High</li> </ul>	<ul style="list-style-type: none"> <li>◆ Medium-High</li> </ul>



**I) 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.

Table 35: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>TOPOGRAPHY</b></p> <p>Landscaping of Prospecting Area</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Implement progressive rehabilitation as prescribed in this report throughout the operational- and decommissioning phases of the project.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Effectively restoring the prospected areas to prevent residual impacts and allow for the proposed agricultural end-use.</li> </ul>
<p><b>VISUAL CHARACTERISTICS</b></p> <p>Mitigating the visual impact.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Contain prospecting to the approved boundaries.</li> <li>◆ Ensure the camp site and every sampling site has a neat appearance and is always kept in good condition.</li> <li>◆ Limit vegetation removal and avoid the removal of large trees (&gt;20 cm stem) or vegetation of significance (identified by ECO).</li> <li>◆ Store prospecting equipment neatly in a dedicated area when not in use.</li> <li>◆ Implement concurrent rehabilitation as prospecting progress to limit the visual impact on the aesthetic value of the area.</li> <li>◆ Only strip topsoil immediately prior to the use of a specific area.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Minimise the impact of the proposed project on the visual characteristics of the receiving environment during the operational phase, and ensure no residual impact remains after closure.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<ul style="list-style-type: none"> <li>◆ Rehabilitate all sites to keep the visual impact on the aesthetic value of the area to a minimum.</li> </ul>	
<p><b>AIR QUALITY AND NOISE AMBIANCE</b></p> <p>Dust Mitigation</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Control the liberation of dust into the surrounding environment using; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).</li> <li>◆ Ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>◆ Equip the crusher plant with water sprayers to alleviate dust and remove fines buildup at least weekly from and around the conveyors.</li> <li>◆ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Minimise areas devoid of vegetation.</li> <li>◆ Consider weather conditions upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.</li> <li>◆ Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).</li> <li>◆ Implement best practice measures during the stripping of topsoil to minimize potential dust impacts.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Dust prevention measures are applied to minimise the generation of dust.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>AIR QUALITY AND NOISE AMBIANCE</b></p> <p>Noise mitigation.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> <li>◆ No loud music may be permitted at the site camp and/or prospecting areas.</li> <li>◆ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996.</li> <li>◆ Implement best practice measures to minimise potential noise impacts.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.</li> </ul>
<p><b>GEOLOGY AND SOIL</b></p> <p>Topsoil Handling</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Strip and stockpile the upper 300 mm of the soil before site camp establishment and/or prospecting.</li> <li>◆ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process.</li> <li>◆ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan prospecting in such a way that topsoil is stockpiled for the minimum possible time.</li> <li>◆ Place the topsoil heaps on a levelled area within the prospecting footprint. Do not stockpile topsoil in undisturbed areas.</li> <li>◆ Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establish plants (weeds or a cover crop) on the stockpiles to prevent erosion.</li> <li>◆ Ensure that topsoil heaps do not exceed 2 m.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Adequate fertile topsoil is available to rehabilitate the prospected areas.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<ul style="list-style-type: none"> <li>◆ Keep temporary topsoil stockpiles free of invasive plant species.</li> <li>◆ Divert storm- and runoff water around the stockpile area to prevent erosion.</li> <li>◆ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site.</li> <li>◆ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season.</li> <li>◆ Plant a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum production. Rehabilitation extends until the first cover crop is well established.</li> <li>◆ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.</li> </ul>	
<p><b>HYDROLOGY</b></p> <p>Mitigating the potential impact on watercourse/wetlands and FEPA's.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Arrange a second phase investigation by a qualified hydrologist prior to prospecting of any freshwater ecosystems with a high-moderate sensitivity.</li> <li>◆ Submit the findings of the hydrologist, with the drill plan, to the DMRE for approval prior to commencement.</li> <li>◆ Do not allow any activities without the necessary authorisation from the DWS, within a horizontal distance of 100 m from any watercourse or estuary</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prospecting activities have no impact on the watercourses/wetlands and/or FEPA's of the area.</li> </ul>





MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<p>or within a 500 m radius from a delineated boundary of any wetland or pan.</p> <ul style="list-style-type: none"> <li>◆ Do not establish any site camp in or within 100 m of a watercourse.</li> <li>◆ If a WUA is applicable, adhere to the conditions of the use authorisation.</li> <li>◆ Only abstract water at a registered water source in accordance with the requirements of the authorisation. Use water tally sheets to monitor water use and obtain baseline water quality results for each source and filed for auditing purposes.</li> <li>◆ Upon closure, remove all prospecting related equipment/machinery from the footprint and reinstate the sampled areas to a state determined and approved by the hydrologist.</li> </ul>	
<p><b>HYDROLOGY</b></p> <p>Erosion Mitigation / Storm Water Control.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Divert storm water around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion.</li> <li>◆ Control drainage to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points.</li> <li>◆ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable).</li> <li>◆ Collect dirty water and contain it in a system separate from the clean water system.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Impact to the environment caused by storm water discharge is avoided and erosion is managed.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<ul style="list-style-type: none"> <li>◆ Prevent dirty water from spilling or seeping into clean water systems.</li> </ul>	
<p><b>TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUNDCOVER AND FAUNA</b></p> <p>Impacts on floral species, and fragmentation of vegetation communities within the CBA and ESA ecosystems.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Arrange additional fieldwork by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants.</li> <li>◆ Submit the findings of the ecologist, with the final sampling programme, to the DMRE for approval prior to commencement.</li> <li>◆ Clearly demarcate the prospecting boundaries and contain all operations to the approved area.</li> <li>◆ Declare the area outside the boundaries a no-go area and educate all employees accordingly.</li> <li>◆ Implement an invasive plant species management plan to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.</li> <li>◆ Should an application for the removal of protected plant species, and/or indigenous plants (1) on large-scale, (2) or on small scale within 100 meters of a river or a public road, be applicable: submit a thorough walk-through report to the relevant competent authorities (DAERL) prior to commencing any earthworks. Ensure that this report comprehensively assess, and list species based on their protection statuses according to the NCNCA, NEMBA: ToPS, and the NFA. It must also include the IUCN Red List status, endemism, and estimate the quantities of each impacted protected species. If</li> </ul>	<ul style="list-style-type: none"> <li>◆ Vegetation clearing is restricted to the authorised development footprint.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<p>possible, conduct the walk-through assessment be during the appropriate season for the area to ensure accurate observation of species presence and habitat conditions, thereby maximizing the effectiveness of the assessment in capturing the full ecological picture.</p> <ul style="list-style-type: none"> <li>◆ Should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.</li> <li>◆ Establish the site camps of Bermolli No 583/5 and Engelsdraai No 221/RE on previously disturbed/altered areas.</li> <li>◆ Restrict bulk sampling to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s where the ecologist deems it necessary.</li> </ul>	
<p><b>TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUNDCOVER, AND FAUNA</b></p> <p>Management of Invasive Plant Species.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Implement an invasive plant species management plan at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA, 2004. Do weed/alien removal on an ongoing basis throughout the life of the prospecting activities.</li> <li>◆ Keep all stockpiles free of invasive plant species.</li> <li>◆ Control declared invader or exotic species on the rehabilitated areas.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prospecting areas are kept free of invasive plant species.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>TERRESTRIAL BIODIVERSITY, CONSERVATION AREAS, GROUNDCOVER, AND FAUNA</b></p> <p>Impact on faunal species, and fragmentation of ecosystems affecting safe movement of species.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Ensure no fauna is caught, killed, harmed, sold, or played with.</li> <li>◆ Instruct workers to report any animals that may be trapped in the working area.</li> <li>◆ Ensure no snares are set or nests raided for eggs or young.</li> <li>◆ No pets allowed on site.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Disturbance to fauna is minimised.</li> </ul>
<p><b>CULTURE AND HERITAGE ENVIRONMENT</b></p> <p>Archaeological, Heritage and Palaeontological Aspects.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Arrange a heritage walk down once the sampling sites have been confirmed prior to the commencement of invasive prospecting activities.</li> <li>◆ Keep sampling sites as close as possible to existing roads to minimise the impact on the landscape.</li> <li>◆ Avoid focal points on the landscape like rocky outcrops, caves, or pans as far as possible as these areas could be sensitive from a heritage point of view.</li> <li>◆ Avoid burial sites, memorials, and graves with a 30 m buffer zone.</li> <li>◆ Conduct further palaeontological studies once the impact areas are confirmed.</li> <li>◆ Collect and deposit samples of diatomite from each farm at a recognised repository such as the McGregor Museum in Kimberley, or a</li> </ul>	<ul style="list-style-type: none"> <li>◆ Impact to cultural/heritage resources is avoided or at least minimised.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<p>palaeontological research institute, and notify SAHRA of what action was taken.</p> <ul style="list-style-type: none"> <li>◆ Arrange monitoring of the project area by the ECO during the exploration phase for heritage chance finds, and if chance finds are encountered to implement the Chance Find Procedure for the project.</li> <li>▶ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>▶ It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.</li> <li>▶ The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA.</li> <li>▶ Work may only continue once the go-ahead was issued by SAHRA.</li> </ul>	



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>SOCIO-ECONOMIC ENVIRONMENT / LAND USE</b></p> <p>Loss of agricultural land for duration of invasive prospecting.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prospecting has the least possible impact on the operation of the property.</li> </ul>
<p><b>EXISTING INFRASTRUCTURE</b></p> <p>Access Road Mitigation</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Divert storm water around the access road to prevent erosion.</li> <li>◆ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas.</li> <li>◆ Repair rutting and erosion of the access road caused as a direct result of the prospecting activities.</li> <li>◆ Prevent overloading of the trucks, and file proof of load weights for auditing purposes.</li> <li>◆ Prior to commencement, sign an agreement confirming responsibility towards the movement of employees.</li> <li>◆ Repair/reinstate damages to fences (by prospecting employees). Compensate losses, due to gates left open by prospecting employees.</li> <li>◆ Enforce a speed limit of not more than 40 km/h on internal roads and 60 km/h on public roads for the duration of the project.</li> </ul>	<ul style="list-style-type: none"> <li>◆ The access road remains accessible to the landowner during the operational phase, and upon closure, the road is returned in a better, or at least the same state as received by the right holder.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>GENERAL</b></p> <p>Waste management</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Ensure vehicle maintenance, repairs and services only take place at the workshop and service area in the site camp. If emergency repairs are needed on equipment not able to move to the workshop, use drip trays. Dispose all waste products removed from the emergency service area (same day) in a closed container/bin at the workshop to ensure proper disposal.</li> <li>◆ Provide ablution facilities to all employees. Place the toilet outside the 1:100 year floodline of all watercourses.</li> <li>◆ Ensure that the ablution facilities do not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage. Address any pollution problems arising from the above immediately.</li> <li>◆ Equip the diesel bowser (if used on site) with a drip tray. Use the drip trays during every refuelling event. Ensure that the nozzle of the bowser rest in a sleeve to prevent dripping after refuelling.</li> <li>◆ Clean drip trays after each use. Do not use dirty drip trays on site.</li> <li>◆ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove it from the site, either for resale or for appropriate disposal at a recognized facility.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Wastes are appropriately handled and safely disposed of at a recognised waste facility.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<ul style="list-style-type: none"> <li>◆ Should spillages occur, such as oil or diesel leaking from a burst pipe, collect the contaminated soil within the first hour of occurrence in a suitable receptacle and removed it to the hazardous waste storage area of the workshop, either for resale or for appropriate disposal at a recognized facility. File proof.</li> <li>◆ Contain general waste in marked, sealable, refuse bins placed at a designated area, to be removed when filled to a registered general waste landfill site.</li> <li>◆ Do not bury or burn waste on the site.</li> <li>◆ Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities.</li> </ul>	
<p><b>GENERAL</b> Management of Health and Safety Risks.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.  Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Ensure there is adequate ablution facilities and water for human consumption available on site.</li> <li>◆ Provide workers with the correct personal protection equipment (PPE) as required by law.</li> <li>◆ Ensure all operations comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> <li>◆ Daily cover drill-holes and barricade pits/trenches even if prospecting will continue the following day. Upon closure, seal and cap all boreholes and backfill the pits/trenches as prescribed in the rehabilitation plan.</li> </ul>	<ul style="list-style-type: none"> <li>◆ The prospecting activities do not pose a health and safety risk to employees, land users and/or animals.</li> </ul>





MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
<p><b>GENERAL</b></p> <p>Management of Safety Risks to Landowners.</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Screen employees to be appointed prior to inception of contract.</li> <li>◆ Do not allow employees to reside within the prospecting area.</li> <li>◆ Educate prospecting employees to report suspicious looking person/s and/or matters to site management.</li> <li>◆ Maintain direct communication between the prospector and the landowners for the duration of the site establishment-, operational, and decommissioning phases.</li> <li>◆ Do not enter negotiations with farm employees.</li> <li>◆ Restrict prospecting to normal business hours unless otherwise authorised by the landowner.</li> <li>◆ Ban alcohol and/or prohibited drugs from site.</li> <li>◆ Maintain attendance registers, and pre-register all prospecting vehicles/machinery with the landowner/security.</li> <li>◆ Do not allow firearms on site.</li> </ul>	<ul style="list-style-type: none"> <li>◆ The prospecting activities do not cause a safety risk to landowners.</li> </ul>
<p><b>GENERAL</b></p> <p>Fire Risk Management</p>	<p>Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.</p> <p>Compliance to be monitored by the Environmental Control Officer.</p>	<ul style="list-style-type: none"> <li>◆ Do not permit open fires on any of the sampling sites. Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas at the site camp,</li> <li>◆ Prevent employees from setting fires randomly outside designated areas.</li> <li>◆ Do not store fuel or chemicals under trees.</li> <li>◆ Do not store gas in the same storage area as liquid fuel.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prospecting activities do not result in uncontrolled fires.</li> </ul>



MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		<ul style="list-style-type: none"> <li>◆ Designate smoking to specific areas (&gt;3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds.</li> <li>◆ Ensure Work Site and the contractor’s camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site.</li> <li>◆ Implement specific fire safety precautions during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any “HOT WORK” is undertaken e.g. welding, grinding, gas cutting etc,</li> <li>◆ Report any fires noted on site to the responsible SHE rep and/or fire officer.</li> <li>◆ Implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases.</li> <li>◆ In the event of large fires ensure that all personnel assemble at a safe assembly point to be transported from site. Inform the fire department or local fire watch of the fire to ensure that the fire is brought under control as soon as possible.</li> </ul>	

**m) Final proposed alternatives.**

(Provide an explanation for the final layout of the infrastructure and activities on the overall site as shown on the final site map together with the reasons why they are the final proposed alternatives, which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment)

The Final Project Proposal is summarised in Table 9 and entails:

- b) The invasive prospecting of the target areas on the following properties if mineralization is confirmed (during non-invasive prospecting):
- ◆ Portion 5 of Bermolli No 583 (unless declared a nature reserve prior to the granting of the PR);
  - ◆ Remaining Extent of Engelsdraai No 221;
  - ◆ Portion 1 of Witdraai No 204;
  - ◆ Portion 1 and Remaining Extent of Vaalwater No 84; and
  - ◆ Farm No 570 (Zaai Plaats).
- c) The prospecting of the study area with bulk sampling.
- d) The following regarding design and layout of the project:
- ◆ *Devon No 277* – no prospecting;
  - ◆ *Botha No 313* – no invasive prospecting;
  - ◆ *Bermolli No 583/4* – no invasive prospecting;
  - ◆ *Bermolli No 583/5* – invasive prospecting subject to the management and mitigation measures proposed in this document. However, if declared a nature reserve before the granting of the PR this farm will be omitted from the PR programme;
  - ◆ *Engelsdraai No 221/1* – no invasive prospecting;
  - ◆ *Engelsdraai No 221/RE* – invasive prospecting subject to the management and mitigation measures proposed in this document;
  - ◆ *Witdraai No 204/RE* – no invasive prospecting;
  - ◆ *Witdraai No 204/1* – invasive prospecting subject to the management and mitigation measures proposed in this document;
  - ◆ *Vaalwater No 84/1 & RE* – invasive prospecting subject to the management and mitigation measures proposed in this document;
  - ◆ *Vaalwater No 84/2* – no invasive prospecting;
  - ◆ *Farm No 570 (Zaai Plaats)* – invasive prospecting subject to the management and mitigation measures proposed in this document.

- e) The use of specialised coring equipment, geophysical equipment, and the digging of bulk sampling trenches/pits by excavator. Sample material will be moved with FEL and screened at a crusher whereafter it will be removed from site with trucks.
- f) The siting of the site camp and/or jeep-track routes in accordance with the landowner agreement and outside sensitive areas. The project proposal also considers mitigation measures such as the management of dust, noise, workhours, safety measures etc.
- g) The no-go option is applicable to Devon No 277 and Portion 5 of Bermolli No 583 should the farm be promulgated as nature reserve prior to the granting of the PR. The following properties will also be omitted from the invasive prospecting programme:
  - ◆ Portion 1 and Remaining Extent of Botha No 313;
  - ◆ Portion 4 of Bermolli No 583;
  - ◆ Portion 1 of Engelsdraai No 221;
  - ◆ Remaining Extent of Witdraai No 204;
  - ◆ Portion 2 of Vaalwater No 84

Also refer to *Part A(1)(g) Motivation for the preferred development footprint within the approved site including a full description of the process followed to reach the proposed development footprint within the approved site*; as well as *Part A(1)(g)(i) Details of the development footprint alternatives considered* for a discussion regarding the matters that were considered when determining the preferred development option for this project.

**n) Aspects for inclusion as conditions of Authorization.**

Any aspects which have not formed part of the EMPR that must be made conditions of the Environmental Authorization

The management objectives listed in this report under *Part A(1)(L) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* above should be considered for inclusion in the environmental authorisation.

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

(Which relate to the assessment and mitigation measures proposed)

The author acknowledges that the review is not exhaustive as not all the study areas were accessible and subjected to a field survey at this stage in the environmental process. It is recommended that this will be done when the actual exploration localities are fixed. It is assumed that information obtained for the wider area is applicable to the study area. It is possible that new information could come to light in future, which might change the results of this Impact Assessment.

The maps developed and presented are preliminary in nature and of moderate confidence overall. It is based on rapid field verification efforts and will need to be refined and updated when prospecting sites are selected. The maps should be used for planning purposes. Higher resolution and more focused delineation will need to be undertaken at selected pits sites.

**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.**

Should the mitigation measures and monitoring programmes proposed in this document be implemented on site, no fatal flaws could be identified that were deemed as severe as to prevent the activity continuing.

**ii) Conditions that must be included in the authorization.**

**(1) Specific conditions to be included into the compilation and approval of EMPR**

The management objectives listed in this report under *Part A(1)(l) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* must be included into the compilation and approval of the EMPR.

**(2) Rehabilitation requirements**

The rehabilitation- and closure objectives proposed in *Part B(d)(i) Determination of Closure Objectives* must be included in the authorisation.

Once the prospecting area was rehabilitated the PR Holder is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of*

*the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report". The Closure Application will also be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).*

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

The Applicant requests the Environmental Authorisation to be valid for the duration of the prospecting right.

**r) Undertaking**

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

The undertaking required to meet the requirements of this section is provided at the end of the EMPR and is applicable to both the Environmental Impact Assessment Report and the Environmental Management Programme report.

**s) Financial Provision**

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

**i) Explain how the aforesaid amount was derived.**

The average annual amount required to manage and rehabilitate the environment was estimated to be ±R 77 000.00 as presented in the prospecting works programme. The table below shows the proposed cost regarding site rehabilitation of the applicable phases of invasive prospecting.

*Table 36: Proposed annual rehabilitation cost.*

PHASE	YEAR	COST
Phase 3 (12-36 months)	2 & 3	R 134 000.00
Phase 5 (36-54 months)	4 & 5	R 174 000.00
Average annual rehabilitation cost		R 77 000.00

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

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

The funding for the proposed prospecting operation will be furnished by K2022641005 (SOUTH AFRICA) (Pty) Ltd underwritten by Scipion Capital. The Applicant secured sufficient funds that can be leveraged to fund the prospecting operation (as presented in the PWP).

**t) Deviations from the approved scoping report and plan of study.**

**i) Deviations from the methodology used in determining the significance of potential environmental impacts and risks.**

(Provide a list of activities in respect of which the approved scoping report was deviated from, the reference in this report identifying where the deviation was made, and a brief description of the extent of the deviation).

No deviation from the methodology used in determining the significance of potential environmental impacts and risks were deemed necessary. The methodology described in the Scoping Report was also used in the Environmental Impact Assessment Report.

**ii) Motivation for the deviation.**

Not applicable.

**u) Other 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 Appendix 219.1 and confirm that the applicable mitigation is reflected in 2.5.3, 2.11.6 and 2.12 herein).

**Socio-Economic Implications of the Project**

As mentioned earlier, the project proposes the employment of 15 to 20 people from the nearby communities. The intended positions will mostly have lenient prerequisites that will be accessible to unskilled/semi-skilled candidates. Apart from remuneration, workplace training will better the employee's skillset. If the multiplier effect of one employee supporting an average of four (4) people is applied, this project (when fully operational) could improve the livelihood of ±80 community members.

The Applicant will not enter negotiations with the employees of the earmarked farms and therefore the commencement of the project will generate additional positions in areas where the unemployment rate ranges between 28.2% (SLM) to 40% (JMLM). A PR could be valid for a maximum period of five years. Considering this, although the employment opportunities will be temporarily in nature, the takeaway skillset to be obtained during the service period will equip employees permanently.

This project entails the prospecting of specific target areas on the earmarked farms. Considering this, the project do not oppose the current land uses of the properties, but rather supplement it by diversifying the land use that directly impacts the revenue yield as the landowners will be compensated for the use of the land.

Further thereto, should prospecting yield feasible results it may grow the kieselguhr market that should then be capable of generating long term employment and local economic development opportunities.

In summary, the following potential impacts were identified that may impact on socio-economic conditions of directly affected persons:

◆ **Temporary loss of agricultural land earmarked for invasive prospecting and/or negative impact on the present land use of the properties** (*Low-Medium Significance after Mitigation*)

According to the DFFE screening report the land capability of the farms Bermolli No 583/5, Engelsdraai No 221/RE, Witdraai No 204/1, Vaalwater No 84/1 and RE, Farm No 570 (Zaai Plaats) (earmarked for invasive prospecting) range between Low and Medium. The farms are mainly used for grazing with Bermolli No 583/5 earmarked as a potential biodiversity off-set area of Kolomela. As mentioned earlier, the Applicant will engage the landowners of the earmarked properties regarding co-existence agreements during the planning stage prior to the commencement of invasive prospecting. No site camp and/or invasive prospecting will be sited on sensitive areas and should Bermolli No 583/5 be a declared nature reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.



◆ **Visual intrusion associated with the prospecting activities**

*(Low-Medium Significance after Mitigation)*

Most of the study area is scarcely populated, and as mentioned earlier, the area of disturbance is expected to be  $\pm 200$  m<sup>2</sup> per drill site and between 2 500 m<sup>2</sup> (0.25 ha) and 10 000 m<sup>2</sup> (1 ha) per bulk sampling area that will continuously be rehabilitated as prospecting progresses. The prospecting activities does not require the alteration of vast vegetated areas, and no permanent infrastructure will be erected. Considering this, the potential impact of the prospecting operation on the visual characteristics of the receiving environment is deemed to be of low-medium significance once the mitigation measures are implemented.

◆ **Dust nuisance caused because of the prospecting activities**

*(Low Significance after Mitigation)*

The prospecting activity will contribute the emissions of the prospecting equipment, vehicles and the crusher plant for the duration of the invasive operational phase. Dust generated as result of the prospecting will also stem from the movement of these vehicles. Should the Applicant implement the mitigation measures proposed in this document and the EMPR the impact on the air quality of the surrounding environment is deemed to be of low significance and compatible with the current land use.

◆ **Noise nuisance because of prospecting activities**

*(Low Significance after Mitigation)*

The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the vehicles/machinery already operating in the area. The distance of the prospecting area from residential infrastructure further lessens the potential noise impact.

◆ **Prospecting affecting watercourses or aggravating the scarcity of water**

*(Medium Significance after Mitigation)*

The drilling operation does not require water, while the bulk sampling activities will necessitate  $\pm 10\,000$  l/day that will be bought in a controlled manner from legal sources. Should the Applicant adhere to the mitigation measures and recommendations of the specialists incorporated into this document the potential impact on the water resources of the footprint is of medium concern.

◆ **Access control and management of existing infrastructure**

*(Low Significance after Mitigation)*

The prospecting campaign will be headed by a drill contractor. Site management will always be responsible for the movement of their employees. No prospecting personnel will be allowed to wander outside the approved footprint. The contractor will sign an agreement to this effect upon appointment and will be held responsible for damages to fences or gates left ajar by prospecting personnel.

◆ **Employment opportunities and socio-economic impact**

*(Medium-High Significant Positive Impact)*

The operation will contribute to the local economy in the area, both directly and through the multiplier effect that its continued presence will create. Equipment and supplies will be purchased locally, and wages are spent at local businesses, generating both jobs and income in the area. Although the employees will not reside on site, they will be from the surrounding community.

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

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 219.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

The specialists did not identify the presence of national estate as referred to in Section 3(2) of the NHRA, 1999 within the earmarked footprint of the study area. However, samples of the diatoms (diatomaceous earth) must be collected and deposited in a recognised repository, such as the McGregor

Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action has been taken.

**v) Other matter required in terms of section 24(4)(a) and (b) of the Act.**

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

The alternatives associated with the proposed activity, investigated during the impact assessment process, were done at the hand of information obtained during the site investigation, public participation process, specialist studies as well as desktop studies conducted of the study area. Refer to *Part A(1)(m) Final Proposed 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 details and expertise of Ms C Fouché of Greenmined Environmental (Pty) Ltd that acts as EAP on this project has been included in *Part A(1)(a) Details of Greenmined Environmental (Pty) Ltd* as well as Appendix M as required.

#### 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 aspects of the activity that are covered by the draft environmental management programme was described and included in *Part A(1)(h) 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.*

#### c) Composite Map

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

As mentioned under *Part A(1)(k)(ii) Final Site Map* maps showing the areas where invasive prospecting is expected is attached as Appendix D1 – D5. These maps will be updated once the drill plan is available and will be submitted to the DMRE for approval when available.

#### 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 in 2.4 herein)

The primary objective, once invasive prospecting concludes, is to obtain a closure certificate in as short a time as possible whilst still complying with the requirements of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) [MPRDA]. To realise this, the following main objectives must be achieved:

- ◆ Remove all infrastructure and waste from the site camp as per the requirements of this EMPR and of the Provincial Department of Minerals and Resources and Energy.
- ◆ Make all boreholes safe.
- ◆ Backfill all trenches and pits.
- ◆ Use the topsoil effectively to promote the re-establishment of vegetation.
- ◆ Ensure that all rehabilitated areas are stable and self-sustaining in terms of vegetation cover.
- ◆ Eradicate all weeds/invaser plant species by intensive management of the prospecting area.

As mentioned earlier, rehabilitation will include activities that can be divided into medium- and long term categories. In the medium term, rehabilitation will entail the continuous reinstatement of prospected areas, and the management of invasive plant species and/or erosion. In the long term, rehabilitation will involve the reinstatement of the remaining disturbed areas (not yet reinstated), prior to the submission of a closure application to the DMRE. The Applicant will further be responsible for the seeding of all rehabilitated areas should vegetation not establish through succession within the first six months.

The decommissioning activities will consist of the following:

- ◆ Removal of all prospecting equipment from the sampling sites;
- ◆ Sealing and capping of the boreholes;
- ◆ Backfilling of all trenches and pits;
- ◆ Removal of all prospecting related infrastructure/containers from the site camp; and
- ◆ Landscaping of any/all compacted areas.

The Applicant will comply with the minimum closure objectives as prescribed DMRE and detailed below.

#### **Rehabilitation of the Excavations**

- ◆ The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material (if any) removed from the excavation must be dumped into the excavation.
- ◆ No waste may be permitted to be deposited in the excavations.

- ◆ Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.
- ◆ The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

#### **Rehabilitation of Site Camp Area**

- ◆ On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):
  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- ◆ Photographs, before and during the operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the DMRE Regional Manager.
- ◆ On completion of operations, the surface of these areas, if compacted, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.
- ◆ The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- ◆ If an assessment by a qualified ecologist indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from

the prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

### **Final Rehabilitation**

- ◆ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance, and clearing of invasive plant species.
- ◆ All equipment, plant, and other items used during the invasive prospecting period must be removed from the site (section 44 of the MPRDA).
- ◆ Waste material of any description, including receptacles, scrap, rubble, and tyres, must be removed entirely from the prospecting area, and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- ◆ The management of invasive plant species must be done in a sporadic manner during the life of the prospecting activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) need to be eradicated from the site.
- ◆ Final rehabilitation must be completed within a period specified by the Regional Manager (DMRE).

Once the prospecting area was rehabilitated the Applicant is required to submit a closure application to the Department of Mineral Resources and Energy in accordance with section 43(4) of the MPRDA, 2002 that states: *“An application for a closure certificate must be made to the Regional Manager in whose region the land in question is situated within 180 days of the occurrence of the lapsing, abandonment, cancellation, cessation, relinquishment or completion contemplated in subsection (3) and must be accompanied by the prescribed environmental risk report”*. The Closure Application will be submitted in terms of Regulation 62 of the MPRDA, 2002, and Government Notice 940 of NEMA, 1998 (as amended).

### **ii) The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity.**

Due to the nature of the proposed prospecting operation, it is believed that the risk for pollution related environmental damage is low. If site management

implement the mitigation measures as prescribed in this document, it is believed that the impact on the receiving environment can be adequately controlled.

**iii) Potential risk of Acid Mine Drainage.**

(Indicate whether or not the mining can result in acid mine drainage).

Not applicable.

**iv) Steps taken to investigate, assess, and evaluate the impact of acid mine drainage.**

Not applicable.

**v) Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage.**

Not applicable.

**vi) Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage.**

Not applicable.

**vii) Volumes and rate of water use required for the mining, trenching or bulk sampling operation.**

As mentioned in *Part A(1)(d)(ii) Description of the activities to be undertaken – Water Use* the Applicant intends to use  $\pm 10\,000$  l of water per day for the bulk sampling activities. Potable water will daily be transported to site by the employees, while the process water will be bought from registered local source (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s).

**viii) Has a water use license been applied for?**

The application proposes that sampling will remain  $>100$  m from all active water sources. This will be groundtruthed and confirmed by a hydrologist prior to commencement.

However, once the invasive prospecting plan was finalised and should an application in terms of Section 39 of the NWA, 1998 for water uses as defined in section 21 of the Act be needed, the Applicant will enter discussions with the DWS to determine the relevant requirements.



**ix) Impacts to be mitigated in their respective phases.**

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

Table 37: Impact to be mitigated in their respective phases

ACTIVITIES  (as listed in 2.11.1)	PHASE  of operation in which activity will take place.  State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	SIZE AND SCALE OF DISTURBANCE  (volumes, tonnages and hectares or m <sup>2</sup> )	MITIGATION MEASURES  (describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	COMPLIANCE WITH STANDARDS  (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION  Describe the time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either – Upon cessation of the individual activity or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.
Invasive Prospecting (Phase 3 & 5):  ♦ Site Establishment ♦ Operational Phase	Site Establishment- & Operational Phase	<u>Site Camp:</u> ±3 ha  <u>Drilling:</u> 200 m <sup>2</sup> per borehole site  <u>Bulk Sampling:</u> Range between 2 500 m <sup>2</sup> and 10 000 m <sup>2</sup> per site	<u>Loss of Agricultural Land for Duration of Prospecting:</u> ♦ If needed, areas that has been prospected and rehabilitated can be signed back to the landowner to revert to agricultural use once the cover crop stabilised.	Use of agricultural land must be managed in accordance with the: ♦ CARA, 1983	Throughout the site establishment-, and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Operational Phase</li> </ul>	<p>Site Establishment- &amp; Operational Phase</p>	<p><u>Site Camp:</u> ±3 ha</p> <p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Visual Mitigation</u></b></p> <ul style="list-style-type: none"> <li>◆ Prospecting must be contained to the approved boundaries.</li> <li>◆ The camp site and every sampling site must have a neat appearance and always be kept in good condition.</li> <li>◆ The contractor must limit vegetation removal (where possible) and avoid the removal of large trees (&gt;20 cm stem) or vegetation of significance without prior approval of the ECO.</li> <li>◆ Prospecting equipment must be stored neatly in a dedicated area when not in use.</li> <li>◆ Concurrent rehabilitation must be done as prospecting progress to limit the visual impact on the aesthetic value of the area.</li> <li>◆ Stripping of topsoil may only be done immediately prior to the use of a specific area.</li> <li>◆ Upon closure all sites must be rehabilitated to keep the visual impact on the aesthetic value of the area to a minimum.</li> </ul>	<p>Management of the prospecting area must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MPRDA, 2008</li> <li>◆ NEMA, 1998</li> </ul>	<p>Throughout the site establishment- and operational phases.</p>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p>	<p><b><u>Management of the impact on floral species, and fragmentation of vegetation communities within the CBA and ESA ecosystems:</u></b></p>	<p>Natural vegetated areas must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>	<p>Throughout the operational-, and decommissioning phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impacts</li> </ul>		<p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<ul style="list-style-type: none"> <li>◆ Once the invasive prospecting programme is available additional fieldwork must be done by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants.</li> <li>◆ The findings of the ecologist, with the final plan, must be submitted to the DMRE for approval prior to commencement.</li> <li>◆ The prospecting boundaries must be clearly demarcated, and all operations must be contained to the approved areas.</li> <li>◆ The area outside the boundaries must be declared a no-go area, and all employees must be educated accordingly.</li> <li>◆ An invasive plant species management plan must be implemented on site to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.</li> <li>◆ Should an application for the removal of protected plant species, and/or indigenous plants (1) on large-scale, (2) or on small scale within 100 meters of a river or a public road, be applicable, the EA Holder must</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<p>submit a thorough walk-through report to the relevant competent authorities (DAERL) prior to commencing any earthworks. This report must comprehensively assess, and list species based on their protection statuses according to the Northern Cape Nature Conservation Act 9 of 2009 (NCNCA), the National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA: ToPS), and the National Forest Act 84 of 1998 (NFA). It must also include the IUCN Red List status, endemism, and estimate the quantities of each impacted protected species. Ideally, the walk-through assessment must be conducted during the appropriate season for the area to ensure accurate observation of species presence and habitat conditions, thereby maximizing the effectiveness of the assessment in capturing the full ecological picture.</p> <ul style="list-style-type: none"> <li>◆ Should Bermolli No 583/5 be a declared Nature Reserve prior to the granting of the prospecting right the Applicant will omit the farm from the prospecting programme.</li> <li>◆ At Bermolli No 583/5 and Engelsdraai No 221/RE the site camps must be</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<p>established on previously disturbed/alterd areas.</p> <ul style="list-style-type: none"> <li>◆ Bulk sampling must be restricted to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s where the ecologist deems it necessary.</li> </ul>		
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Management of the potential impact on watercourse/wetlands and FEPA's of the study area:</u></b></p> <ul style="list-style-type: none"> <li>◆ No prospecting may occur in any freshwater ecosystems considered high-moderate sensitivity prior to a second phase investigation by a qualified hydrologist.</li> <li>◆ The findings of the hydrologist, with the final sampling programme, must be submitted to the DMRE for approval prior to commencement.</li> <li>◆ No activities may take place, without the necessary authorisation from the DWS, within a horizontal distance of 100 m from any watercourse or estuary or within a 500 m radius from a delineated boundary of any wetland or pan.</li> <li>◆ No site camp may be established in or within 100 m of a watercourse.</li> <li>◆ In addition to the EA, if a WUA is applicable, the Applicant must always</li> </ul>	<p>All watercourses/wetlands and FEPA's must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> </ul>	<p>Throughout the operational phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<p>adhere to the conditions of the authorisation.</p> <ul style="list-style-type: none"> <li>◆ Water abstraction may only occur at a registered water source in accordance with the requirements of the authorisation. Water tally sheets must monitor water use, and baseline water quality results must be obtained for each source and filed for auditing purposes.</li> <li>◆ Upon closure, the Applicant must remove all prospecting related equipment/machinery from the footprint and reinstate the sampled areas to a state determined and approved by the hydrologist.</li> </ul>		
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Fugitive Dust Emission Mitigation:</u></b></p> <ul style="list-style-type: none"> <li>◆ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).</li> <li>◆ The site manager must ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> </ul>	<p>Dust generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> </ul>	<p>Throughout the operational-, and decommissioning phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<ul style="list-style-type: none"> <li>◆ The crusher plant must be equipped with water sprayers to alleviate dust and fines buildup must at least weekly be removed from and around the conveyors.</li> <li>◆ Speed on the access road must be limited to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Areas devoid of vegetation, which could act as a dust source, must be minimized and vegetation removal may only be done immediately prior to prospecting.</li> <li>◆ Weather conditions must be taken into consideration upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.</li> <li>◆ All dust generating activities shall comply with the National Dust Control Regulations, GN No R827 promulgated in terms of NEM:AQA (Act 39 of 2004) and ASTM D1739 (SANS 1137:2012).</li> <li>◆ Best practice measures shall be implemented during the stripping of topsoil to minimize potential dust impacts.</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Noise Handling:</u></b></p> <ul style="list-style-type: none"> <li>◆ The Applicant must ensure that the employees and visitors to the site conduct themselves in an acceptable manner while on site.</li> <li>◆ No loud music may be permitted at the site camp and/or prospecting areas.</li> <li>◆ All vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996 (Act No 93 of 1996).</li> <li>◆ Best practice measures shall be implemented to minimize potential noise impacts.</li> </ul>	<p>Noise generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ NRTA, 1996</li> </ul>	<p>Throughout the operational-, and decommissioning phase.</p>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impact</li> </ul>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Protection of Fauna:</u></b></p> <ul style="list-style-type: none"> <li>◆ The site manager must ensure no fauna is caught, killed, harmed, sold, or played with.</li> <li>◆ Workers must be instructed to report any animals that may be trapped in the working area.</li> <li>◆ No snares may be set, or nests raided for eggs or young.</li> <li>◆ No pets allowed on site.</li> </ul>	<p>Fauna must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>➤ NEM:BA 2004</li> </ul>	<p>Throughout the and operational phase.</p>



ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<p>Operational and Decommissioning Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Management of Invader Plant Species:</u></b></p> <ul style="list-style-type: none"> <li>◆ An invasive plant species management plan must be implemented on site to control weeds and invasive plants on denuded- and reinstated areas in terms of the NEM:BA, 2004 and CARA, 1983.</li> <li>◆ All stockpiles must be kept free of invasive plant species.</li> <li>◆ Management must take responsibility to control declared invader or exotic species that germinate on rehabilitated areas. The following control methods can be used:                             <ul style="list-style-type: none"> <li>▶ The plants can be uprooted, felled, or cut off and can be destroyed completely.</li> <li>▶ The plants can be treated chemically by a registered pest control officer (PCO) using an herbicide recommended for use by the PCO in accordance with the directions for the use of such an herbicide.</li> </ul> </li> </ul>	<p>Invader plants must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA 2004</li> </ul>	<p>Throughout the operational, and decommissioning phase.</p>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational and Decommissioning Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u></p>	<p><b><u>Waste Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ Vehicle maintenance, repairs and services may only take place at the workshop and service area in the site camp. If emergency repairs are</li> </ul>	<p>Prospecting related waste must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> <li>◆ NEM:WA, 2008</li> </ul>	<p>Throughout the site establishment-, operational- and decommissioning phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<ul style="list-style-type: none"> <li>◆ Decommissioning Phase</li> </ul>		<p>Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p>needed on equipment not able to move to the workshop, drip trays must be present. All waste products must be disposed of in a closed container/bin to be removed from the emergency service area (same day) to the workshop to ensure proper disposal.</p> <ul style="list-style-type: none"> <li>◆ Ablution facilities must be provided to all employees. The toilet must be placed outside the 1:100 year floodline of all watercourses.</li> <li>◆ The ablution facilities must not cause any pollution to water sources or pose a health hazard. In addition, no form of secondary pollution should arise from the disposal of refuse or sewage. Any pollution problems arising from the above are to be addressed immediately by the Applicant.</li> <li>◆ If a diesel bowser is used on site, it must always be equipped with a drip tray. Drip trays must be used during every refuelling event. The nozzle of the bowser needs to rest in a sleeve to prevent dripping after refuelling.</li> <li>◆ Site management must ensure drip trays are cleaned after each use. No dirty drip trays may be used on site.</li> </ul>	<ul style="list-style-type: none"> <li>◆ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)</li> <li>◆ NEMA, 1998 (Section 30)</li> </ul>	

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<ul style="list-style-type: none"> <li>◆ Any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or for appropriate disposal at a recognized facility.</li> <li>◆ Should spillage occur, such as oil or diesel leaking from a burst pipe, the contaminated soil must, within the first hour of occurrence, be collected in a suitable receptacle and removed to the hazardous waste storage area of the workshop, either for resale or for appropriate disposal at a recognized facility. Proof must be filed.</li> <li>◆ General waste must be contained in marked, sealable, refuse bins placed at a designated area, to be removed when filled to a registered general waste landfill site.</li> <li>◆ No waste may be buried or burned on the site.</li> <li>◆ It is important that any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities is reported to the Department of Water and Sanitation and other relevant authorities.</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational Phase</p>	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Archaeological, Heritage and Palaeontological Aspects:</u></b></p> <ul style="list-style-type: none"> <li>◆ Once the sampling sites have been confirmed these areas have to be subjected to a heritage walk down, this should be conducted prior to the commencement of invasive prospecting activities.</li> <li>◆ Sampling sites must be kept as close as possible to existing roads to minimise the impact on the landscape.</li> <li>◆ Focal points on the landscape like rocky outcrops, caves, or pans must be avoided as far as possible as these areas could be sensitive from a heritage point of view.</li> <li>◆ Burial sites, memorials and graves must be avoided with a 30 m buffer zone.</li> <li>◆ Further palaeontological studies should be conducted once the impact areas are confirmed.</li> <li>◆ Samples of diatomite from each farm must be collected and deposited at a recognised repository such as the McGregor Museum in Kimberley, or a palaeontological research institute, and SAHRA must be notified of what action has been taken.</li> </ul>	<p>Cultural/heritage aspects must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NHRA, 1999</li> </ul>	<p>Throughout the operational phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<ul style="list-style-type: none"> <li>◆ Monitoring of the project area by the ECO during the exploration phase for heritage chance finds, and if chance finds are encountered to implement the Chance Find Procedure for the project.</li> <li>◆ If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>◆ It is the responsibility of the senior on-site manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.</li> <li>◆ The senior on-site manager must inform the ECO of the chance find and its immediate impact on operations. The ECO must then contact a professional archaeologist for an assessment of the finds who must notify SAHRA.</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<ul style="list-style-type: none"> <li>◆ Work may only continue once the go-ahead was issued by SAHRA.</li> </ul>		
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	Operational Phase	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p> <p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<p><b><u>Erosion Control and Storm Water Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ Storm water must be diverted around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion.</li> <li>◆ Drainage must be controlled to ensure that runoff from the prospecting areas do not culminate in off-site pollution, flooding or result in any damage to properties downstream or any storm water discharge points.</li> <li>◆ Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system (if applicable).</li> <li>◆ Dirty water must be collected and contained in a system separate from the clean water system.</li> <li>◆ Dirty water must be prevented from spilling or seeping into clean water systems.</li> </ul>	<p>Storm water must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEMA, 1998</li> <li>◆ NWA, 1998</li> </ul>	Throughout the operational phase.
<p>Invasive Prospecting (Phase 3 &amp; 5):</p>	Operational Phase	<p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p>	<p><b><u>Access Road and Infrastructure Mitigation:</u></b></p>	The site infrastructure must be managed in accordance with the:	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>		<p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<ul style="list-style-type: none"> <li>◆ Storm water must be diverted around the access road to prevent erosion.</li> <li>◆ Vehicular movement must be restricted to the existing access road and crisscrossing of tracks through undisturbed areas must be prohibited.</li> <li>◆ Rutting and erosion of the access road caused as a direct result of the prospecting activities must be repaired by the Applicant.</li> <li>◆ Overloading of the trucks must be prevented, and proof of load weights must be filed for auditing purposes.</li> <li>◆ Prior to commencement, all contractors must sign an agreement confirming their responsibility towards the movement of their employees.</li> <li>◆ Damages to fences (by prospecting employees) must be repaired/reinstated by the responsible contractor. Losses, due to gates left open by prospecting employees, must be compensated by the responsible entity.</li> <li>◆ A speed limit of not more than 40 km/h on internal roads and 60 km/h on public roads must be implemented for the duration of the project.</li> </ul>	<ul style="list-style-type: none"> <li>◆ NRTA, 1996</li> <li>◆ MPRDA, 2002</li> </ul>	

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase	Operational and Decommissioning Phase	N/A	<p><b><u>Management of Health and Safety Risks:</u></b></p> <ul style="list-style-type: none"> <li>♦ Adequate ablution facilities and water for human consumption must daily be available on site.</li> <li>♦ Worker(s) must have access to the correct personal protection equipment (PPE) as required by law.</li> <li>♦ All operations must comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> <li>♦ Drill-holes must daily be covered, and pits/trenches barricaded even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped, while the pits/trenches are backfilled as prescribed in the rehabilitation plan.</li> </ul>	Health and safety aspects must be managed in accordance with the: <ul style="list-style-type: none"> <li>♦ MHSA, 1996</li> <li>♦ OHSA, 1993</li> <li>♦ OHSAS, 18001</li> </ul>	Throughout the operational-, and decommissioning phase.
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase	Operational Phase	N/A	<p><b><u>Management of safety and security risk posed by prospecting activities to residents:</u></b></p> <ul style="list-style-type: none"> <li>♦ Employees to be appointed must be vetted prior to inception of contract.</li> <li>♦ No employees may be allowed to reside within the prospecting area.</li> <li>♦ Prospecting employees must be educated to report suspicious</li> </ul>	All prospecting activities must be in accordance with the: <ul style="list-style-type: none"> <li>♦ MPRDA, 2002;</li> <li>♦ NEMA, 1998</li> </ul>	Throughout the operational phase.



ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<p>looking person/s and/or matters to site management.</p> <ul style="list-style-type: none"> <li>◆ Direct communication between the prospector and the landowners must be maintained for the duration of the site establishment-, operational, and decommissioning phases.</li> <li>◆ The prospecting contractor may not enter negotiations with farm employees.</li> <li>◆ Prospecting may only take place during normal business hours and unless otherwise authorised by the landowner.</li> <li>◆ No alcohol or prohibited drugs may be allowed on site.</li> <li>◆ Attendance registers must be maintained, and all prospecting vehicles/machinery must be pre-registered with the landowner/security.</li> <li>◆ No firearms will be allowed on site.</li> </ul>		
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p>Operational Phase</p>	<p><u>Site Camp:</u> ±3 ha</p> <p><u>Drilling:</u> 200 m<sup>2</sup> per borehole site</p>	<p><b><u>Fire Risk Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ No open fires are permitted on any of the sampling sites. Contained fires for heating and cooking (i.e. in a fire drum) but be restricted to designated areas at the site camp,</li> </ul>	<p>All prospecting activities must be in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ MPRDA, 2002;</li> <li>◆ NEMA, 1998</li> </ul>	<p>Throughout the operational phase.</p>

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
		<p><u>Bulk Sampling:</u> Range between 2 500 m<sup>2</sup> and 10 000 m<sup>2</sup> per site</p>	<ul style="list-style-type: none"> <li>◆ Employees must be prevented from setting fires randomly outside designated areas.</li> <li>◆ No fuel or chemicals may be stored under trees.</li> <li>◆ Gas may not be stored in the same storage area as liquid fuel.</li> <li>◆ Smoking may only occur at designated areas (&gt;3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds.</li> <li>◆ Ensure Work Site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site.</li> <li>◆ Specific fire safety precautions must be implemented during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any "HOT WORK" is undertaken e.g. welding, grinding, gas cutting etc,</li> <li>◆ Any fires noted on site must be reported to the responsible SHE rep and/or fire officer.</li> </ul>		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			<ul style="list-style-type: none"> <li>◆ The site must implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases.</li> <li>◆ In the event of large fires all personnel must assemble at a safe assembly point to be transported from site. The fire department or local fire watch must be informed of the fire to ensure that the fire is brought under control as soon as possible.</li> </ul>		

**NC 30/5/1/1/2/13826 PR: DIATOMITE / KIESELGUHR / DIATOMACEOUS EARTH PROSPECTING RIGHT**

**e) Impact Management Outcomes**

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

*Table 38: Impact Management Outcomes*

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
<p>whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)</p>	<p>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)</p>		<p>In which impact is anticipated  (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))</p>	<p>(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.  <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> <li>• Remedy through rehabilitation.</li> </ul> </p>	<p>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.</p>
<p>Invasive Prospecting (Phase 3 &amp; 5):  ♦ Site Establishment ♦ Operational Phase</p>	<p>♦ Temporary loss of agricultural land earmarked for site camp establishment.  ♦ Temporary loss of some agricultural land earmarked for invasive prospecting.</p>	<p>The impact may affect the agricultural operations of the property.</p>	<p>Site Establishment- &amp; Operational Phase</p>	<p>Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint, only to be reversed upon rehabilitation of the site camp and/or prospected areas. The impact can be controlled through progressive rehabilitation.</p>	<p>Use of agricultural land must be managed in accordance with the: ♦ CARA, 1983</p>
<p>Invasive Prospecting (Phase 3 &amp; 5):  ♦ Site Establishment ♦ Operational Phase</p>	<p>♦ Visual intrusion because of site camp.  ♦ Visual intrusion because of invasive prospecting.</p>	<p>The visual impact may affect the aesthetics of the landscape.</p>	<p>Site Establishment- &amp; Operational Phase</p>	<p><u>Control:</u> Implementing proper housekeeping.</p>	<p>Management of the prospecting area must be in accordance with the: ♦ MPRDA, 2008 ♦ NEMA, 1998</p>

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impacts</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential impact on sensitive/protected flora within the footprint.</li> <li>◆ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>◆ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.</li> <li>◆ Potential impact on the declaration of the Kolomela biodiversity offset area.</li> </ul>	<p>Impact may affect the biodiversity richness of the area.</p>	<p>Operational Phase</p>	<p><u>Control:</u> Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.</p>	<p>Natural vegetated areas must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.  ♦ Increase in sediment inputs and turbidity due to invasive prospecting.  ♦ Increase in toxic heavy metal contaminants.	Impact may affect water resources in a water scarce area.	Operational Phase	<u>Control &amp; Stop:</u> Implementing the proposed mitigation measures.	All watercourses/wetlands and FEPA's must be managed in accordance with the: ♦ NWA, 1998
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Dust nuisance because of invasive prospecting.	Increased dust generation will impact on the air quality of the receiving environment.	Operational Phase	<u>Control:</u> Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the: ♦ NEM:AQA. 2004 Regulation 6(1) ♦ National Dust Control Regulations, GN No R827 ♦ ASTM D1739 (SANS 1137:2012)
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Noise nuisance because of invasive prospecting.	Should noise levels become excessive it may have an impact on the noise ambiance of the receiving environment.	Operational Phase	<u>Control:</u> Noise suppression methods and proper housekeeping.	Noise generation must be managed in accordance with the: ♦ NEM:AQA. 2004 Regulation 6(1) ♦ NRTA, 1996

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Invasive Prospecting (Phase 3 & 5): <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impact</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint.</li> <li>◆ Fragmentation of ecosystems affecting safe movement of faunal species.</li> </ul>	This will impact on the biodiversity of the receiving environment.	Operational Phase	<u>Control &amp; Stop:</u> Implementing good management practices.	Fauna must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>
Invasive Prospecting (Phase 3 & 5): <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Infestation of the prospecting area with invader plant species.</li> <li>◆ Infestation of the reinstated areas with invader plant species.</li> </ul>	This will impact on the biodiversity of the receiving environment.	Operational Phase	<u>Control:</u> Implementing invader plant control measures.	Invader plants must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> <li>◆ NEM:BA 2004</li> </ul>
Invasive Prospecting (Phase 3 & 5): <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential soil contamination associated with littering and/or hydrocarbon spillages.</li> <li>◆ Potential impact associated with litter/hydrocarbon spills left in the prospected areas.</li> </ul>	Contamination of the footprint will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the Applicant.	Operational- and Decommissioning Phase	<u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan.	Prospecting related waste must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> <li>◆ NEM:WA, 2008</li> <li>◆ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)</li> <li>◆ NEMA, 1998 (Section 30)</li> </ul>

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Potential impact on area/infrastructure of heritage or cultural concern. ♦ Potential impact on palaeontological aspects.	This could impact the cultural, heritage and/or palaeontological legacy of the receiving environment.	Operational Phase	<u>Control &amp; Stop:</u> Implementing good management practices, as well as the chance-find protocol.	Cultural/heritage aspects must be managed in accordance with the: ♦ NHRA, 1999
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase ♦ Decommissioning Phase	♦ Erosion of denuded areas. ♦ Erosion of roads, vehicle tracks and/or denuded areas.	Erosion of prospected areas will affect the rehabilitation requirements and incur additional cost to the Applicant.	Operational- & Decommissioning Phase	<u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.	Storm water must be managed in accordance with the: ♦ CARA, 1983 ♦ NEMA, 1998 ♦ NWA, 1998
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Deterioration of the access roads due to prospecting activities.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	<u>Control &amp; Remedy:</u> Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	The site infrastructure must be managed in accordance with the: ♦ NRTA, 1996 ♦ MPRDA, 2002
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Health and safety risk posed by invasive activities to prospecting employees.	The safety of the employees will be affected.	Operational Phase	<u>Control, Stop &amp; Remedy:</u> Prospecting according to the health and safety regulations of the country and rectifying any shortcomings.	Health and safety aspects must be managed in accordance with the: ♦ MHSA, 1996 ♦ OHSA, 1993 ♦ OHSAS, 18001



ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase ♦ Decommissioning Phase	♦ Presence of prospector negatively affecting safety and security of the property. ♦ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.	The impact may affect the security of the area. Unsafe boreholes/pits/trenches will pose a safety risk to the animals and humans of the area.	Operational Phase	<u>Control, Stop &amp; Remedy:</u> Implementing proper human resources practices, and progressive rehabilitation. Closing boreholes at the end of each day.	All prospecting activities must be in accordance with the: ♦ MPRDA, 2002; ♦ NEMA, 1998
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Increased fire risk during operational phase.	Uncontrolled fires may affect the biodiversity and agricultural practices of the area.	Operational Phase	<u>Control:</u> Implementing good housekeeping and emergency risk procedures.	All prospecting activities must be in accordance with the: ♦ MPRDA, 2002; ♦ NEMA, 1998

**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).

Table 39: Impact Management Actions

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	(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. <ul style="list-style-type: none"> <li>• Modify through alternative method.</li> <li>• Control through noise control</li> <li>• Control through management and monitoring</li> </ul> Remedy through rehabilitation.	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. With regard to Rehabilitation, therefore state either: Upon cessation of the individual activity Or. Upon the cessation of mining bulk sampling or alluvial diamond prospecting as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Invasive Prospecting (Phase 3 & 5):  <ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Temporary loss of agricultural land earmarked for site camp establishment.</li> <li>◆ Temporary loss of some agricultural land earmarked for invasive prospecting.</li> </ul>	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint, only to be reversed upon rehabilitation of the site camp and/or prospected areas. The impact can be controlled through progressive rehabilitation.	Throughout the site and establishment-operational phase.	Use of agricultural land must be managed in accordance with the: <ul style="list-style-type: none"> <li>◆ CARA, 1983</li> </ul>
Invasive Prospecting (Phase 3 & 5):	<ul style="list-style-type: none"> <li>◆ Visual intrusion because of site camp.</li> </ul>	<u>Control:</u> Implementing proper housekeeping.	Throughout the site and establishment-operational phase.	Management of the prospecting area must be in accordance with the:

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
<ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Visual intrusion because of invasive prospecting.</li> </ul>			<ul style="list-style-type: none"> <li>◆ MPRDA, 2008</li> <li>◆ NEMA, 1998</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impacts</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential impact on sensitive/protected flora within the footprint.</li> <li>◆ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>◆ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.</li> <li>◆ Potential impact on the declaration of the Kolomela biodiversity offset area.</li> </ul>	<p><u>Control:</u> Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.</p>	<p>Throughout the operational phase.</p>	<p>Natural vegetated areas must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> </ul>	<p><u>Control &amp; Stop:</u> Implementing the proposed mitigation measures.</p>	<p>Throughout the operational, phase.</p>	<p>All watercourses/wetlands and FEPA's must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NWA, 1998</li> </ul>

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	<ul style="list-style-type: none"> <li>◆ Increase in sediment inputs and turbidity due to invasive prospecting.</li> <li>◆ Increase in toxic heavy metal contaminants.</li> </ul>			
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Dust nuisance because of invasive prospecting.</li> </ul>	<p><u>Control:</u> Dust suppression methods and proper housekeeping.</p>	<p>Throughout the operational phase.</p>	<p>Dust generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ National Dust Control Regulations, GN No R827</li> <li>◆ ASTM D1739 (SANS 1137:2012)</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Noise nuisance because of invasive prospecting.</li> </ul>	<p><u>Control:</u> Noise suppression methods and proper housekeeping.</p>	<p>Throughout the operational phase.</p>	<p>Noise generation must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:AQA. 2004 Regulation 6(1)</li> <li>◆ NRTA, 1996</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impact</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint.</li> <li>◆ Fragmentation of ecosystems affecting safe movement of faunal species.</li> </ul>	<p><u>Control &amp; Stop:</u> Implementing good management practices.</p>	<p>Throughout the operational phase.</p>	<p>Fauna must be managed in accordance with the:</p> <ul style="list-style-type: none"> <li>◆ NEM:BA 2004</li> </ul>

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase ♦ Decommissioning Phase	♦ Infestation of the prospecting area with invader plant species.  ♦ Infestation of the reinstated areas with invader plant species.	<u>Control:</u> Implementing invader plant control measures.	Throughout the operational and decommissioning phase.	Invader plants must be managed in accordance with the: ♦ CARA, 1983 ♦ NEM:BA 2004
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase ♦ Decommissioning Phase	♦ Potential soil contamination associated with littering and/or hydrocarbon spillages.  ♦ Potential impact associated with litter/hydrocarbon spills left in the prospected areas.	<u>Control &amp; Remedy:</u> Proper housekeeping and implementation of an emergency response plan.	Throughout the operational and decommissioning phase.	Prospecting related waste must be managed in accordance with the: ♦ NWA, 1998 ♦ NEM:WA, 2008 ♦ NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) ♦ NEMA, 1998 (Section 30)
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase	♦ Potential impact on area/infrastructure of heritage or cultural concern.  ♦ Potential impact on palaeontological aspects.	<u>Control &amp; Stop:</u> Implementing good management practices, as well as the chance-find protocol.	Throughout the operational phase.	Cultural/heritage aspects must be managed in accordance with the: ♦ NHRA, 1999
Invasive Prospecting (Phase 3 & 5):  ♦ Operational Phase ♦ Decommissioning Phase	♦ Erosion of denuded areas.  ♦ Erosion of roads, vehicle tracks and/or denuded areas.	<u>Control &amp; Remedy:</u> Proper housekeeping and storm water management.	Throughout the operational and decommissioning phase.	Storm water must be managed in accordance with the: ♦ CARA, 1983 ♦ NEMA, 1998 ♦ NWA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Deterioration of the access roads due to prospecting activities.	<u>Control &amp; Remedy:</u> Maintaining the access road for the duration of the operational phase, as well as leaving it in a representative or better condition than prior to prospecting.	Throughout the operational phase.	The site infrastructure must be managed in accordance with the: ♦ NRTA, 1996 ♦ MPRDA, 2002
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Health and safety risk posed by invasive activities to prospecting employees.	<u>Control, Stop &amp; Remedy:</u> Prospecting according to the health and safety regulations of the country and rectifying any shortcomings.	Throughout the operational phase.	Health and safety aspects must be managed in accordance with the: ♦ MHSA, 1996 ♦ OHSA, 1993 ♦ OHSAS, 18001
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase ♦ Decommissioning Phase	♦ Presence of prospector negatively affecting safety and security of the property. ♦ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.	<u>Control, Stop &amp; Remedy:</u> Implementing proper human resources practices, and progressive rehabilitation. Closing boreholes at the end of each day.	Throughout the operational phase.	All prospecting activities must be in accordance with the: ♦ MPRDA, 2002; ♦ NEMA, 1998
Invasive Prospecting (Phase 3 & 5): ♦ Operational Phase	♦ Increased fire risk during operational phase.	<u>Control:</u> Implementing good housekeeping and emergency risk procedures.	Throughout the operational phase.	All prospecting activities must be in accordance with the: ♦ MPRDA, 2002; ♦ NEMA, 1998

**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 Regulation 22 (2) (d) as described in 2.4 herein.**

The closure objectives entail removing the prospecting equipment and any foreign material from the site; sealing and capping of the drill holes, backfilling the pits/trenches and landscaping any compacted areas such as the site camp. Invasive plant species will be controlled on the reinstated areas during a 12 months' aftercare period to address germination of problem plants. The Applicant will comply with the minimum closure objectives as prescribed by DMRE.

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

This report, the draft EIAR & EMPR, includes all the environmental objectives in relation to closure and will be available for perusal by the landowner, I&AP's and stakeholders over a 30-days commenting period. The comments received on the draft EIAR will be incorporated into the Final EIAR & EMPR.

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

The rehabilitation plan is attached as Appendix C.

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

The decommissioning phase will entail the final rehabilitation of the prospecting footprint. Final landscaping, levelling and top dressing will be done. The rehabilitation of the prospecting area as indicated on the rehabilitation plan attached as Appendix C will comply with the minimum closure objectives as prescribed by DMRE and detailed below, and therefore is deemed compatible:

**Rehabilitation of the Excavations**

- ◆ The excavated area must serve as a final depositing area for the placement of overburden. Rocks and coarse material (if any) removed from the excavation must be dumped into the excavation.
- ◆ No waste may be permitted to be deposited in the excavations.

- ◆ Once overburden, rocks and coarse natural materials has been added to the excavation and it was profiled with acceptable contours and erosion control measures, the topsoil previously stored must be returned to its original depth over the area.
- ◆ The area must be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix to propagate the locally or regionally occurring flora, should natural vegetation not re-establish within six months from closure of the site.
- ◆ If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the prospecting operation be corrected and the area be seeded with a vegetation seed mix to his or her specification.

#### **Rehabilitation of Site Camp Area**

- ◆ On completion of operations, all structures or objects shall be dealt with in accordance with section 44 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002):
  - Where sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.
  - The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.
- ◆ Photographs, before and during the operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the DMRE Regional Manager.
- ◆ On completion of operations, the surface of these areas, if compacted, shall be scarified to a depth of at least 200 mm and graded to an even surface condition. Where applicable/possible topsoil needs to be returned to its original depth over the area.
- ◆ The area shall then be fertilized if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.
- ◆ If an assessment by a qualified ecologist indicates that the re-establishment of vegetation is unacceptably slow, the DMRE Regional Manager may require that the soil be analysed and any deleterious effects on the soil



arising from the prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.

**Final Rehabilitation**

- ◆ Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required), maintenance, and clearing of invasive plant species.
- ◆ All equipment, plant, and other items used during the invasive prospecting period must be removed from the site (section 44 of the MPRDA).
- ◆ Waste material of any description, including receptacles, scrap, rubble, and tyres, must be removed entirely from the prospecting area, and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- ◆ The management of invasive plant species must be done in a sporadic manner during the life of the prospecting activities. Species regarded as Category 1a and 1b invasive species in terms of NEM:BA (National Environmental Management: Biodiversity Act 10 of 2004 and regulations applicable thereto) need to be eradicated from the site.
- ◆ Final rehabilitation must be completed within a period specified by the Regional Manager (DMRE).

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

The calculation of the quantum for financial provision was according to Section B of the working manual.

**Mineral type and saleable mineral by-product**

According to Tables B.12, B.13 and B.14

Mineral type	<ul style="list-style-type: none"> <li>◆ Diatomite,</li> <li>◆ Diatomaceous Earth,</li> <li>◆ Kieselguhr</li> </ul>
Saleable mineral by-product	None

**Risk ranking**

According to Tables B.12, B.13 and B.14

Primary risk ranking (either Table B.12 or B.13)	C (Low risk)
Revised risk ranking (B.14)	N/A

**Environmental sensitivity of the prospect area**

According to Table B.4

Environmental sensitivity of the prospect area	Low
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**Level of information**

According to Step 4.2:

Level of information available	Limited
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**Identify closure components.**

According to Table B.5 and site-specific conditions

COMPONENT NO.	MAIN DESCRIPTION	APPLICABILITY OF CLOSURE COMPONENTS	
		(CIRCLE YES OR NO)	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	<b>NO</b>
2(A)	Demolition of steel buildings and structures	-	<b>NO</b>
2(B)	Demolition of reinforced concrete buildings and structures	-	<b>NO</b>
3	Rehabilitation of access roads	-	<b>NO</b>
4(A)	Demolition and rehabilitation of electrified railway lines	-	<b>NO</b>
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	<b>NO</b>
5	Demolition of housing and facilities	-	<b>NO</b>
6	Opencast rehabilitation including final voids and ramps	<b>YES</b>	-
7	Sealing of shafts, adits and inclines	-	<b>NO</b>
8(A)	Rehabilitation of overburden and spoils	-	<b>NO</b>
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	<b>NO</b>
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	<b>NO</b>

COMPONENT NO.	MAIN DESCRIPTION	APPLICABILITY OF CLOSURE COMPONENTS (CIRCLE YES OR NO)	
9	Rehabilitation of subsided areas	-	NO
10	General surface rehabilitation, including grassing of all denuded areas	YES	-
11	River diversions	-	NO
12	Fencing	-	NO
13	Water management (Separating clean and dirty water, managing polluted water, and managing the impact on groundwater)	-	NO
14	2 to 3 years of maintenance and aftercare	YES	-

**Unit rates for closure components**

According to Table B.6 master rates and multiplication factors for applicable closure components. The master rate from the DMRE Master Rates table for financial provision of 2024 was used.

COMPONENT NO.	MAIN DESCRIPTION	MASTER RATE	MULTIPLICATION FACTOR
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	-
2(A)	Demolition of steel buildings and structures	-	-
2(B)	Demolition of reinforced concrete buildings and structures	-	-
3	Rehabilitation of access roads	-	-
4(A)	Demolition and rehabilitation of electrified railway lines	-	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	-
5	Demolition of housing and facilities	-	-
6	Opencast rehabilitation including final voids and ramps	319 431	0.04
7	Sealing of shafts, adits and inclines	-	-
8(A)	Rehabilitation of overburden and spoils	-	-
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	-
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	-
9	Rehabilitation of subsided areas	-	-
10	General surface rehabilitation, including grassing of all denuded areas	168 695	1.00
11	River diversions	-	-
12	Fencing	-	-

COMPONENT NO.	MAIN DESCRIPTION	MASTER RATE	MULTIPLICATION FACTOR
13	Water management (Separating clean and dirty water, managing polluted water, and managing the impact on groundwater)	-	-
14	2 to 3 years of maintenance and aftercare	22 450	1.00

**Determine weighting factors.**

According to Tables B.7 and B.8

Weighting factor 1: Nature of terrain/accessibility	1.00 (Flat)
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05 (Peri-Urban)

**Calculation of closure costs**

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision.

Table 40: Calculation of closure cost

CALCULATION OF THE QUANTUM							
<b>Mine:</b>	K2022641005 (SOUTH AFRICA) (Pty) Ltd Prospecting Right			<b>Location:</b>	Hay & Kuruman Districts		
<b>Evaluators:</b>	C Fouché			<b>Date:</b>	03 September 2024		
No	Description	Unit	A Quantity	B Master rate	C Multiplication factor	D Weighting factor 1	E=A *B*C*D Amount (rands)
			Step 4.5	Step 4.3	Step 4.3	Step 4.4	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m <sup>3</sup>	0	22	1.00	1.00	R 0.00
2(A)	Demolition of steel buildings and structures	m <sup>2</sup>	0	305	1.00	1.00	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m <sup>2</sup>	0	449	1.00	1.00	R 0.00
3	Rehabilitation of access roads	m <sup>2</sup>	0	55	1.00	1.00	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	529	1.00	1.00	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	289	1.00	1.00	R 0.00
5	Demolition of housing and/or administration facilities	m <sup>2</sup>	0	609	1.00	1.00	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	3	319 431	0.04	1.00	R 38 331.72
7	Sealing of shaft, audits, and inclines	m <sup>3</sup>	0	164	1.00	1.00	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0	212 954	1.00	1.00	R 0.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	265 230	1.00	1.00	R 0.00

8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	770 354	0.51	1.00	R 0.00
9	Rehabilitation of subsided areas	ha	0	178 317	1.00	1.00	R 0.00
10	General surface rehabilitation	ha	0.5	168 695	1.00	1.00	R 84 347.50
11	River diversions	ha	0	168 695	1.00	1.00	R 0.00
12	Fencing	m	0	192	1.00	1.00	R 0.00
13	Water Management	ha	0	64 143	0.17	1.00	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	3	22 450	1.00	1.00	R 67 350.00
15(A)	Specialists study	Sum	0				R 0.00
15(B)	Specialists study	Sum	0				R 0.00
Sum of items 1 to 15 above							R 190 029.22
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 190 029.22		<b>Sub Total 1</b>	R 199 530.68

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00		R 11 971.84
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00		-
2	Contingency	10.0% of Subtotal 1		R 19 953.07
<b>Sub Total 2</b>				
(Subtotal 1 plus management and contingency)				R 231 455.59
Vat (15%)				R 34 718.34
GRAND TOTAL				
(Subtotal 3 plus VAT)				<b>R 266 173.93</b>

According to the above calculations, the amount that will be necessary for the rehabilitation of damages caused by the operation, both at sudden closure during the normal operation of the project and at final, planned closure gives a sum of R 266 173.93.

The Applicant proposes the payment schedule as presented in the following table regarding the financial provision amount:

Table 41: Financial provision proposed payment schedule

PHASE	ACTIVITY	SKILLS REQUIRED	TIMEFRAME	PROPOSED REHABILITATION GUARANTEE AMOUNT (ANNUALLY CUMULATIVE)
1	<b>Non-Invasive Prospecting</b>  Desktop Geological Study: Literature Survey / Review	Geologist	Month 1-6	-
2	<b>Non-Invasive Prospecting</b>  Geological Field Mapping	Geologist & Field Crew	Month 6-12	Environmental liability <b>Year 1</b>  R 89 500.00
3	<b>Invasive Prospecting</b>  Exploration pits and sampling  Phase 1 – Bulk Sampling 50 000 m <sup>3</sup> @ density of 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 12-36	Environmental liability <b>Year 2</b>  R 89 500.00
4	<b>Non-Invasive Prospecting</b>  Geological Feasibility Target Selection  Metallurgical Testing and Analysis	Geologist / Laboratory Technicians / Metallurgical Specialists	Month 36-42	Environmental liability <b>Year 3</b>  R 45 000.00
5	<b>Invasive Prospecting</b>  Exploration pits and sampling  Phase 2 Bulk Sampling 50 000 m <sup>3</sup> @ density 2.25	Geologist / Excavator Team / Field Crew / Laboratory Technicians	Month 36 - 54	Environmental liability <b>Year 4 &amp; 5</b>  R 42 173.93

PHASE	ACTIVITY	SKILLS REQUIRED	TIMEFRAME	PROPOSED REHABILITATION GUARANTEE AMOUNT (ANNUALLY CUMULATIVE)
6	<p><b>Non-Invasive Prospecting</b></p> <p>Analytical Desktop Pre-Feasibility Study.</p> <p>Feasibility Study and Mining Right Application.</p>	<p>Economic Geologist / Mining Engineer / Project Engineer / Consulting Company</p>	<p>Month 54-60</p>	<p>-</p>

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

Herewith I, the person, whose name is stated below confirm that I am the person authorised to act as representative of the right holder in terms of the resolution submitted with the application. I herewith confirm that the company will provide the amount that will be determined by the Regional Manager in accordance with the prescribed guidelines.



**Mechanisms for monitoring compliance with and performance assessment 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.**

*Table 42: Mechanisms for monitoring compliance with and performance assessment against the EMPR and reporting thereon.*

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
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Operational Phase</li> </ul>	<p><b><u>Socio-Economic Environment / Land Use:</u></b></p> <ul style="list-style-type: none"> <li>◆ Temporary loss of agricultural land earmarked for site camp establishment.</li> <li>◆ Temporary loss of some agricultural land earmarked for invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Invasive prospecting plan and schedule approved by the DMRE.</li> <li>◆ Discuss property access with the landowners.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised.</li> </ul>	<p>Applicable throughout operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Site Establishment</li> <li>◆ Operational Phase</li> </ul>	<p><b><u>Visual Characteristics:</u></b></p> <ul style="list-style-type: none"> <li>◆ Visual intrusion because of site camp.</li> <li>◆ Visual intrusion because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Parking areas for equipment.</li> <li>◆ Good housekeeping practices.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Contain prospecting to the approved boundaries.</li> <li>◆ Ensure the camp site and every sampling site has a neat appearance and is always kept in good condition.</li> <li>◆ Limit vegetation removal and avoid the removal of large trees (&gt;20 cm stem) or vegetation of significance (identified by ECO).</li> <li>◆ Store prospecting equipment neatly in a dedicated area when not in use.</li> <li>◆ Implement concurrent rehabilitation as prospecting progress to limit the visual impact on the aesthetic value of the area.</li> <li>◆ Only strip topsoil immediately prior to the use of a specific area.</li> </ul>	<p>Applicable throughout operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>



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
			<ul style="list-style-type: none"> <li>◆ Rehabilitate all sites to keep the visual impact on the aesthetic value of the area to a minimum.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impacts</li> </ul>	<p><b><u>Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna:</u></b></p> <ul style="list-style-type: none"> <li>◆ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>◆ Potential negative impact on sensitive/protected flora within the footprint.</li> <li>◆ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>◆ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.</li> <li>◆ Potential impact on the declaration of the</li> </ul>	<ul style="list-style-type: none"> <li>◆ Phase two assessment by qualified ecologist and approval of the drilling plan by the DMRE.</li> <li>◆ Pre-clearance go-ahead from ECO.</li> <li>◆ Employee induction meetings.</li> <li>◆ Co-operation agreement with Kolomela regarding Bermolli No 583/5.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Arrange additional fieldwork by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants.</li> <li>◆ Submit the findings of the ecologist, with the drill plan, to the DMRE for approval prior to commencement.</li> <li>◆ Clearly demarcate the prospecting boundaries and contain all operations to the approved area.</li> <li>◆ Declare the area outside the boundaries a no-go area and educate all employees accordingly.</li> <li>◆ Implement an invasive plant species management plan to control weeds</li> </ul>	<p>Applicable throughout operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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
	<p>Kolomela biodiversity offset area.</p>		<p>and invasive plants on denuded areas, topsoil heaps and reinstated areas.</p> <ul style="list-style-type: none"> <li>◆ Should an application for the removal of protected plant species, and/or indigenous plants (1) on large-scale, (2) or on small scale within 100 meters of a river or a public road, be applicable: submit a thorough walk-through report to the relevant competent authorities (DAERL) prior to commencing any earthworks. Ensure that this report comprehensively assess, and list species based on their protection statuses according to the NCNCA, NEMBA: ToPS, and the NFA. It must also include the IUCN Red List status, endemism, and estimate the quantities of each impacted protected species. If possible, conduct the walk-through assessment be during the appropriate season for the area to ensure accurate observation of species presence and habitat conditions, thereby maximizing the effectiveness of the assessment in capturing the full ecological picture.</li> <li>◆ Should Bermolli No 583/5 be a declared Nature Reserve prior to the</li> </ul>	

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
			<p>granting of the prospecting right the Applicant will omit the farm from the prospecting programme.</p> <ul style="list-style-type: none"> <li>◆ Establish the site camps of Bermolli No 583/5 and Engelsdraai No 221/RE on previously disturbed/altered areas.</li> <li>◆ Restrict bulk sampling to a maximum disturbance of 1 ha on Bermolli No 583/5 sited at the area/s where the ecologist deems it necessary.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p><b>Hydrology:</b></p> <ul style="list-style-type: none"> <li>◆ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> <li>◆ Increase in sediment inputs and turbidity due to invasive prospecting.</li> <li>◆ Increase in toxic heavy metal contaminants.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Phase two assessment by qualified hydrologist and approval of the drilling plan by the DMRE.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Arrange a second phase investigation by a qualified hydrologist prior to prospecting of any freshwater ecosystems with a high-moderate sensitivity.</li> <li>◆ Submit the findings of the hydrologist, with the drill plan, to the DMRE for approval prior to commencement.</li> </ul>	<p>Applicable throughout site establishment, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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
			<ul style="list-style-type: none"> <li>◆ Do not allow any activities without the necessary authorisation from the DWS, within a horizontal distance of 100 m from any watercourse or estuary or within a 500 m radius from a delineated boundary of any wetland or pan.</li> <li>◆ Do not establish any site camp in or within 100 m of a watercourse.</li> <li>◆ If a WUA is applicable, adhere to the conditions of the use authorisation.</li> <li>◆ Only abstract water at a registered water source in accordance with the requirements of the authorisation. Use water tally sheets to monitor water use and obtain baseline water quality results for each source and filed for auditing purposes.</li> <li>◆ Upon closure, remove all prospecting related equipment/machinery from the footprint and reinstate the sampled areas to a state determined and approved by the hydrologist.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p><b><u>Air Quality and Noise Ambiance:</u></b></p> <ul style="list-style-type: none"> <li>◆ Dust nuisance because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Dust suppression equipment such as a water car and sprayers on the crusher plant.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control</li> </ul>	<p>Applicable throughout operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> </ul>

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
		<ul style="list-style-type: none"> <li>◆ Signage that clearly reduce the speed on the access roads.</li> </ul>	<p>Officer during the annual environmental audit.</p> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Control the liberation of dust into the surrounding environment using; inter alia, straw, water spraying and/or environmentally friendly dust-allaying agents that contains no PCB's (e.g. DAS products).</li> <li>◆ Ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression.</li> <li>◆ Equip the crusher plant with water sprayers to alleviate dust and remove fines buildup at least weekly from and around the conveyors.</li> <li>◆ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust.</li> <li>◆ Minimise areas devoid of vegetation.</li> <li>◆ Consider weather conditions upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts.</li> <li>◆ Ensure dust generating activities comply with the National Dust Control Regulations, GN No R827</li> </ul>	<ul style="list-style-type: none"> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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
			<p>promulgated in terms of NEM:AQA, 2004 and ASTM D1739 (SANS 1137:2012).</p> <ul style="list-style-type: none"> <li>◆ Implement best practice measures during the stripping of topsoil to minimize potential dust impacts.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p><b><u>Noise Ambiance:</u></b></p> <ul style="list-style-type: none"> <li>◆ Noise nuisance because of invasive prospecting.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Silencers fitted to all project related vehicles, and the use of vehicles that are in road worthy condition in terms of the National Road Traffic Act, 1996.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure that employees and staff conduct themselves in an acceptable manner while on site.</li> <li>◆ No loud music may be permitted at the site camp and/or prospecting areas.</li> <li>◆ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy condition in terms of the National Road Traffic Act, 1996.</li> <li>◆ Implement best practice measures to minimise potential noise impacts.</li> </ul>	<p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>



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<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Cumulative Impact</li> </ul>	<p><b><u>Fauna:</u></b></p> <ul style="list-style-type: none"> <li>◆ Potential impact on fauna within the footprint.</li> <li>◆ Fragmentation of ecosystems affecting safe movement of faunal species.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Toolbox talks to educate employees how to handle fauna that enter the work areas.</li> </ul>	<p><b><u>Role:</u></b></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><b><u>Responsibility:</u></b></p> <ul style="list-style-type: none"> <li>◆ Ensure no fauna is caught, killed, harmed, sold, or played with.</li> <li>◆ Instruct workers to report any animals that may be trapped in the working area.</li> <li>◆ Ensure no snares are set or nests raided for eggs or young.</li> <li>◆ No pets allowed on site.</li> </ul>	<p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<p><b><u>Terrestrial Biodiversity, Conservation Areas, Groundcover and Fauna:</u></b></p> <ul style="list-style-type: none"> <li>◆ Infestation of the prospecting areas with invader plant species.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Designated team to cut or pull out invasive plant species that germinated on site.</li> <li>◆ Herbicide application equipment.</li> </ul>	<p><b><u>Role:</u></b></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul>	<p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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	<ul style="list-style-type: none"> <li>◆ Infestation of the reinstated areas with invader plant species.</li> </ul>		<p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Implement an invasive plant species management plan at the site to ensure the management and control of all species regarded as Category 1a and 1b invasive species in terms of NEM:BA, 2004. Do weed/alien removal on an ongoing basis throughout the life of the prospecting activities.</li> <li>◆ Keep all stockpiles free of invasive plant species.</li> <li>◆ Control declared invader or exotic species on the rehabilitated areas.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<p><b><u>Waste Management:</u></b></p> <ul style="list-style-type: none"> <li>◆ Potential soil contamination associated with littering and/or hydrocarbon spillages.</li> <li>◆ Potential impact associated with litter/hydrocarbon spills left at the prospecting area.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Oil spill kit.</li> <li>◆ Sealed drip trays.</li> <li>◆ Formal waste disposal system with waste registers.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure vehicle maintenance, repairs and services only take place at the workshop and service area in the site camp. If emergency repairs are needed on equipment not able to</li> </ul>	<p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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			<p>move to the workshop, use drip trays. Dispose all waste products removed from the emergency service area (same day) in a closed container/bin at the workshop to ensure proper disposal.</p> <ul style="list-style-type: none"> <li>◆ Provide ablution facilities to all employees. Place the toilet outside the 1:100 year floodline of all watercourses.</li> <li>◆ Ensure that the ablution facilities do not cause any pollution to water sources or pose a health hazard. In addition, ensure that no form of secondary pollution arise from the disposal of refuse or sewage. Address any pollution problems arising from the above immediately.</li> <li>◆ Equip the diesel bowser (if used on site) with a drip tray. Use the drip trays during every refuelling event. Ensure that the nozzle of the bowser rest in a sleeve to prevent dripping after refuelling.</li> <li>◆ Clean drip trays after each use. Do not use dirty drip trays on site.</li> <li>◆ Collect any effluents containing oil, grease or other industrial substances in a suitable receptacle and remove it from the site, either for resale or for</li> </ul>	

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			<p>appropriate disposal at a recognized facility.</p> <ul style="list-style-type: none"> <li>◆ Should spillages occur, such as oil or diesel leaking from a burst pipe, collect the contaminated soil within the first hour of occurrence in a suitable receptacle and removed it to the hazardous waste storage area of the workshop, either for resale or for appropriate disposal at a recognized facility. File proof.</li> <li>◆ Contain general waste in marked, sealable, refuse bins placed at a designated area, to be removed when filled to a registered general waste landfill site.</li> <li>◆ Do not bury or burn waste on the site.</li> <li>◆ Report any significant spillage of chemicals, fuels etc. during the lifespan of the prospecting activities to the Department of Water and Sanitation and other relevant authorities.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<ul style="list-style-type: none"> <li>◆ Potential impact on areas/infrastructure of heritage or cultural concern.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Results of the heritage walk down prior to commencement.</li> <li>◆ Visible beacons indicating the boundary</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control</li> </ul>	<p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> </ul>

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	<ul style="list-style-type: none"> <li>◆ Potential impact on palaeontological aspects.</li> </ul>	<p>of the 30 m buffer areas.</p> <ul style="list-style-type: none"> <li>◆ Contact number of an archaeologist and palaeontologist that can be contacted when a discovery is made on site.</li> <li>◆ Proof that samples of the diatomite of each farm was submitted to a recognised repository.</li> </ul>	<p>Officer during the annual environmental audit.</p> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Arrange a heritage walk down once the sampling sites have been confirmed prior to the commencement of invasive prospecting activities.</li> <li>◆ Keep sampling sites as close as possible to existing roads to minimise the impact on the landscape.</li> <li>◆ Avoid focal points on the landscape like rocky outcrops, caves, or pans as far as possible as these areas could be sensitive from a heritage point of view.</li> <li>◆ Avoid burial sites, memorials, and graves with a 30 m buffer zone.</li> <li>◆ Conduct further palaeontological studies once the impact areas are confirmed.</li> <li>◆ Collect and deposit samples of diatomite from each farm at a recognised repository such as the McGregor Museum in Kimberley, or a palaeontological research institute, and notify SAHRA of what action was taken.</li> <li>◆ Arrange monitoring of the project area by the ECO during the exploration</li> </ul>	<ul style="list-style-type: none"> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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			<p>phase for heritage chance finds, and if chance finds are encountered to implement the Chance Find Procedure for the project.</p> <ul style="list-style-type: none"> <li>• If during the operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.</li> <li>• It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.</li> <li>• The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify SAHRA.</li> <li>• Work may only continue once the go-ahead was issued by SAHRA.</li> </ul>	



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<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<p><b>Hydrology</b></p> <ul style="list-style-type: none"> <li>◆ Erosion of denuded areas.</li> <li>◆ Erosion of roads, vehicle tracks and/or denuded areas.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Storm water management structures such as berms to direct storm- and runoff water around the work area (when needed).</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Divert storm water around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion.</li> <li>◆ Control drainage to ensure that runoff from the prospecting area does not culminate in off-site pollution, flooding or result in damage to storm water discharge points.</li> <li>◆ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable).</li> <li>◆ Collect dirty water and contain it in a system separate from the clean water system.</li> <li>◆ Prevent dirty water from spilling or seeping into clean water systems.</li> </ul>	<p>Applicable throughout site establishment-, operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p><b>Existing Infrastructure:</b></p> <ul style="list-style-type: none"> <li>◆ Deterioration of the access road due to prospecting activities.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Grader to restore the road surface when needed.</li> <li>◆ Speed limit signage.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Divert storm water around the access road to prevent erosion.</li> <li>◆ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas.</li> <li>◆ Repair rutting and erosion of the access road caused as a direct result of the prospecting activities.</li> <li>◆ Overloading of the trucks must be prevented, and proof of load weights must be filed for auditing purposes.</li> <li>◆ Prior to commencement, sign an agreement confirming responsibility towards the movement of employees.</li> <li>◆ Repair/reinstate damages to fences (by prospecting employees). Compensate losses, due to gates left open by prospecting employees.</li> </ul>	<p>Applicable throughout operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>



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			<ul style="list-style-type: none"> <li>◆ Enforce a speed limit of not more than 40 km/h on internal roads and 60 km/h on public roads for the duration of the project.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> <li>◆ Decommissioning Phase</li> </ul>	<p><b>General:</b></p> <ul style="list-style-type: none"> <li>◆ Health and safety risk posed by invasive activities to prospecting employees.</li> <li>◆ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Stocked first aid box.</li> <li>◆ Level 1 certified first aider.</li> <li>◆ All appointments in terms of the Mine Health and Safety Act, 1996.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Ensure there is adequate ablution facilities and water for human consumption available on site.</li> <li>◆ Provide workers with the correct personal protection equipment (PPE) as required by law.</li> <li>◆ Ensure all operations comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996).</li> <li>◆ Daily cover drill-holes, and barricade pits/trenches even if prospecting will continue the following day. Upon</li> </ul>	<p>Applicable throughout operational-, and decommissioning phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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			closure, seal and cap all boreholes and backfill pits/trenches as prescribed in the rehabilitation plan.	
Invasive Prospecting (Phase 3 & 5): Operational Phase	<p><b>General:</b></p> <ul style="list-style-type: none"> <li>Presence of prospector negatively affecting safety and security of the property.</li> </ul>	<ul style="list-style-type: none"> <li>Signage restricting entry to the prospecting area.</li> <li>Toolbox talks regarding safety and security.</li> <li>Community based discussion forums such as Whatsapp groups.</li> <li>Alcohol test equipment.</li> <li>Signage banning alcohol, drugs, firearms.</li> <li>Attendance- and vehicle/machinery registers.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>Screen employees to be appointed prior to inception of contract.</li> <li>Do not allow employees to reside within the prospecting area.</li> <li>Educate prospecting employees to report suspicious looking person/s and/or matters to site management.</li> <li>Maintain direct communication between the prospector and the landowners for the duration of the site establishment-, operational, and decommissioning phases.</li> <li>Do not enter negotiations with farm employees.</li> </ul>	Applicable throughout operational-, and decommissioning phases. <ul style="list-style-type: none"> <li>Daily compliance monitoring by site management.</li> <li>Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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			<ul style="list-style-type: none"> <li>◆ Restrict prospecting to normal business hours unless otherwise authorised by the landowner.</li> <li>◆ Ban alcohol and/or prohibited drugs from site.</li> <li>◆ Maintain attendance registers, and pre-register all prospecting vehicles/machinery with the landowner/security.</li> <li>◆ Do not allow firearms on site.</li> </ul>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Operational Phase</li> </ul>	<p><b>General:</b></p> <ul style="list-style-type: none"> <li>◆ Increased fire risk during operational phase.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Fire beaters and - extinguishers.</li> <li>◆ Toolbox talks and emergency preparedness plan.</li> <li>◆ Contact number of the fire association/-brigade.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Do not permit open fires on any of the sampling sites. Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas at the site camp,</li> <li>◆ Prevent employees from setting fires randomly outside designated areas.</li> <li>◆ Do not store fuel or chemicals under trees.</li> </ul>	<p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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			<ul style="list-style-type: none"> <li>◆ Do not store gas in the same storage area as liquid fuel.</li> <li>◆ Designate smoking to specific areas (&gt;3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds.</li> <li>◆ Ensure Work Site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site.</li> <li>◆ Implement specific fire safety precautions during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any "HOT WORK" is undertaken e.g. welding, grinding, gas cutting etc,</li> <li>◆ Report any fires noted on site to the responsible SHE rep and/or fire officer.</li> <li>◆ Implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases.</li> <li>◆ In the event of large fires ensure that all personnel assemble at a safe assembly point to be transported from</li> </ul>	

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			<p>site. Inform the fire department or local fire watch of the fire to ensure that the fire is brought under control as soon as possible.</p>	
<p>Invasive Prospecting (Phase 3 &amp; 5):</p> <ul style="list-style-type: none"> <li>◆ Site Establishment Phase</li> <li>◆ Operational Phase</li> </ul>	<p><b>Geology:</b></p> <ul style="list-style-type: none"> <li>◆ Topsoil Management.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Earthmoving equipment to strip, stockpile and spread the topsoil.</li> <li>◆ Stormwater control infrastructure.</li> <li>◆ Designated team to control weeds/invaser plant species that may germinate on the topsoil heaps.</li> <li>◆ Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.</li> </ul>	<p><u>Role:</u></p> <ul style="list-style-type: none"> <li>◆ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.</li> <li>◆ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.</li> </ul> <p><u>Responsibility:</u></p> <ul style="list-style-type: none"> <li>◆ Strip and stockpile the upper 300 mm of the soil before site camp establishment and/or prospecting.</li> <li>◆ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process.</li> <li>◆ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan prospecting in such a way that topsoil is stockpiled for the minimum possible time.</li> </ul>	<p>Applicable throughout site establishment-, and operational phases.</p> <ul style="list-style-type: none"> <li>◆ Daily compliance monitoring by site management.</li> <li>◆ Annual compliance monitoring of site by an Environmental Control Officer.</li> </ul>

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
			<ul style="list-style-type: none"> <li>◆ Place the topsoil heaps on a levelled area within the prospecting footprint. Do not stockpile topsoil in undisturbed areas.</li> <li>◆ Protect topsoil stockpiles against losses by water- and wind erosion. Position stockpiles so as not to be vulnerable to erosion by wind and water. Establish plants (weeds or a cover crop) on the stockpiles to prevent erosion.</li> <li>◆ Ensure that topsoil heaps do not exceed 2 m.</li> <li>◆ Keep temporary topsoil stockpiles free of invasive plant species.</li> <li>◆ Divert storm- and runoff water around the stockpile area to prevent erosion.</li> <li>◆ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site.</li> <li>◆ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season.</li> <li>◆ Plant a cover crop immediately after spreading topsoil to stabilise the soil and protect it from erosion. Fertilise the cover crop for optimum</li> </ul>	



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
			<p>production. Rehabilitation extends until the first cover crop is well established.</p> <ul style="list-style-type: none"> <li>◆ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.</li> </ul>	

**l) Indicate the frequency of the submission of the performance assessment report.**

An Environmental Audit Report in accordance with Appendix 7 as prescribed in Regulation 34 of the EIA Regulations, 2014 (as amended) will annually be submitted to DMRE for compliance monitoring purposes or in accordance with the frequency stipulated by the Environmental Authorisation.

**m) Environmental Awareness Plan**

**i) Manner in which the Applicant intends to inform his or her employees of any environmental risk which may result from their work.**

Once the prospecting right application was approved a copy of the FEIAR & EMPR will be handed to the site manager for his perusal. An induction meeting will be held with all the site workers to inform them of the Basic Rules of Conduct regarding the environment.

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

The operations manager must ensure that he/she understands the EIAR & EMPR document and its requirement and commitments before any prospecting commences. An Environmental Control Officer needs to check compliance of the prospecting activity to the management programmes described in the EMPR.

The following list represents the basic steps towards environmental awareness, which all participants in this project must consider whilst performing their tasks.

◆ **Site Management**

- ◆ Stay within boundaries of site – do not enter adjacent properties.
- ◆ Keep tools and material properly stored.
- ◆ Smoke only in designated areas.
- ◆ Use toilets provided – report full or leaking toilets.

◆ **Water Management and Erosion**

- ◆ Check that rainwater flows around work areas and are not contaminated.
- ◆ Report any erosion.
- ◆ Check that dirty water is kept from clean water.

◆ **Waste Management**

- ◆ Take care of your own waste.



- ▶ Place waste in containers and always close lid.
- ▶ Don't burn waste.
- ▶ Pick-up any litter laying around.

◆ **Hazardous Waste Management (Petrol, Oil, Diesel, Grease)**

- ▶ Never mix general waste with hazardous waste.
- ▶ Use only sealed, non-leaking containers.
- ▶ Keep all containers closed and store only in approved areas.
- ▶ Always put drip trays under vehicles and machinery.
- ▶ Empty drip trays after rain.
- ▶ Stop leaks and spills, if safe.
  - ✓ Keep spilled liquids moving away.
  - ✓ Immediately report the spill to the site manager/supervision.
  - ✓ Locate spill kit/supplies and use to clean-up, if safe.
  - ✓ Place spill clean-up wastes in proper containers.
  - ✓ Label containers and move to approved storage area.

◆ **Discoveries**

- ▶ Stop work immediately.
- ▶ Notify site manager/supervisor.
- ▶ Includes – Archaeological finds, Cultural artefacts, Contaminated water, Pipes, Containers, Tanks and drums, Any buried structures.

◆ **Air Quality**

- ▶ Wear protection when working in very dusty areas.
- ▶ Implement dust control measures:
  - ✓ Water all roads and work areas according to instructions.
  - ✓ Minimize handling of material.
  - ✓ Obey speed limit and cover trucks.

◆ **Driving and Noise**

- ▶ Use only approved access roads.
- ▶ Respect speed limits.
- ▶ Only use turn-around areas – no crisscrossing through undisturbed areas.
- ▶ Avoid unnecessary loud noises.
- ▶ Report or repair noisy vehicles.

◆ **Vegetation and Animal life**

- ▶ Do not remove any plants or trees without approval of the site manager.
- ▶ Do not collect firewood.
- ▶ Do not catch, kill, harm, sell or play with any animal, reptile, bird, or amphibian on site.
- ▶ Report any animal trapped in the work area.
- ▶ Do not set snares or raid nests for eggs or young.

◆ **Fire Management**

- ▶ Do not light any fires on site, unless contained in a drum at demarcated area.
- ▶ Put cigarette butts in a rubbish bin.
- ▶ Know the position of firefighting equipment.
- ▶ Report all fires.
- ▶ Don't burn waste or vegetation.

**n) Specific information required by the Competent Authority**

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

The Applicant undertakes to annually review and update the financial provision calculation, upon which it will be submitted to DMRE for review and approved as being sufficient to cover the environmental liability at the time and for closure of the prospected areas at that time.

## 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&AP's;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant;   
and
- d) the acceptability of the project in relation to the finding of the assessment and level of mitigation proposed;

A handwritten signature in cursive script, appearing to read 'Gaucho'.

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Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

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Name of Company:

01 October 2024

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Date:



### 3. UNDERTAKING

I,.....*Lionel Koster*.....the undersigned and duly authorised thereto by.....*K2022641005 (SOUTH AFRICA) (Pty) Ltd*.....

Company / ~~Closed Corporation~~ / Municipality or Council  
(Delete whichever is not applicable)

hereby undertake to implement all the aspects contained in the ~~BAR and EMPR~~ / EIA and EMPR and accept full responsibility therefore.  
(Delete whichever is not applicable)

SIGNED at ..... this ..... day ..... 2024

#### **FINAL DOCUMENT TO BE SIGNED BY APPLICANT**

\_\_\_\_\_  
SIGNATURE

#### **WITNESSES:**

1.....

2.....

\_\_\_\_\_  
Official use

### 4. APPROVAL

Approved in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998), as amended.

SIGNED at ..... this ..... day ..... 2024

\_\_\_\_\_  
**REGIONAL MANAGER**  
**NORTHERN CAPE**

Undertaking/eg

**-END-**

# APPENDIX A1

## REGULATION 42 PROSPECTING PLAN

## APPENDIX A2

# REGULATION 2.2 PROSPECTING PLAN

# APPENDIX B1

## LOCALITY AND LAND USE MAP – DEVON NO 277 & BOTHA NO 313

**APPENDIX B2**

**LOCALITY AND LAND USE MAP –**

**BERMOLLI NO 583, ENGELSDRAAI NO**

**224, WITDRAAI NO 204,**

**VAALWATER NO 84**



# **APPENDIX B3**

## **LOCALITY AND LAND USE MAP – FARM NO 570 (ZAAI PLAATS)**

# APPENDIX C

## REHABILITATION PLAN

# APPENDIX D1

## PRELIMINARY SITE PLAN – BERMOLLI

### NO 583/5

# APPENDIX D2

## PRELIMINARY SITE PLAN – ENGELSDRAAI NO 221/RE

# APPENDIX D3

## PRELIMINARY SITE PLAN – WITDRAAI

### NO 204/1

# APPENDIX D4

## PRELIMINARY SITE PLAN – VAALWATER NO 84/1 & RE

**APPENDIX D5**

**PRELIMINARY SITE PLAN –**

**FARM NO 570**

# APPENDIX E

## WETLAND / AQUATIC AND TERRESTRIAL DESKTOP SENSITIVITY & FAMILIARISATION



# APPENDIX F

## HERITAGE IMPACT ASSESSMENT

# APPENDIX G

## PALAEONTOLOGICAL IMPACT ASSESSMENT

# APPENDIX H

## DIATOMITE LITERATURE REVIEW & TARGET GENERATION

# APPENDIX I1

## COMMENTS AND RESPONSE REPORT

# APPENDIX I2

## PROOF OF PUBLIC PARTICIPATION

# APPENDIX J

## SUPPORTING IMPACT ASSESSMENT



**ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, herewith please receive an environmental impact statement that summarises the impact that the proposed project may have on the environment after the management and mitigation of impacts have been considered, with specific reference to types of impact, duration of impacts, likelihood of potential impacts occurring and the significance of impacts.

<b><u>ENVIRONMENTAL IMPACT STATEMENT</u></b>			
<b>FINAL PROJECT PROPOSAL</b>			
<b><u>TYPE OF IMPACT</u></b>	<b><u>DURATION</u></b>	<b><u>LIKELIHOOD</u></b>	<b><u>SIGNIFICANCE</u></b>
<p><u>Site Establishment Phase:</u></p> <ul style="list-style-type: none"> <li>◆ Temporary loss of agricultural land earmarked for site camp establishment.</li> <li>◆ Visual intrusion because of site camp.</li> <li>◆ Work opportunities for 15 – 20 community members (<b>Positive Impact</b>).</li> <li>◆ Upgrading of access roads during invasive prospecting (<b>Positive Impact</b>).</li> </ul>	<p>Duration of site establishment phase (±2-3 months)</p>	<p><b>Definite</b></p> <p><b>Possible</b></p> <p><b>Definite</b></p> <p><b>Definite</b></p>	<p><b>Low-Medium Concern</b></p> <p><b>Low Concern</b></p> <p><b>Medium-High (+)</b></p> <p><b>Low-Medium (+)</b></p>
<p><u>Operational Phase:</u></p> <ul style="list-style-type: none"> <li>➢ Temporary loss of some agricultural land earmarked for invasive prospecting.</li> <li>➢ Visual intrusion because of invasive prospecting.</li> <li>➢ Potential negative impact on the identified CBA and/or ESA areas.</li> <li>➢ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.</li> <li>➢ Increase in sediment inputs and turbidity due to invasive prospecting.</li> <li>➢ Increase in toxic heavy metal contaminants.</li> <li>➢ Dust nuisance because of invasive prospecting.</li> <li>➢ Noise nuisance because of invasive prospecting.</li> <li>➢ Potential impact on sensitive/protected flora within the footprint area.</li> <li>➢ Potential impact on fauna within the footprint area.</li> <li>➢ Infestation of the prospecting areas with invader plant species.</li> </ul>	<p>Duration of operational phase (Phase 3 &amp; 5)</p>	<p><b><u>LIKELIHOOD</u></b></p> <p><b>Definite</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Possible</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p>	<p><b><u>SIGNIFICANCE</u></b></p> <p><b>Low-Medium Concern</b></p> <p><b>Low-Medium Concern</b></p> <p><b>Low-Medium Concern</b></p> <p><b>Medium Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low-Medium Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p>

**ENVIRONMENTAL IMPACT STATEMENT**

**FINAL PROJECT PROPOSAL**

<ul style="list-style-type: none"> <li>➤ Potential soil contamination associated with littering and/or hydrocarbon spillages.</li> <li>➤ Potential impact on areas/infrastructure of heritage or cultural concern.</li> <li>➤ Potential impact on palaeontological aspects.</li> <li>➤ Erosion of denuded areas.</li> <li>➤ Deterioration of access roads due to prospecting activities.</li> <li>➤ Health and safety risk posed by invasive activities to prospecting employees.</li> <li>➤ Presence of prospector negatively affecting safety and security of the property.</li> <li>➤ Increased fire risk during operational phase.</li> <li>➤ Upgrading of access roads during invasive prospecting (<b>Positive Impact</b>).</li> </ul>		<p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Definite</b></p> <p><b>Low Possibility</b> <b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Definite</b></p>	<p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Medium-High Concern</b></p> <p><b>Low Concern</b> <b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Medium-High (+)</b></p>
<p><u>Decommissioning Phase:</u></p> <ul style="list-style-type: none"> <li>➤ Safety risk due to uncapped boreholes and/or unrehabilitated bulk sampling pits/trenches.</li> <li>➤ Potential impact associated with litter/hydrocarbon spillages left at the prospected areas.</li> <li>➤ Erosion of roads, vehicle tracks and/or denuded areas.</li> <li>➤ Infestation of the reinstated areas with invader plant species.</li> <li>➤ Return of the site camp and prospected areas to agricultural use (<b>Positive Impact</b>).</li> </ul>	<p>Duration of decommissioning phase (±2 months)</p>	<p><b><u>LIKELIHOOD</u></b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Definite</b></p>	<p><b><u>SIGNIFICANCE</u></b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Medium-High (+)</b></p>
<p><u>Cumulative Impacts:</u></p> <ul style="list-style-type: none"> <li>➤ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected.</li> <li>➤ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.</li> <li>➤ Fragmentation of ecosystems affecting safe movement of faunal species.</li> </ul>	<p>Duration of operational phase (Phase 3 &amp; 5)</p>	<p><b><u>LIKELIHOOD</u></b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p> <p><b>Low Possibility</b></p>	<p><b><u>SIGNIFICANCE</u></b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p> <p><b>Low Concern</b></p>



**ENVIRONMENTAL IMPACT STATEMENT**

**FINAL PROJECT PROPOSAL**

<ul style="list-style-type: none"> <li>➤ Potential impact on the declaration of the Kolomela biodiversity offset area.</li> <li>➤ Compensation of landowners during operational phase. <b>(Positive Impact)</b></li> </ul>		<p><b>Possible</b></p> <p><b>Definite</b></p>	<p><b>Medium Concern</b></p> <p><b>Medium-High (+)</b></p>
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# APPENDIX K

## INVASIVE PLANT SPECIES MANAGEMENT PLAN

# APPENDIX L

## PHOTOGRAHPS OF THE STUDY AREA

# APPENDIX M

## CV AND EXPERIENCE OF EAP