PROPOSED PROSPECTING RIGHT OVER VARIOUS PROPERTIES IN THE KURUMAN, BARKLY WEST, HAY, AND HOPETOWN ADMINISTRATIVE DISTRICTS OF THE NORTHERN CAPE

DRAFT BASIC ASSESSMENT REPORT

MAY 2024

DEPARTMENTAL REFERENCE NUMBER:
NC 30/5/1/1/2/13854 PR

PREPARED FOR:

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EXECUTIVE SUMMARY

The Applicant, Strata Africa Exploration (Pty) Ltd, applied for a prospecting right (PR) (without bulk sampling), and environmental authorisation (EA) for lithium (Li), lead (Pb), copper (Cu), zinc (Zn), and sulphides over 66 107.1283 ha that extends across the properties listed in Table 1 within the Kuruman, Barkly West, Hay, and Hopetown Administrative Districts of the Northern Cape.

Should the PR be issued, the proposed project will comprise of seven phases divided into non-invasive and invasive prospecting (Table 4). The targeting of all drilling 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.

Outcome of Project Alternatives

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

The project proposal was amended following a remote sensing exercise to target the farms with the greatest mineral potential. Upon approval of the PR, the Applicant will conduct site visits on all the farms (excluding Hartebeestdale No 564 unless approved by the Minster of DFFE) to confirm and ground truth the presence of base metal mineralisation. If mineralisation is confirmed, invasive prospecting will target the farms/areas with promising results. Presently it is proposed that the farms Mahura Muthla No 198, Mora Schuba No 201, Kogelbeen No 44, and Banghoek No 17 will be targeted.

b) Type of activity to be undertaken.

The project proposal is to prospect the area without bulk sampling.

c) Design and layout of the activity.

The likelihood of invasive prospecting of the earmarked farms, as well as the design and layout of the drill plan will be based on the results of non-invasive prospecting phases. However, presently the probability of farms being subjected to invasive prospecting was based on the remote sensing results, where areas with a “High” mineral potential were identified as the most likely targets. Once the drill plan is available, borehole locations will first be assessed by a

qualified ecologist and hydrologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

d) Technology to be used in the activity.

Air drills and diamond drill rigs will be used for core drilling. Geophysical equipment will be needed for ground electro-magnetic, magnetic and gravity surveys. Although sample collection will require various mechanical equipment, the process do not require highly specialised technology as secondary processing and metallurgical testing will occur off-site.

e) Operational aspects of the activity.

The project allows some flexibility in terms of when, where, and how the sampling and surveying is conducted. 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 has 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. 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 Hartebeestdale No 564 unless prospecting of this farm is also approved by the DFFE Minister.

Public Participation Process

The relevant landowners, stakeholders and I&AP's will be 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 DBAR (until 07 June 2024) will also be distributed. The comments received on the DBAR will be incorporated into the final Basic Assessment Report (FBAR) to be submitted to the DMRE for consideration.

Basic Assessment Report:

The basic 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 entail the following:

a) Land Use

The land capability of the farms Mahura Muthla No 198, Mora Schuba No 201, Kogelbeen No 44 and Banghoek No 17 (presently earmarked for invasive prospecting) range between Low and Medium. The farms are mainly used for grazing. 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 placed on sensitive areas. Once rehabilitated, the drill sites will again be available for agricultural use.

b) Topography

The prospecting activities will not impact the topography of the area as the project does not require bulk sampling. All boreholes will be capped, and the trenches will be refilled after sampling. Should the mitigation measures be implemented, the activity will have no residual impact on the topography.

c) Visual Characteristics

The area of disturbance is expected to be ±400 m² per drill site 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 significance once the mitigation measures are implemented.

d) Air and Noise Quality

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 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.

e) Geology and Soil

The remote sensing study suggests that the following farms hold the greatest potential for Pb, Zn and Cu base metal mineralisation.

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Hartebeestdale No 564;
- Kogelbeen No 44; and
- Banghoek No 17.

f) Hydrology

Eco-Pulse (hydrologist) recommended that the identified freshwater ecosystems (Figure 129 – 135) be avoided irrespective of their sensitivity and ecosystem threat status. Presently, an aquatic impact buffer of 40 m is recommended. Once the invasive prospecting programme (drill 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 drill plan, by the DMRE prior to commencement.

g) Groundcover, Fauna, and Biodiversity Conservation

The initial sensitivity layers created for terrestrial ecosystems (Figure 129 – 135) are crucial for planning purposes. It is imperative to avoid sensitive 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 the ecologist) at selected prospecting sites to refine the identified sensitivities. The findings of the second phase investigation must be approved, with the drill plan, by the DMRE prior to commencement.

h) Cultural and Heritage Environment

The desktop study provides 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, based on SAHRA's approval. Once the drill sites have been confirmed these areas have to 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.

i) 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 drill sites, will need to be developed/upgraded in agreement with the landowner. Presently it is not expected that the proposed activity will impact on other existing infrastructure.

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 1 472 552.00.

LIST OF ABBREVIATIONS

CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
Cu	Copper
DAERL	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
DBAR	Draft Basic Assessment Report
DD	Diamond Drilling
DFFE	Department of Forestry, Fisheries, and the Environment
DLM	Dikgatlong Local Municipality
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPR	Environmental Management Programme
EMF	Environmental Management Framework
ESA	Ecological Support Areas
FBAR	Final Basic Assessment Report
FBDM	Frances Baard Local Municipality
FEL	Front-end-loader
FEPA	Freshwater Ecosystem Priority Area
FSA	Fish Support Area
GPS	Global Positioning System
GSLM	Ga-Segonyana Local Municipality
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
JMM	Joe Morolong Local Municipality
JTGDM	John Taolo Gaetsewe District Municipality
Li	Lithium
LKNR	Lower Kuruman Native Reserve
MHSA	Mine Health and Safety Act, 1996 (Act No 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)

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:LAA	National Environmental Management Laws Amendment Act, 2022 (Act No 2 of 2022)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)
NEMA	National Environmental Management Act, 1998 (Act No 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No 25 of 1999)
NPAES	National Protected Area Expansion Strategy
NRTA	National Road Traffic Act, 1996 (Act No 25 of 1999)
NWA	National Water Act, 1998 (Act No 36 of 1998)
OHSA	Occupational Health and Safety Act, 1993 (Act No 85 of 1993)
Pb	Lead
PCB's	Polychlorinated Biphenyls
PCO	Pest Control Officer
PES	Present Ecological State
PKSDM	Pixley Ka Seme District Municipality
POC	Potential Occurrence
PPE	Personal Protection Equipment
PR	Prospecting Right
PSDM	Pixley ka Seme District Municipality
PSM	Palaeontological Sensitivity Map
RAB	Rotary air blast
RC	Reverse Circulation
SAHRA	South African Heritage Resources Agency
SAMBF	South African Mining and Biodiversity Forum
SAMRAD	South African Mining Mineral Resources Administration System
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SCC	Species of Conservation Concern
SLM	Siyancuma Local Municipality
SWMA	Sub-Water Management Area
TLM	Tsantsabane Local Municipality
WMA	Water Management Area
ZFMDM	ZF Mgcawu District Municipality
ZN	Zinc

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

NAME OF APPLICANT:	Strata Africa Exploration (Pty) Ltd
TEL NO:	078 045 0316
FAX NO:	N/A
POSTAL ADDRESS:	Postnet Suite 356, Private Bag X15, Somerset West
PHYSICAL ADDRESS:	Suite 2.1 On the Greens, Golf Village, De Beers Avenue, Somerset West
FILE REFERENCE NUMBER SAMRAD:	NC 30/5/1/1/2/13854 PR

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 29 of 2002) as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;

(b) identify the alternatives considered, including the activity, location, and technology alternatives;

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:

  (i) the nature, signification, consequence, extent, duration, and probability of the impacts occurring to; and

  (ii) the degree to which these impacts –

    (aa) can be reversed;

    (bb) may cause irreplaceable loss of resources; and

    (cc) can be managed, avoided or mitigated;

(e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –

  (i) identify and motivate a preferred site, activity and technology alternative;

  (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and

  (iii) identify residual risks that need to be managed and monitored.

PART A

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

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 must appoint an independent Environmental Assessment Practitioner (EAP) to undertake the environmental impact assessment (EIA) of any activities regulated in terms of the Act. Strata Africa Exploration (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 declares its independence as required by the EIA Regulations, 2014 (as amended).

i) Details of the EAP

Name of the Practitioner:	Ms Christine Fouché (Senior Environmental Specialist)
Tel No.:	021 851 2673
Fax No.:	086 546 0579
E-mail address:	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 cirriculum vitae with proof of expertise is attached as Appendix J.

(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 project attached as Appendix J.

b) Location of the overall Activity.

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: Location of the prospecting area.

Farm Name:	1. Lower Kuruman Native Reserve No 219 2. Portion 1 of the farm Edgehill No 194 3. Portion 2 of the farm Edgehill No 194 4. Portion 5 of the farm Edgehill No 194 5. Remaining Extent of the farm Edgehill No 194 6. Portion 3 of the farm Alphen No 442 7. Portion 4 of the farm Alphen No 442 8. Portion 5 of the farm Alphen No 442 9. Portion 6 of the farm Alphen No 442 10. Portion 7 of the farm Alphen No 442 11. Remaining Extent of the farm Alphen No 442 12. Portion 1 of the farm Mahura Muthla No 198 13. Portion 2 of the farm Mahura Muthla No 198 14. Portion 3 of the farm Mahura Muthla No 198 15. Remaining Extent of the farm Mahura Muthla No 198 16. Portion 1 of the farm Mora Schuba No 201 17. Portion 2 of the farm Mora Schuba No 201 18. Remaining Extent of the farm Mora Schuba No 201 19. Portion 1 of the farm Kungkung No 123 20. Portion 2 of the farm Kungkung No 123 21. Portion 3 of the farm Kungkung No 123 22. Remaining Extent of the farm Kungkung No 123 23. Portion 1 of the farm Seduall 124 24. Portion 2 of the farm Seduall 124 25. Portion 3 of the farm Seduall 124 26. Remaining Extent of the farm Seduall 124 27. Portion 1 of the farm Boland No 133 28. Portion 2 of the farm Boland No 133 29. Portion 3 of the farm Boland No 133 30. Portion 4 of the farm Boland No 133 31. Portion 5 of the farm Boland No 133 32. Portion 6 of the farm Boland No 133 33. Portion 7 of the farm Boland No 133 34. Portion 8 of the farm Boland No 133 35. Portion 9 of the farm Boland No 133 36. Portion 10 of the farm Boland No 133 37. Portion 11 of the farm Boland No 133 38. Portion 12 of the farm Boland No 133

	39. Portion 13 of the farm Boland No 133 40. Portion 14 of the farm Boland No 133 41. Portion 15 of the farm Boland No 133 42. Portion 16 of the farm Boland No 133 43. Portion 17 of the farm Boland No 133 44. Portion 20 of the farm Boland No 133 45. Portion 21 of the farm Boland No 133 46. Portion 23 of the farm Boland No 133 47. Portion 24 of the farm Boland No 133 48. Portion 25 of the farm Boland No 133 49. Portion 26 of the farm Boland No 133 50. Remaining Extent of the farm Boland No 133 51. Helvetia No 126 52. Brandziekfontein No 124 53. Portion 1 of the Farm No 123 (Toekoms) (Toekoms) 54. Remaining Extent of Farm No 123 (Toekoms) (Toekoms) 55. Portion 1 of the farm Hartebeestdale No 564 56. Remaining Extent of the farm Hartebeestdale No 564 57. Portion 1 of the farm Kogelbeen No 44 58. Portion 2 of the farm Kogelbeen No 44 59. Portion 3 of the farm Kogelbeen No 44 60. Remaining Extent of the farm Kogelbeen No 44 61. Remaining Extent of the farm Banghoek No 17
Application area (Ha)	66 107.1283 ha
Magisterial district:	➢ Barkly West, ➢ Hay, ➢ Hopetown, and ➢ Kuruman.
Distance and direction from the nearest town	The earmarked portion on the Lower Kuruman Native Reserve No 219 is ±23 km north of Kuruman along the R31. Farms Edgehill No 194 and Alphen No 442 are ±6 km south of Kuruman when travelling along the R31. Farms Mora Schuba No 201, Mahura Muthla No 198, Kungkung No 123, Seduall No 124, and Boland No 133 lays ±50 km east of Kuruman when travelling on the R372. Farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (Toekoms) are ±60 km sout-east of Kuruman when travelling along the R31. The farms Hartebeestdale No 564 and Kogelbeen No 44 are ±23 km north-east of Griekwastad.

	The farm Banghoek No 17 is ±47 km south-west of Douglas when travelling along the R357.
21 digit Surveyor General Code for each farm portion	1. C04100000000021900000 2. C04100000000019400001 3. C04100000000019400002 4. C04100000000019400005 5. C04100000000019400000 6. C04100000000044200003 7. C04100000000044200004 8. C04100000000044200005 9. C04100000000044200006 10. C04100000000044200007 11. C04100000000044200000 12. C04100000000019800001 13. C04100000000019800002 14. C04100000000019800003 15. C04100000000019800000 16. C04100000000020100001 17. C04100000000020100002 18. C04100000000020100000 19. C04100000000012300001 20. C04100000000012300002 21. C04100000000012300003 22. C04100000000012300000 23. C04100000000012400001 24. C04100000000012400002 25. C04100000000012400003 26. C04100000000012400000 27. C04100000000013300001 28. C04100000000013300002 29. C04100000000013300003 30. C04100000000013300004 31. C04100000000013300005 32. C04100000000013300006 33. C04100000000013300007 34. C04100000000013300008 35. C04100000000013300009 36. C04100000000013300010 37. C04100000000013300011 38. C04100000000013300012 39. C04100000000013300013 40. C04100000000013300014 41. C04100000000013300015 42. C04100000000013300016 43. C04100000000013300017

	44. C04100000000013300020 45. C04100000000013300021 46. C04100000000013300023 47. C04100000000013300024 48. C04100000000013300025 49. C04100000000013300026 50. C04100000000013300000 51. C04100000000012600000 52. C04100000000012400000 53. C00700000000012300001 54. C00700000000012300000 55. C04100000000056400001 56. C04100000000056400000 57. C04100000000004400001 58. C04100000000004400002 59. C04100000000004400003 60. C04100000000004400000 61. C04100000000001700000

c) Locality map

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

The requested map is presented in the form of the Regulation 42 Project Map compiled in terms of the Mining Titles Registration Act, 1967, and the Regulation 2.2 Project Map compiled in terms of the MPRDA and respectively attached as Appendix A1 and A2 to this document.

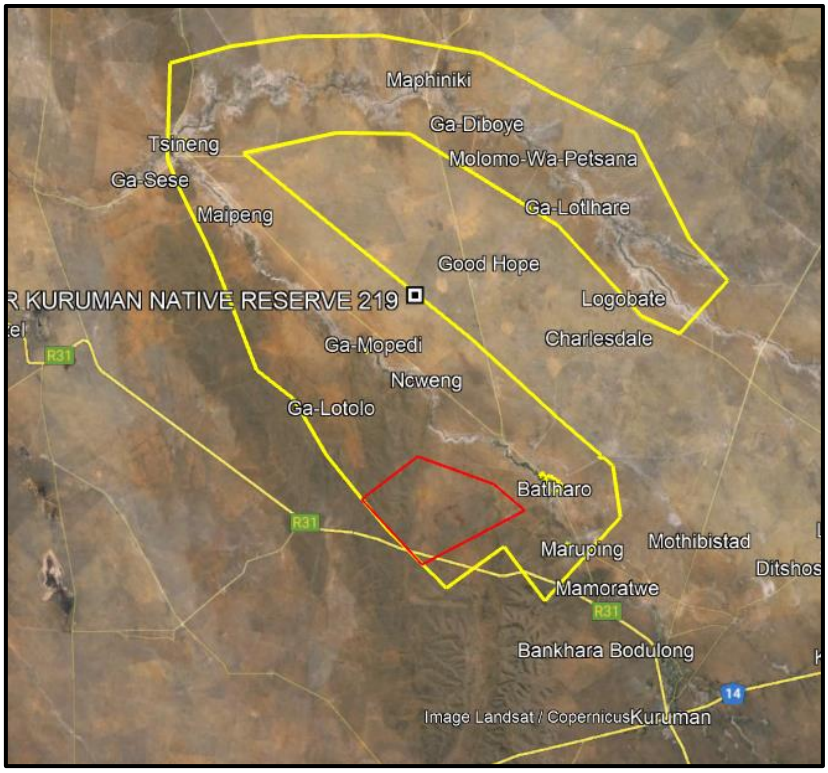


Figure 1: Satellite view showing the proposed prospecting right footprint over a portion (red polygon) of the farm Lower Kuruman Native Reserve No 219 (yellow polygon). (Image obtained from Google Earth).

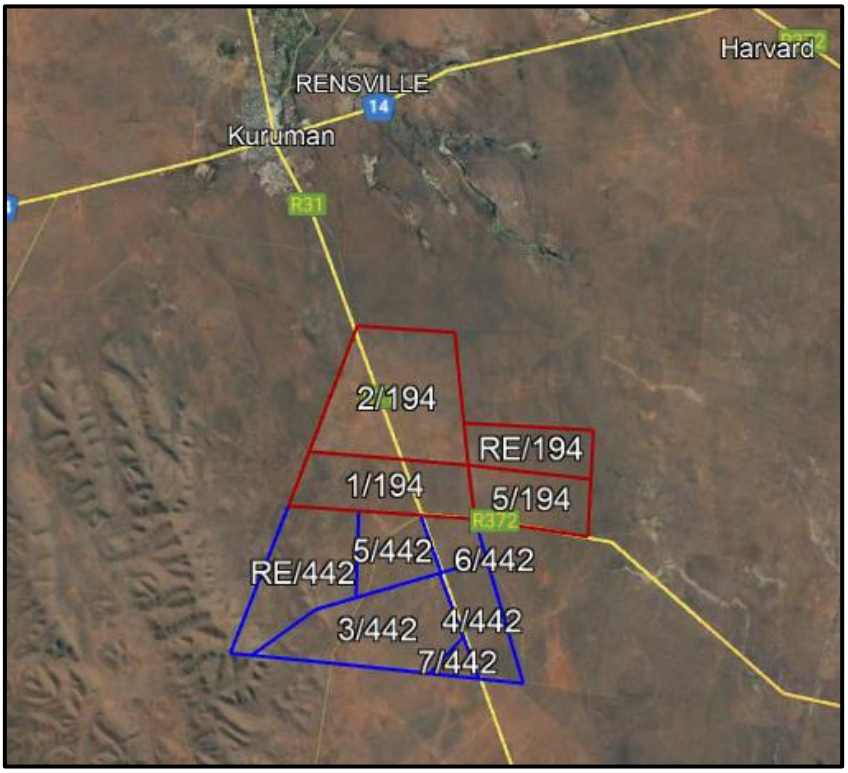


Figure 2: Satellite view showing the proposed prospecting right footprint over the farms Edgehill No 194 and Alphen No 442. (Image obtained from Google Earth).

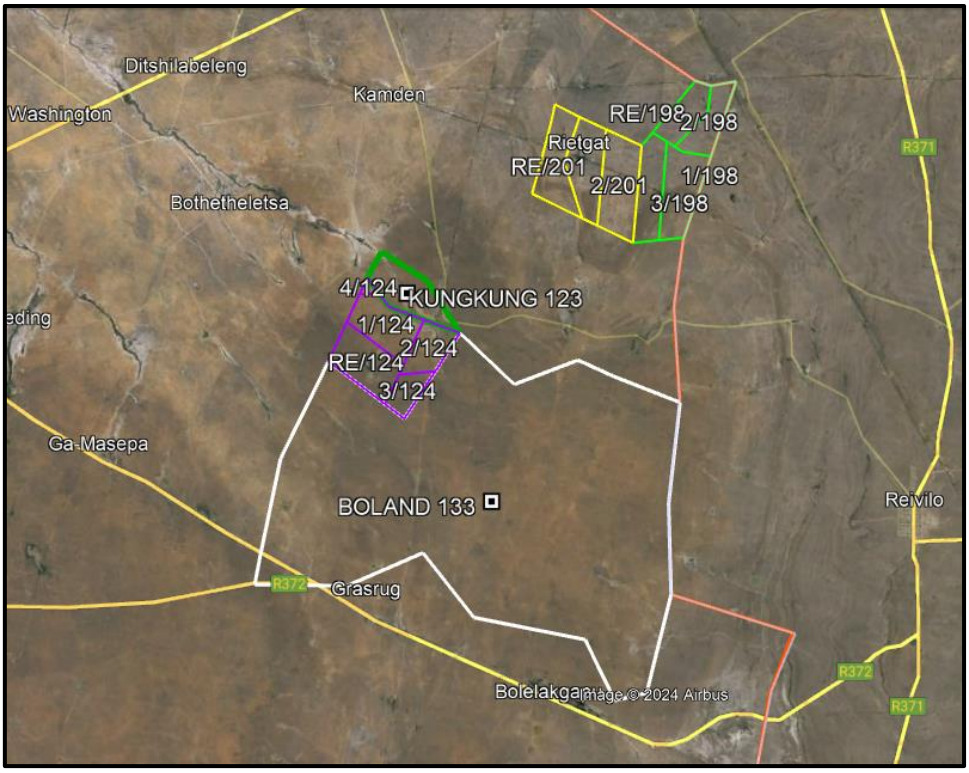


Figure 3: Satellite view showing the proposed prospecting right footprint over the farms Mora Schuba No 201, Mahura Muthla No 198, Kungkung No 123, Seduall No 124, and Boland No 133. (Image obtained from Google Earth).

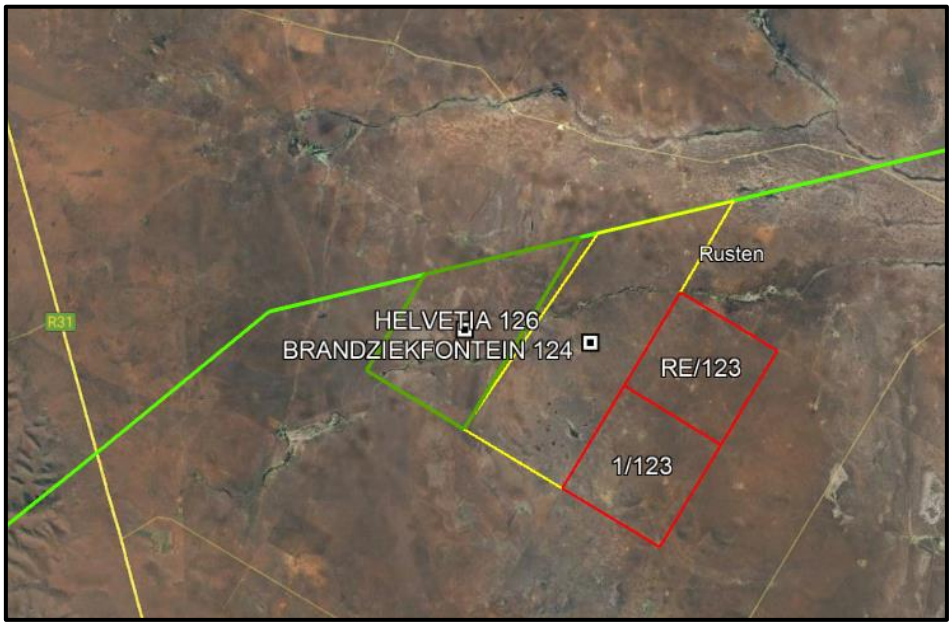


Figure 4: Satellite view showing the proposed prospecting right footprint over the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (Toekoms). (Image obtained from Google Earth).

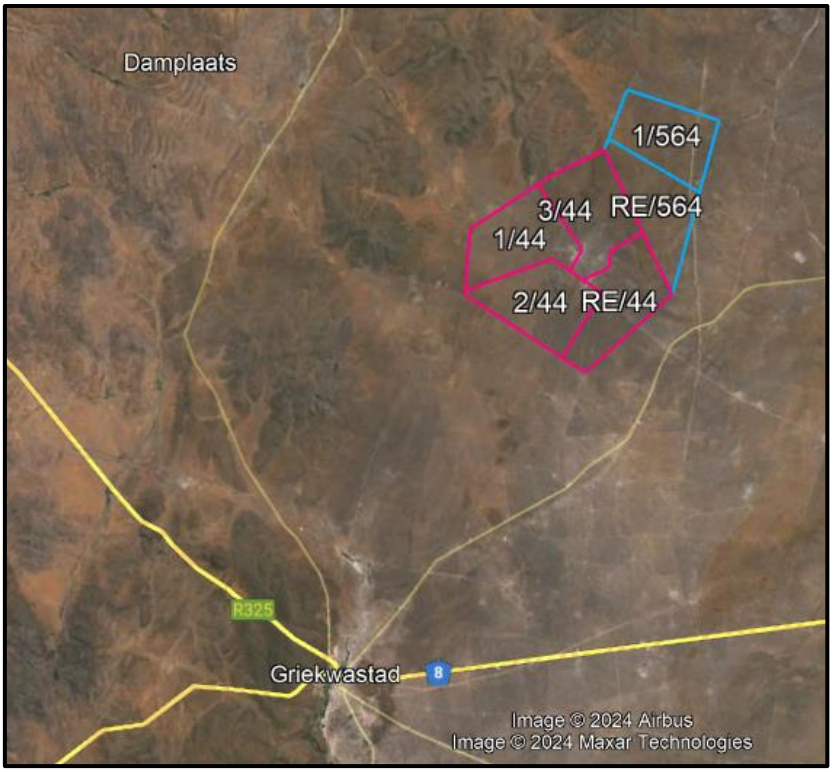


Figure 5: Satellite view showing the proposed prospecting right footprint over the farms Hartebeestdale No 564, and Kogelbeen No 44. (Image obtained from Google Earth).

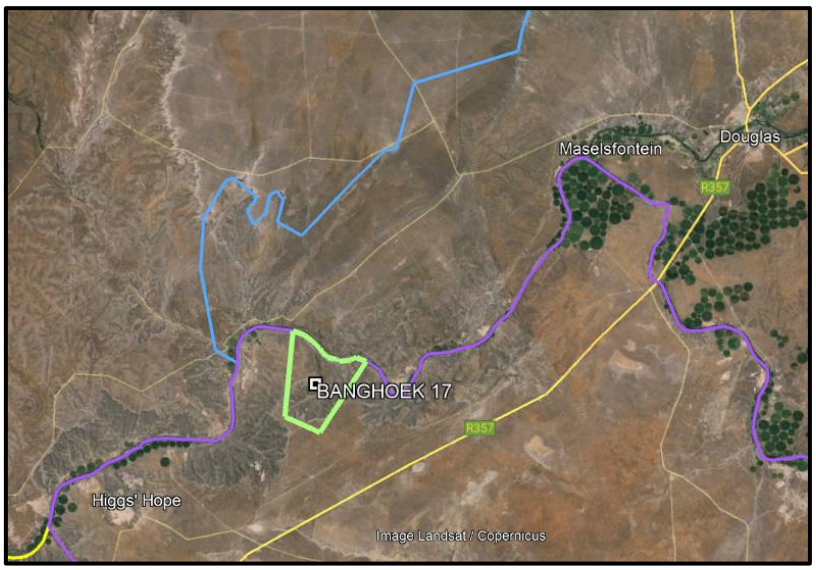


Figure 6: Satellite view showing the proposed prospecting right footprint over the farm Banghoek No 17. (Image obtained from Google Earth).

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 aforesaid main and listed activities, and infrastructure to be placed on site.

The Applicant, Strata Africa Exploration (Pty) Ltd, applied for a prospecting right (PR) (without bulk sampling), and environmental authorisation (EA) for lithium (Li), lead (Pb), copper (Cu), zinc (Zn), and sulphides over 66 107.1283 ha (hereinafter "±66 107 ha") that extends over the

properties listed in Table 1 within the Kuruman, Barkly West, Hay, and Hopetown 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),
  - Ground geophysical survey and ground magnetic survey (Phase 3),
  - Feasibility studies and target selection (Phase 5),
  - Metallurgical testing and analysis (Phase 5),
  - Analytical desktop pre-feasibility study (Phase 7).

- Invasive Prospecting:
  - Exploration boreholes (Phase 4 & 6),
  - Sloping, landscaping, and rehabilitation the affected areas (Phase 4 & 6).

The proposed project triggers listed activities (see following table) 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 (basic assessment process) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures in cooperation with specialists, to ultimately culminate in an environmental management programme (EMPR) that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation.

The site layout plan (drilling plan) can only be compiled once the sampling target areas were identified following the non-invasive prospecting phases. However, Figure 7 shows the layout of a typical drill site, and the site sensitivity maps (Figure 129 - 135) highlight the areas where invasive prospecting is dissuaded.

i) Listed and specified activities

Table 2: Listed and specified activities triggered by the associated prospecting activities.

NAME OF ACTIVITY (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.)	AERIAL EXTENT OF THE ACTIVITY Ha or m^2	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 324, GNR 325 OR GNR 327)/NOT LISTED
Phase 1: Non-Invasive Prospecting: Desktop Geological Study: Literature Survey / Review (All Farms)	N/A: Non-invasive Prospecting	N/A	Not listed.
Phase 2: Non-Invasive Prospecting: Geological Field Mapping (All Farms)	N/A: Non-invasive Prospecting		
Phase 3: Non-Invasive Prospecting: Ground Geophysical Survey and Ground Magnetic Survey (All Farms)	N/A: Non-invasive Prospecting		
Phase 4: Invasive Prospecting: Exploration Boreholes (120 RC holes – 200 m each, totalling 24 000 m)	120 boreholes of ±400 m² each (48 000 m² / 4.8 ha)	Activity 20	GNR 983 Listing Notice 1 of 2014 (as amended)
EIA Regulations GNR 983 of 2014 (as amended) Activity 20 *Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 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.*			
Phase 5: Non-Invasive Prospecting: Geological Feasibility, Target Selection, Metallurgical Testing and Analysis.	N/A: Non-invasive Prospecting	N/A	Not listed.

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Phase 6: Invasive Prospecting: Exploration Boreholes (60 RC holes - 200 m each, totaling 12 000 m) (33 DD holes - 200 m each totalling 6 000 m)	60 boreholes of ±400 m² (24 000 m² / 2.4 ha) 33 boreholes of ±400 m² (6 13 200 m² / 1.3 ha)	Activity 20	GNR 983 Listing Notice 1 of 2014 (as amended)
Phase 7: Non-Invasive Prospecting Analytical Desktop Pre-Feasibility Study. Feasibility Study and Mining Right Application (if applicable).	N/A: Non-invasive Prospecting	N/A	Not listed.

ii) Description of the activities to be undertaken

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

The Applicant applied for a prospecting right (PR) for lithium, lead, copper, zinc, and sulphides over ±66 107 ha of the properties listed in Table 1. The following table lists the GPS coordinates of the proposed prospecting area as shown on the Regulation 2(2) Project Plan attached as Appendix A2.

Table 3: GPS coordinates of the prospecting right.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	27°17’35.77”	23°15’01.77”	-27.293269°	23.250492°
B	27°18’41.93”	23°18’22.32”	-27.311647°	23.306200°
C	27°19’43.38”	23°19’45.00”	-27.328717°	23.329167°
D	27°21’49.19”	23°15’13.49”	-27.363664°	23.253746°
E	27°19’16.60”	23°12’34.31”	-27.321277°	23.209531°
F	27°30’37.82”	23°27’27.01”	-27.510506°	23.457503°
G	27°30’43.40”	23°29’06.95”	-27.512055°	23.485264°
H	27°32’04.87”	23°29’16.52”	-27.534685°	23.487922°
J	27°32’11.72”	23°31’26.81”	-27.536588°	23.524113°
K	27°33’47.49”	23°31’21.13”	-27.563192°	23.522535°
L	27°33’30.43”	23°29’26.53”	-27.558453°	23.490703°

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
M	27°35'58.58"	23°30'16.75"	-27.599606°	23.504653°
N	27°35'30.95"	23°25'21.39"	-27.591931°	23.422607°
P	27°23'05.22"	24°02'03.45"	-27.384782°	24.034292°
Q	27°21'11.96"	24°03'50.31"	-27.353321°	24.063976°
R	27°21'20.97"	24°04'20.70"	-27.355825°	24.072417°
S	27°21'12.69"	24°05'11.18"	-27.353526°	24.086440°
T	27°25'44.91"	24°03'27.34"	-27.429143°	24.057594°
U	27°25'55.02"	24°01'46.87"	-27.431951°	24.029685°
V	27°24'29.57"	23°58'27.54"	-27.408215°	23.974318°
W	27°21'53.19"	23°59'14.63"	-27.364774°	23.987397°
X	27°36'10.35"	24°03'02.96"	-27.602875°	24.050822°
Y	27°39'05.55"	24°02'13.31"	-27.651541°	24.037030°
Z	27°39'17.67"	24°01'12.75"	-27.654909°	24.020209°
1A	27°37'31.45"	24°00'14.40"	-27.625402°	24.003999°
1B	27°36'48.52"	23°56'34.87"	-27.613478°	23.943019°
1C	27°34'56.36"	23°54'51.75"	-27.582321°	23.914375°
1D	27°35'52.65"	23°52'25.13"	-27.597958°	23.873646°
1E	27°35'49.86"	23°49'21.31"	-27.597183°	23.822587°
1F	27°35'03.75"	23°49'30.52"	-27.584375°	23.825144°
1G	27°32'10.81"	23°50'11.08"	-27.536337°	23.836410°
1H	27°26'55.43"	23°53'03.95"	-27.448730°	23.884431°
1J	27°26'10.38"	23°53'31.64"	-27.436216°	23.892123°
1K	27°27'01.72"	23°55'01.63"	-27.450477°	23.917120°
1L	27°28'32.34"	23°56'06.31"	-27.475649°	23.935085°
1M	27°30'02.89"	23°57'53.96"	-27.500803°	23.964988°
1N	27°29'22.55"	23°59'58.69"	-27.489596°	23.999635°
1P	27°30'34.95"	24°03'18.87"	-27.509708°	24.055243°
1Q	27°33'31.80"	24°02'57.70"	-27.558834°	24.049362°
1R	27°48'37.83"	23°45'15.71"	-27.810507°	23.754365°
1S	27°48'02.77"	23°48'02.98"	-27.800770°	23.800829°
1T	27°49'40.84"	23°46'56.40"	-27.828010°	23.782334°
1U	27°50'44.46"	23°48'54.46"	-27.845684°	23.815129°
1V	27°54'14.36"	23°46'31.26"	-27.903989°	23.775350°
1W	27°52'07.64"	23°42'35.10"	-27.868788°	23.709749°
1X	27°51'03.78"	23°40'36.80"	-27.851049°	23.676888°
1Y	27°49'21.16"	23°41'46.79"	-27.822545°	23.696331°

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
1Z	27°48'41.97"	23°44'55.08"	-27.811657°	23.748634°
2A	28°36'40.24"	23°23'24.55"	-28.611177°	23.390153°
2B	28°37'25.41"	23°25'56.59"	-28.623724°	23.432386°
2C	28°41'42.89"	23°24'33.39"	-28.695246°	23.409274°
2D	28°43'34.53"	23°22'07.18"	-28.726259°	23.368660°
2E	28°41'37.69"	23°18'48.14"	-28.693803°	23.313371°
2F	28°40'02.34"	23°18'58.13"	-28.667317°	23.316147°
2G	28°38.48.42"	23°21'12.43"	-28.646783°	23.353452°
2H	28°38'09.88"	23°22'43.42"	-28.636077°	23.378728°
2J	29°11'53.49"	23°23'52.64"	-29.198192°	23.397956°
2K	29°13'21.41"	23°27'16.15"	-29.222613°	23.454487°
2L	29°16.07.81"	23°25'06.46"	-29.268837°	23.418462°
2M	29°15'27.12"	23°23'23.33"	-29.257532°	23.389813°

Also refer to Figures 1 to 6 above for satellite images of the proposed prospecting areas in relation to the surrounding landscape.

Should the PR be issued, and the activities be allowed, the proposed project will comprise of seven 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	**Non-Invasive Prospecting** Desktop Geological Study: Literature Survey / Review (All Farms)	Geologist	Month 1-6	Initial geological targeting report supported by historical records and existing data.
2	**Non-Invasive Prospecting** Geological Field Mapping (All Farms)	Geologist & Field Crew	Month 6-12	Detailed geological targeting report accompanied by maps & plans of ground truthing of initial geological targeting.
3	**Non-Invasive Prospecting**	Geophysicist / Geologist / Field Crew	Month 12-18	Survey report detailing possible targets for further exploration, report supported by maps, plans & cross sections.

PHASE	ACTIVITY	SKILL(S) REQUIRED	TIMEFRAME	OUTCOME
	Ground Geophysical Survey and Ground Magnetic Survey (All Farms)			
4	**Invasive Prospecting** Exploration Boreholes (120 RC holes – 200 m each, totalling 24 000 m)	Geologist / drill rig team / field crew / laboratory technicians. Geological modelling team	Month 18-36	Borehole core data & RAB data: lithological logs, geophysical down hole surveys, assay results for mineralized intercepts. Modelling of data. Interpretation and 3D modelling of potential deposit. Generation & ranking of mineralized targets.
5	**Non-Invasive Prospecting** 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.
6	**Invasive Prospecting** Exploration Boreholes (60 RC holes - 200 m each, totalling 12 000 m) (33 DD holes - 200 m each totalling 6 000 m)	Geologist / drill rig team / field crew / laboratory technicians	Month 36-48	Survey report detailing individual targets. Plans for drill hole intersections supported by cross sections. Resource estimation work producing a SAMRAC Mineral Resource.
7	**Non-Invasive Prospecting** Analytical Desktop Pre-Feasibility Study. Feasibility Study and Mining Right Application.	Economic geologist / mining engineer / project engineer / consulting company	Month 48-60	Geological and pre-feasibility reports, maps, and plans. Risk assessment study to determine if a full feasibility is warranted.

Invasive Prospecting:

(1) Site Commencement/Establishment Phase

Once the target areas were identified (during non-invasive prospecting) and the invasive prospecting commences (phase 4 & 6), 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.

The prospecting activities does not entail bulk sampling and do not require the use of any 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.

- **Clearing of Vegetation**

The proposed footprint of a typical drill site will be ±400 m² in size. 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 to be returned during the rehabilitation of the area.

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

- **Topsoil Stripping**

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.

- **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 Figure 129 – 135), 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.

Public roads cross through the following farms/portions:

> Portion of LKNR No 219: R31 between Kuruman and Hotazel.
> Edgehill No 194 & Alphen No 442: R31 between Kuruman and Danielskuil & R372 to Reivelo.
> Boland No 133 (South): R372 between Kagung and Reivelo.

The following farms are not traversed by public roads, and although access is possible via private farm roads, the Applicant will need to negotiate access with the applicable landowners prior to invasive prospecting (if needed):

> Kungkung No 123;
> Seduall No 124;
> Mora Schuba No 201;
> Mahura Muthla No 198;
> Helvetia No 126;
> Brandziekfontein No 124;
> Farm No 123 (Toekoms);
> Hartebeestdale No 564;
> Kogelbeen No 44;
> Banghoek No 17.

- **Establishment of Site Equipment/Infrastructure**

The prospecting activities does not require the use of any permanent equipment/infrastructure. A central site camp (with an approximate footprint of 3 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,
> Water evaporation sump,
> Chemical toilet,
> Refuse bins and bunded area for applicable chemicals.

(2) Operational Phase (Drilling, Trenching and Sample Pits)

The targeting of all drilling activities will be dependent on the results obtained during the preceding phases of prospecting, namely the geological mapping and geophysical surveying and as such it is currently not possible to include a finalized surface plan showing the intended location, extent, and depth of boreholes to be completed.

The initial planned invasive exploration activities will consist of diamond drill boreholes to target any anomalies identified during Phases 2 & 3 of the non-invasive portion of the prospecting work plan. Diamond drilling will be of the standard BQ (60 mm outside diameter) or NQ (75.7 mm outside diameter) size. Down hole surveys will be done every 50 m in each hole. Core will be marked, logged, photographed, and sampled according to the standard of the applicant's logging and sampling procedures.

Down the hole geophysical surveying will take place upon completion of the exploratory boreholes along with Ground EM surveys to determine positions of conductors.

Percussion Rotary Air Blast (RAB) or Reverse Circulation (RC) drilling may be carried out for pre-collaring of diamond drill boreholes or for obtaining samples if significant depth of cover is encountered over particular targets. The work will consist of:

> Access and drill site preparation,
> Diamond core drilling,

> Sampling and assaying,
> Quality assurance and quality control programs,
> Down hole geophysics,
> Rehabilitation of drill sites, and
> Recording & Integration of data.

This phase of boreholes will determine the continuity of mineralization and potential deposit size. The work will consist of:

> Access and drill site preparation,
> Widely spaced diamond drilling and analyses to confirm grade / tonnage potential,
> Sampling and assaying,
> Quality assurance and quality control programs,
> Metallurgical test work,
> Geotechnical drilling,
> Rehabilitation of drill sites, and
> Recording & Integration of data.

This phase will provide enough information to be able to calculate an inferred resource. The work would consist of:

> Trenching and sample pits,
> Sampling and assaying,
> Quality assurance and quality control programs,
> Metallurgical test work,
> Rehabilitation of drill sites,
> Recording & Integration of data.

Figure 7: Example of a typical drill site.

- **Assaying:**

  Rock chip / soil samples will be sent to an off-site laboratory of the Applicant's choice to be crushed, split, pulverized, and assayed. Samples from core will be split using a core cutter before being sent to the laboratory for analysis.

- **Metallurgical Test Work:**

  Metallurgical test work will start during Phase 5 of the prospecting work programme. These tests will be done 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 do not require electricity as all equipment will be powered with generators.

- **Water Use**

  The drilling operation requires ±1 000 l of water per 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 a 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.

- **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 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 therefore consist of the following:

- Removal of all prospecting equipment from the borehole sites;
- Sealing and capping of all the boreholes;
- Removal of all prospecting related infrastructure/containers from the site camp; and
- Landscaping of any/all compacted areas.

Upon rehabilitation, the prospected areas will once again be available for grazing purposes, and the planting of the indigenous grass layer to protect the topsoil (if needed) will tie in with the proposed land use.

The Applicant will comply with the minimum closure objectives as prescribed by the DMRE and detailed below:

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 a reasonable assessment 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 mining 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 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).

e) Policy and Legislative Context

Table 5: Policy and Legislative Context.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983).	Part A(1)(h)(iv)(1)(a) *Type of environment affected by the proposed activity: Physical Environment – Geology and Soil.* Part A(1)(h)(viii) *The possible mitigation measures that could be applied on the level of risk – Geology and Soil, Hydrology, Groundcover, Fauna, and Biodiversity Conservation*.	The mitigation measures proposed for the site includes specifications of the CARA, 1983.
Final IDP 2023-24 John Taolo Gaetsewe District Municipality. IDP 2022/23 – 2026/2027 Frances Baard District Municipality. ZF Mgcawu District Municipality Final Integrated Development Plan 2021/2022. IDP 2022-2027 Pixley Ka Seme District Municipality.	Part A(1)(h)(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 activity.	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	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk –	The mitigation measures proposed for the site includes specifications of the MHSA, 1996

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
and regulations thereto including relevant OHSA regulations.	*Management of Health and Safety Risks.*	
Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002) read together with applicable amendments and regulations thereto.	Part A1(d) Description of the scope of the proposed overall activity.	Application for a prospecting right. Reference number: NC 30/5/1/1/2/13854 PR.
National Environmental Management Act,1998 (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended) ➢ EIA Regulations GNR 983 of 2014 (as amended) – Activity 20.	Part A1(d)(i) Listing and specified activities.	Application for environmental authorisation. Reference number: NC 30/5/1/1/2/13854 PR
National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004) read together with applicable amendments and regulations thereto specifically the National Dust Control Regulations, GN No R827.	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Air Quality and Noise Ambiance.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Air Quality and Noice Ambiance.*	The mitigation measures proposed for the project consider the NEM:AQA, 2004 and the National Dust Control Regulations.
National Environmental Management Act: Biodiversity Act, 2004 (Act No. 10 of 2004) 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* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Groundcover, fauna, and biodiversity conservation.*	Assessment of biophysical environment. The mitigation measures proposed for the site includes specifications of the NEM:BA, 2004.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003) read together with applicable amendments and regulations thereto. National Environmental Management Laws Amendment Act, 2022 (Act No 2 of 2022)	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity.	The farm Hartebeestdale No 564 is protected in terms of the NEM:PAA.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008) read together with applicable amendments and regulations thereto. NEM:WA, 2008: National norms and standards for the storage of waste (GN 926)	Part A(1)(d)(ii) Description of the activities to be undertaken. Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Waste Management*.	The mitigation measures proposed for the site consider the NEM:WA.
National Heritage Resources Act. 1999 (Act No 25 of 1999).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Human Environment* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Archaeological, Heritage and Palaeontological Aspects.* Part A(1)(t)(i)(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.	Assessment of the cultural and heritage environment. The mitigation measures proposed for the site includes specifications of the NHRA, 1999.
National Water Act, 1998 (Act No. 36 of 1998) read together with applicable amendments and regulations thereto. Department of Water Affairs and Forestry Best Practice Guideline Series (2007).	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – *Hydrology.* Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk.	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

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.** (E.g. in terms of the National Water Act a Water Use License has/has not been applied for)
	Part B(1)(d)(iii) Has a water use licence been applied for?	terms of the NWA. Once the prospecting plan was finalised, and should such application be needed, the Applicant will enter discussions with the DWS to determine the relevant requirements.
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.
Public Participation Guideline in terms of the NEMA EIA Regulations	Part A(1)(h)(ii) Details of the Public Participation Process Followed.	Public participation was conducted in accordance with the guidelines published in terms of the NEMA EIA Regulations
Siyanda District Municipality EMF	Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Groundcover, Fauna, and Biodiversity Conservation.	The requirements of the EMF was incorporated into this study.
The South African Constitution.	-	To be upheld throughout the EIA assessment, planning-, construction-, operational- and decommissioning phases.

f) Need and desirability of the proposed activities.

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

Copper is one of the most essential industrial metals. The main properties making it a valuable commodity are its high electric and thermal conductivity. Furthermore, it is resistant to almost all forms of erosion.

Zinc is a very important base metal. It is used in casting and rolled zinc is a major alloying ingredient in many forms of brass. In the industrial arena it is used as fillers in rubber and paints while in the gold mining industry it is used to precipitate gold from cyanide solution. Zinc oxide is used in agriculture.

Lead is one of the most important nonferrous metals and its use dates back about 5 000 years. Lead is employed in the metallic form and as various chemical compounds. It is used in communication equipment and electrical power transmission, in the construction industry and the manufacture of medical chemicals and pesticides.

Lithium is currently one of the most sought-after minerals. Besides various uses in metallurgy, welding, brazing and the production of hydrogen it lately became essential in the battery industry.

Also refer to Part A(1)(h)(iv)(1)(a) *Type of environment affected by the proposed activity – Geology and Soil.*

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 6: 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 considered? 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?	Kindly refer to the following discussions: ➢ *Part (A)(1)(h)(i) Details of the development footprint alternatives considered.* ➢ *Part (A)(1)(h)(iv) The Environmental attributes associated with the alternatives.* ➢ *Part (A)(1)(g) Motivation for the overall preferred site, activities, and technology alternative.* ➢ *Part (A)(1)(h)(i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.* ➢ *Part (A)(1)(l)(i) Summary of the key findings of the environmental impact assessment.*	Desirable should the management and mitigation measures be implemented.
How will this development pollute and/or degrade the biophysical environment? What waste will be generated by this development?	Kindly refer to the following discussions: ➢ *Part (A)(1)(d)(ii) Description of the activities to be undertaken – Invasive Prospecting.* 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. 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. Chemical ablution facilities will be available to the employees that will weekly be serviced by a registered contractor. No waste will be disposed of or treated on the farms.	Highly desirable should the management and mitigation measures be implemented.

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 disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage?	Kindly refer to the following discussions: ➢ *Part (A)(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – Cultural and Heritage Environment.* ➢ *Part (A)(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Cultural and Heritage Environment.* ➢ *Part (A)(1)(t)(i)(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.*	Highly desirable should the management and mitigation measures be implemented.
How will this development use and/or impact on non-renewable natural resources?	The project entails prospecting through drilling of boreholes and does not necessitate bulk sampling, therefore the proposed impact on non-renewable natural resources is negligible.	Highly Desirable
How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?	The proposed activity will make use of 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 1 000 l/day is anticipated.	Highly Desirable
How will the ecological impacts resulting from this development impact on people's environmental right?	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 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 the project will not have an impact on the people's environmental right.	Highly Desirable

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**
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.	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. 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.	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? 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	Kindly refer to the following discussions: ➢ *Part (A)(1)(h)(i) Details of the development footprint alternatives considered.* ➢ *Part (A)(1)(h)(iv) The Environmental attributes associated with the alternatives.* ➢ *Part (A)(1)(h)(iv) 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.* ➢ *Part (A)(1)(g) Motivation for the overall preferred site, activities, and technology alternative.* ➢ *Part (A)(1)(h)(i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.* ➢ *Part (A)(1)(l)(i) Summary of the key findings of the environmental impact assessment.*	

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
What is the socio-economic context of the area?	Kindly refer to the following discussions: ➢ *Part (A)(1)(h)(iv)(1)(a) The of environment affected by the proposed activity – Socio-Economic Environment.*	Desirable should the management and mitigation measures be implemented.
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?	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 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 the project will not have an impact on the people's environmental right. The project will 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. If the PR application is approved, the Applicant will prospect the area for commercially important minerals, and should the results be favourable and the areas proof feasible the project may lead to a mining right application that will further contribute to the local and national economy.	
How will this development address the specific physical, psychological, developmental, cultural, and social needs and interests of the relevant communities?	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 negative manner, nor will it impact negatively on the socio-economic status of the area. Also refer to the discussion under Part A(1)(h)(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.*	

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
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 (±5 years). This is of crucial importance in municipal areas with very 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 lithium, lead, copper, zinc, and sulphide resources in the earmarked area. Due to the nature of invasive prospecting activities, the location of drill holes and sampling sites can to a certain extend 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 management outcomes are legally binding, and to be implemented by site management for the duration of the site establishment-, operational- and decommissioning phases. The Applicant will also engage the landowners of the PR footprint regarding technical arrangements for the co-existence of the applicable entities on the same land.	Desirable
How will the socio-economic impacts resulting from this development impact on people's environmental right?	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 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 the project will not have an impact on the people's environmental right.	Desirable should the management and mitigation measures be implemented.

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
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?	As mentioned above should the prospecting activities be approved the potential visual-, dust-, and noise impacts associated with the proposed activity will be of low significance. If the proposed mitigation measures and monitoring programs, as proposed in this document, is implemented, no environmental rights of the surrounding residents/public will be affected by the socio-economic impacts associated with the proposed activity.	Desirable should the management and mitigation measures be implemented.
What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	The findings of the specialists were assessed, and their recommendations were incorporated into this document to minimise the impact of the activity on biophysical/culturally sensitive areas. These recommendations were also incorporated into the EMPR of this project that will, once approved, become a legally binding document. Also refer to the following discussions: ➢ *Part A(1)(h)(i) Details of the development footprint alternatives considered.* ➢ *Part A(1)(l)(i) Summary of the key findings of the environmental impact assessment.*	
What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons?		
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	Prospecting will operate in accordance with, amongst others, the following: ❖ CARA, 1983 – to ensure agriculture related compliance; ❖ Financial Provision Regulations, 2015 – to ensure compliance in terms of rehabilitation; ❖ Mine Health and Safety Act, 1996 (as amended) – to ensure employee safety; ❖ MPRDA, 2002 (as amended) – to ensure prospecting related compliance; ❖ NEM:AQA, 2004 – to ensure air quality related compliance;	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
categories of persons disadvantaged by unfair discrimination? 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?	❖ NEM:BA, 2004 – to ensure biodiversity related compliance; ❖ NEM:WA, 2008 – to ensure waste related compliance; ❖ NEMA, 1998 (as amended) – to ensure environmental related compliance; Should the proposed application be approved, the prospecting areas will also be subject to compliance with the above listed. As mentioned earlier, the Applicant will engage the landowners regarding technical arrangement for the co-existence of separate entities on the same land.	
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 lithium, lead, copper, zinc, and sulphides 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 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.	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 further requires the submission of quarterly occupational hygiene reports that record site specific occupational hygiene exposure assessments.	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
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 environmental damage or adverse health effects will be paid for by those responsible for harming the environment.	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 liability of the operation will annually be reviewed and if a shortfall is indicated, the guarantee will be accordingly adjusted.	Highly Desirable

2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT		
What is the socio-economic context of the area?		
Question	**Response**	**Level of Desirability**
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 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.	Please refer to: ➢ Part A(1)(h)(i) *Details of the development footprint alternatives considered.* ➢ Part A(1)(h)(iv)(1)(a) *Type of environment affected by the proposed activity – Socio-Economic Environment.* ➢ Part A(1)(h)(vii) *The positive and negative impacts that the proposed activity and alternatives will have on the environmental and the community that may be affected*. ➢ Part A(1)(t)(i)(1) *Impact on the socio-economic conditions of any directly affected person.*	Desirable should the management and mitigation measures be implemented.

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

Refer to *Part A(1)(h)(i) Details of the development footprint alternatives considered*.

The environmental impact assessment process assessed the feasibility of the proposed alternative to identify fatal flaws that are deemed as severe as to prevent the activity continuing. The outcome of the assessment showed that should the mitigation measures and monitoring programmes proposed in this document be implemented, no fatal flaws could be identified that prevents the activity continuing. Considering the above, the project proposal was updated to incorporate the project related management-, mitigation measures and monitoring programmes identified during this assessment process. The preferred development option was subsequently finalized and is summarised in Table 8.

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

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

i) Details of the development footprint alternatives considered.

With reference to the site plan provided as Appendix 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.

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

Initially the Applicant applied for a prospecting footprint of 80 300.2200 ha over the properties listed in Table 1 above <u>as well as</u> the following properties:

- Portions 1, 2, 3, 4 and the Remaining Extent of Gamahoudi No 122;
- Portions 1, 2, 3 and the Remaining Extent of Chakwana No 200;
- Portions 1, 2, 3 and the Remaining Extent of Chester No 199;
- Annex Helvetia No 125; and
- Portion 1 and the Remaining Extent of Mierhoop No 68.

With the acceptance of the PR application (11 March 2024), the DMRE advised that the above listed farms must be omitted from the application as there is a prior

accepted application and granted right for the same minerals and land applied for. Subsequently, the sketch plan, prospecting work programme and EA application form were amended to reflect only the properties accepted by the DMRE (Table 1). The project proposal thereafter entails the prospecting of ±66 107 ha area over the properties listed in Table 1 and presented in Figures 1 to 6.

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 lithium, lead, copper, zinc and sulphide deposits in the Northern Cape, areas known/expected to contain these resources were selected.

The regional geology of the PR footprint highlights the findings of Beukes (1978) who suggested that bioherms (ancient carbonate rock formation consisting of the fossilized remains of corals, algae, molluscs, and other sedentary marine life), located along the upper unit of the Naragas formation of the Koegas Sub-Group, may act as host to copper sulphates. Beukes also recorded the association of lead and zinc sulphates to karst structures and fault zones within dolomite of the Campbellrand Sub-Group. This was proved to be an accurate observation with the discovery of the lead and zinc deposit at Pering close to Reivilo (Weatherley et al. 1986). These types of occurrences are regarded as the oldest representatives of Mississippi Valley-type Pb-Zn deposits. Traces of Lithium was detected within the Wolhaarkop Formation of the Campbellrand Sub-Group. Though the discovery thereoff is recent, it appears that the presence of small quantities of lithium are limited to the manganiferous horizons within the chert-breccia. Lab results indicate that the chert breccia may host up to 2% Lithium. This was confirmed with an (unpublished to date) thesis done by Rhodes University under the mentorship of Prof Hari Tsikos. Although a 2% lithium content seems low, it must be noted that lithium grades >0.5% is regarded as economically feasible. The manganiferous horizons within the Koegas Sub-Group (Nelani Formation, Rooinekke Iron Formation and Naragas Formation) might also act as host to the mineral.

As discussed in *Part A(1)(h)(iv)(c) Description of Specific Environmental Features and Infrastructure on the Site – Site Specific Geology and Soil* Minrom was contracted to evaluate the mineralisation potential of the earmarked prospecting

areas. The Minrom rankings suggest that the following farms hold the greatest potential for Pb, Zn and Cu base metal mineralisation (see Figure 119).

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Hartebeestdale No 564;
- Kogelbeen No 44; and
- Banghoek No 17.

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. Should the PR Application be approved the Applicant will conduct site visits on all the farms applied for (Table 1) to confirm and ground truth the presence of base metal mineralisation. Representative samples will be extracted for XRF Analysis.

If mineralisation is confirmed, the study area 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 mostly likely be conducted in the target areas (refer to Figure 113 - 118) of the below listed farms, excluding Hartebeestdale No 564 unless prospecting is approved by the DFFE Minister (as discussed later in the report).

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Hartebeestdale No 564 (if approved by DFFE Minister);
- Kogelbeen No 44; and
- Banghoek No 17

The following table lists the earmarked farms and specify whether invasive/non-invasive prospecting is currently proposed.

Table 7: Summary of the properties on which invasive/non-invasive prospecting is proposed.

PROPERTY DESCRIPTION	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING
A portion of Lower Kuruman Native Reserve No 219	Yes	Possible
Portions 1, 2, 5 and Remaining Extent of Edgehill No 194	Yes	No
Portions 3, 4, 5, 6, 7 and Remaining Extent of Alphen No 442	Yes	No
Portions 1, 2, 3 and Remaining Extent of Mahura Muthla No 198	Yes	Yes
Portions 1, 2 and Remaining Extent of Mora Schuba No 201	Yes	Yes
Portions 1, 2, 3 and Remaining Extent of Kungkung No 123	Yes	No
Portions 1, 2, 3 and Remaining Extent of Seduall No 124	Yes	No
Portions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 23, 24, 25, 26 and Remaining Extent of Boland No 133	Yes	No
Helvetia No 126	Yes	Possible
Brandziekfontein No 124	Yes	Possible
Portion 1 and Remaining Extent of Farm No 123 (Toekoms)	Yes	No
Portion 1 and Remaining Extent of Hartebeestdale No 564	Yes (if DFFE approved)	Yes (if DFFE approved)
Portions 1, 2, 3 and Remaining Extent of Kogelbeen No 44	Yes	Yes
Banghoek No 17	Yes	Yes

b) <u>Type of activity to be undertaken</u>

The proposed activity entails prospecting <u>without</u> 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 core samples. The proposed 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 other activity alternative would be to prospect the area <u>with</u> bulk sampling. Bulk sampling entails the digging of opencast pits/trenches to access large samples for metallurgical and production compatibility sampling. The bulk sampling

trenches/pits are usually dug by excavator, upon which the loosened material is moved by FEL to a crushing/milling plant. The material is then crushed, screened, and sized to product stockpiles from where it is transported off-site by trucks. A typical bulk sampling site has a footprint ranging between 2 500 m² (0.25 ha) and 10 000 m² (1 ha).

The footprint of a typical drill site where bulk sampling is not necessary is ±400 m², and when compared with bulk sampling, will have a much lesser impact on the receiving environment.

Current Project Proposal:

Considering the abovementioned, the project proposal is to prospect the area without bulk sampling.

c) Design and layout of the activity.

As shown in Table 4, the invasive prospecting plan (showing drilling, and trenching, locations) will be determined based on the outcome of phases 1, 2, 3, and 5. Thus far the remote sensing data and initial freshwater- and terrestrial sensitivity results (refer to *Part A(1)(h)(iv)(1)(c) Description of the specific environmental features and infrastructure on the site – Site Specific Geology and Soil*, and *Site Specific Groundcover, Fauna, and Biodiversity Conservation*) 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.

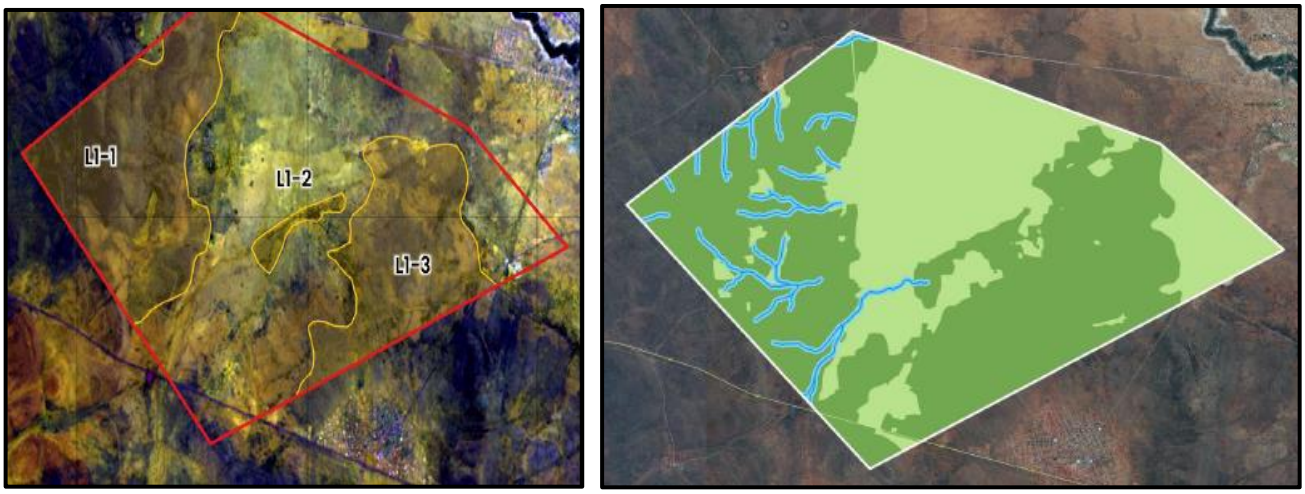


Figure 8: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the earmarked area on LKNR No 219.

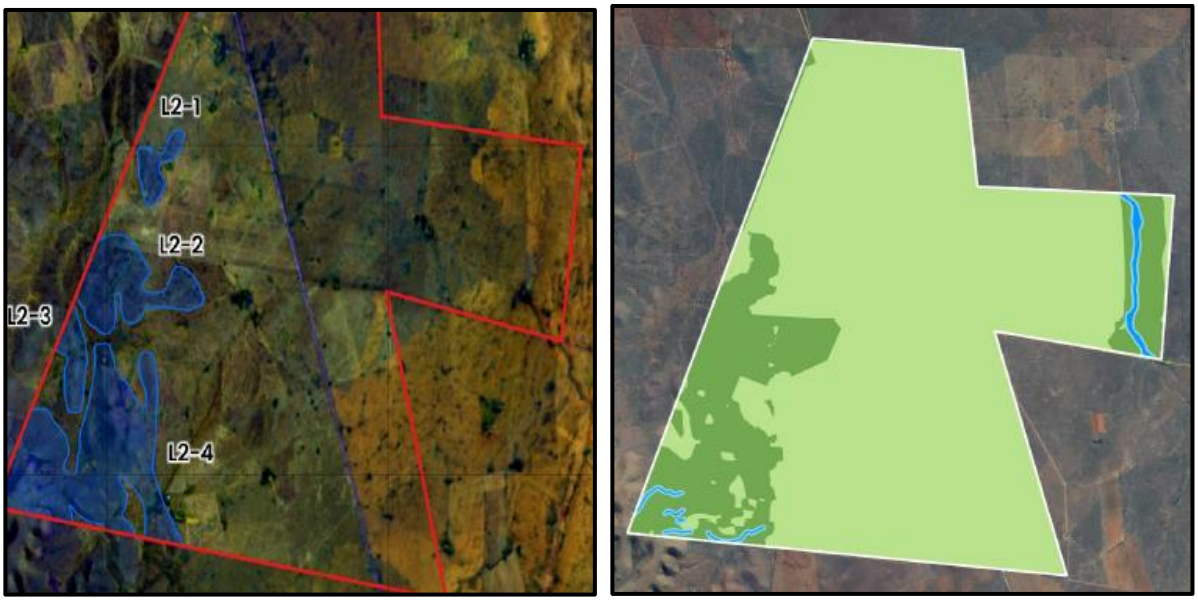


Figure 9: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farms Edgehill No 194 and Alphen No 442.

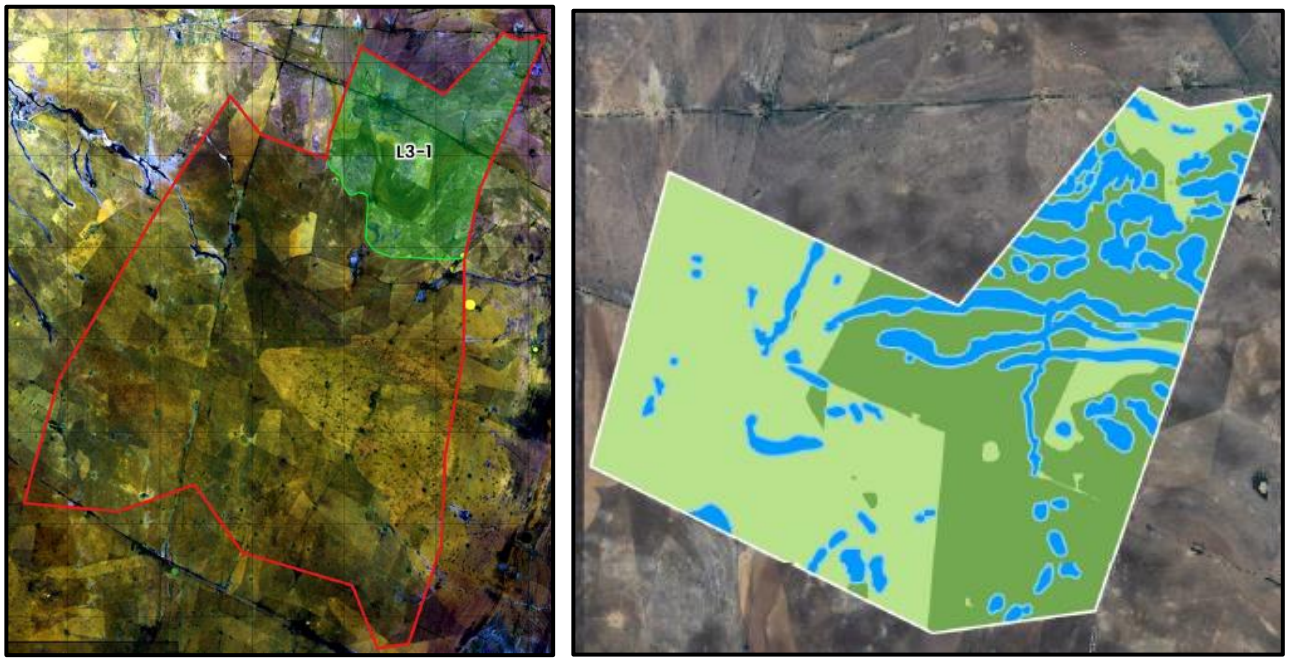


Figure 10: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farms Mahura Muthla No 198 and Mora Schuba No 201.

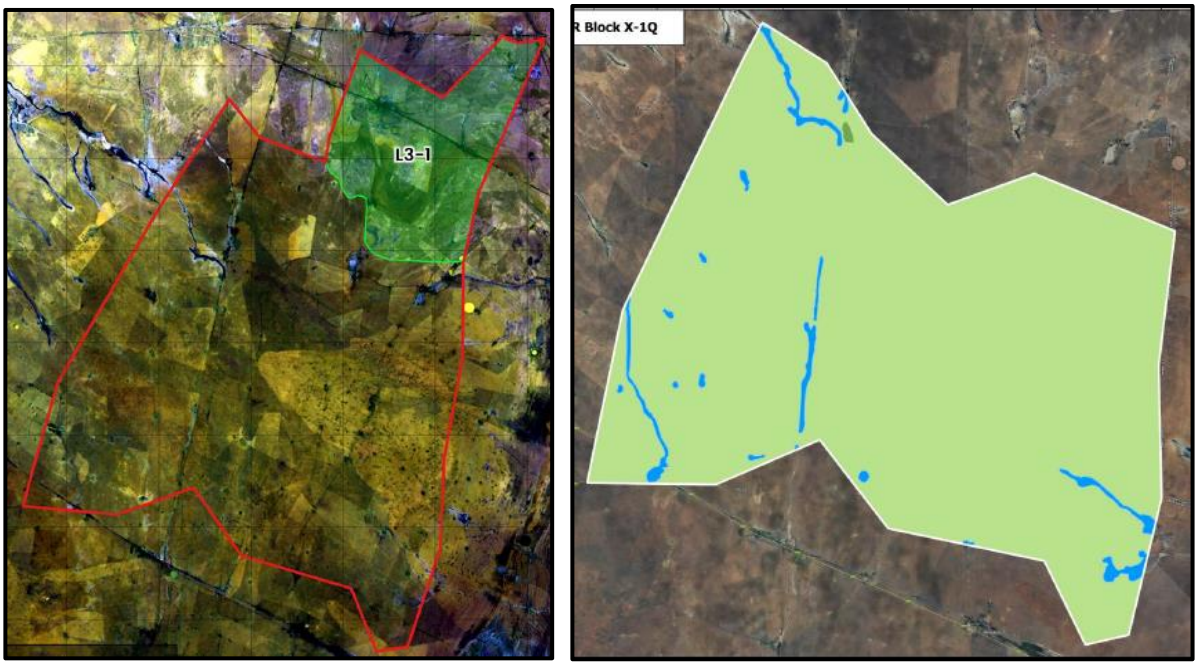


Figure 11: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farms Kungkung No 123, Seduall No 124, and Boland No 133.

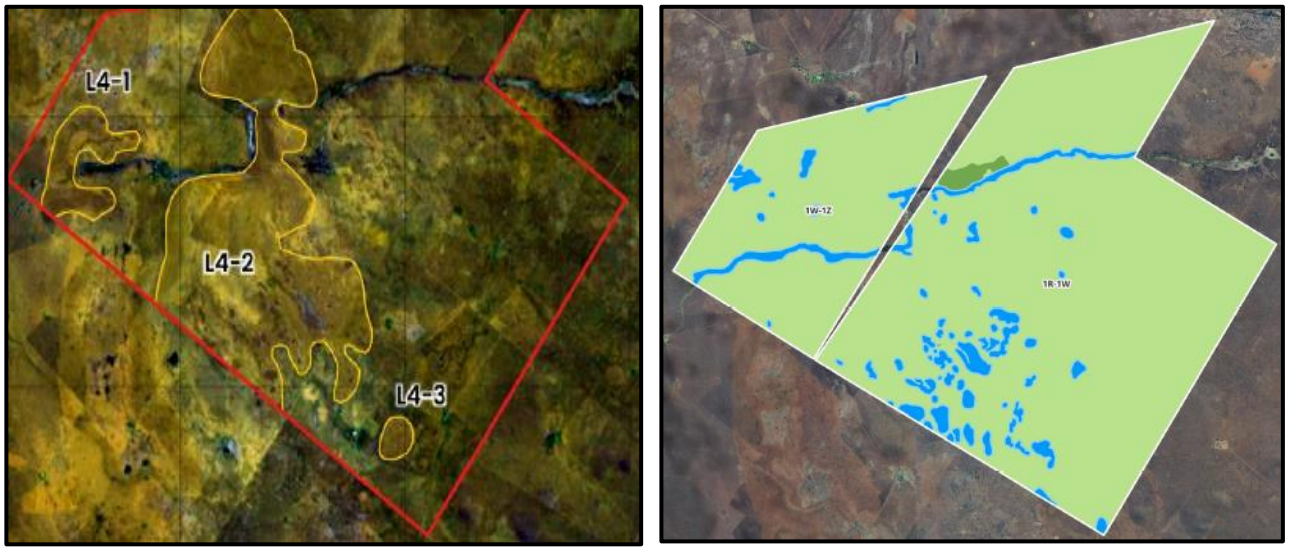


Figure 12: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms).

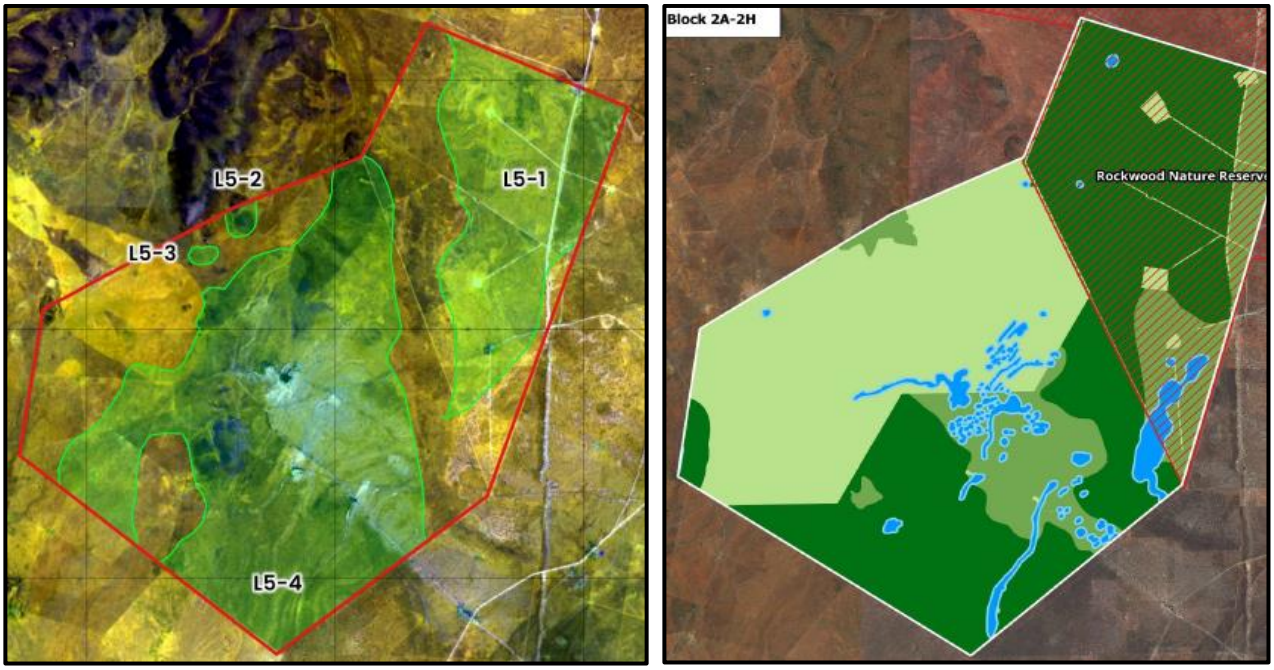


Figure 13: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farms Hartebeestdale No 564 and Kogelbeen No 44.

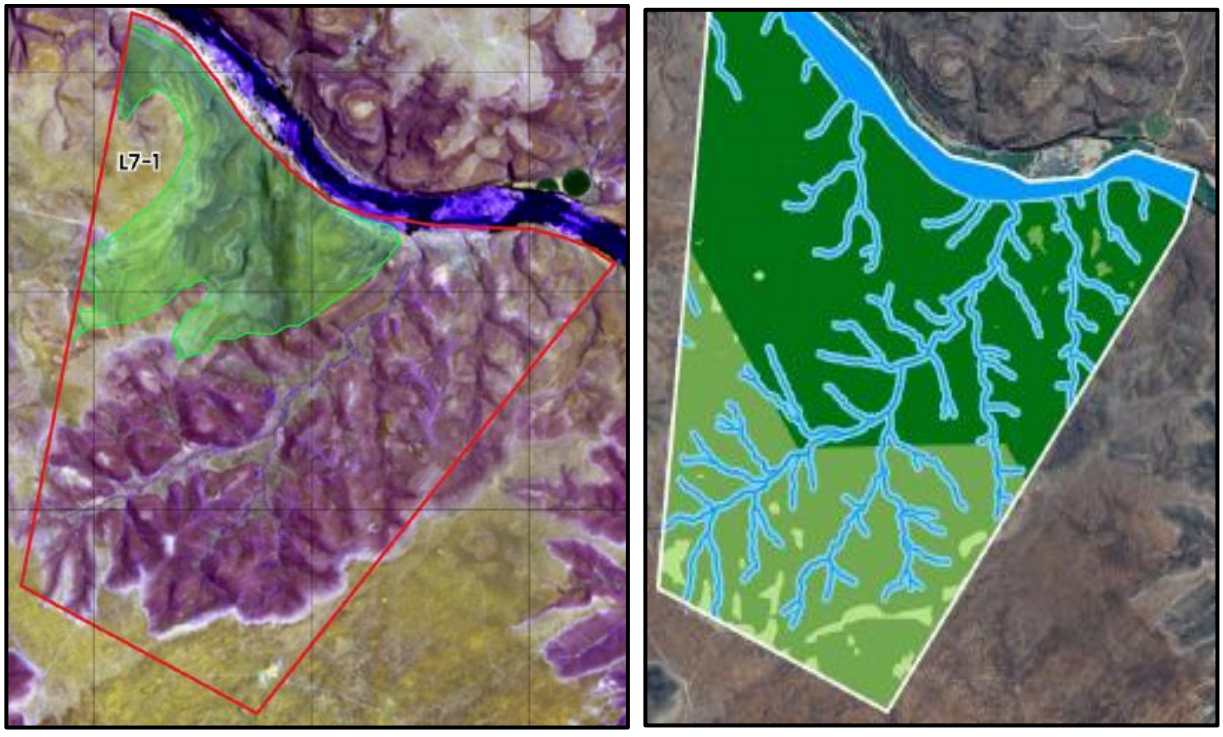


Figure 14: Comparison between the mineral potential (left pane) and the freshwater- and terrestrial sensitivity (right pane) of the farm Banghoek No 17.

Current Project Proposal:

PORTION OF LKNR NO 219

As remote sensing only identified a “Medium” mineral potential on the earmarked portion of LKNR No 219 and the freshwater- and terrestrial sensitivity of the corresponding areas has a “Medium” rating, the likelihood of invasive prospecting taking place will be determined based on the results of the non-invasive prospecting. Should the need arise for invasive prospecting borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

EDGEHILL NO 194 AND ALPHEN NO 442

As remote sensing only identified a “Low” mineral potential on the farms, it is unlikely that invasive prospecting will be conducted. Should the need however arise for invasive prospecting borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

MAHURA MUTHLA NO 198 AND MORA SCHUBA NO 201

As remote sensing identified a “High” mineral potential on the farms the Applicant would like to conduct invasive prospecting. However, the freshwater- and terrestrial sensitivity of the corresponding areas also range between “High” and “Medium”. Once the invasive prospecting programme was drafted borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

KUNGKUNG NO 123, SEDUALL NO 124, AND BOLAND NO 133

As remote sensing did not identify a mineral potential on the farms, it is unlikely that invasive prospecting will be conducted. Should the need arise for invasive

prospecting borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124, AND FARM NO 123 (TOEKOMS)

As remote sensing only identified a "Medium" mineral potential on the farms, the likelihood of invasive prospecting taking place will be determined based on the results of the non-invasive prospecting. Should the need arise for invasive prospecting borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

HARTEBEESTDALE NO 564 AND KOGELBEEN NO 44

As remote sensing identified a "High" mineral potential on the farms invasive prospecting is preferred.

However, Hartebeestdale No 564 is part of the Rockwood Nature Reserve, and the freshwater- and terrestrial sensitivity of the corresponding areas range between "High" and "Medium". In terms of Section 40 of the NEM:LAA no prospecting may be conducted in a nature reserve without the written permission of the Minister of DFFE (Department of Forestry, Fisheries, and the Environment). Therefore, should invasive prospecting be considered, the Applicant will first have to obtain written permission from the said Minister. Considering this, Hartebeestdale No 564 will most likely not be prospected.

Once the invasive prospecting programme (for the remaining areas on Kogelbeen No 44) was drafted borehole locations will first be assessed by a qualified ecologist and approved by the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A no-go buffer zone of at least 30 m (unless increased by the archaeologist) will be maintained around the Kogelbeen Caves and a chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

BANGHOEK NO 17:

As remote sensing identified a "High" mineral potential in the north-western corner of the farm the Applicant would like to conduct invasive prospecting. However, the freshwater- and terrestrial sensitivity of the corresponding area was also rated as "High". Once the invasive prospecting programme was drafted the potential for invasive prospecting will again be assessed (second phase assessment) by a qualified ecologist and submitted for approved to the DMRE. No prospecting will occur in the highly sensitive freshwater areas without prior approval of the DWS. A chance find protocol will be implemented to safeguard against impacts on archaeological and/or palaeontological artefacts/features.

d) Technology to be used in the activity.

Although several types of drilling tools and machinery exists for prospecting, the Applicant proposes to use air drills for RAB (rotary air blast) drilling and reverse circulation drilling; diamond drill rigs will be used for core drilling. Geophysical equipment will be needed for ground electro-magnetic, magnetic and gravity surveys.

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 other technology alternatives were deemed viable for this project.

e) Operational aspects of the activity.

The operational aspects of the activity 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. The project also consider mitigating impacts such as dust generation, workhours, prospecting during agriculturally important seasons etc. These mitigation measures were incorporated into the EMPR (Part B) that forms part of this report and will become a legally binding document once approved.

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

alternatives be proposed during the review period of the DBAR, the inclusion of these will be considered.

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 areas has 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 implications of the no-go alternative are that there will (temporarily) be no impact on the current land use, bio- and geophysical environment of the earmarked areas.

Considering this, 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 only be implemented for the farm Hartebeestdale No 564 (unless prospecting if approved by the DFFE Minister) while the other farms remain available for prospecting.

g) Final Project Proposal

The following table summarizes the final project proposal.

Table 8: Summary of the final project proposal.

EARMARKED FARMS	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING	NO-GO OPTION	TYPE / TECHNOLOGY / OPERATIONAL ASPECTS
Portion of Lower Kuruman Native Reserve No 219	**YES**	**POSSIBLE**	**NO**	➢ Non-invasive prospecting, ➢ Possible invasive prospecting (without bulk sampling), ➢ Air drills, geophysical equipment, ➢ Management and mitigation measures proposed in the EMPR.
Remaining Extent of Edgehill No 194 Portion 1 of Edgehill No 194 Portion 2 of Edgehill No 194 Portion 5 of Edgehill No 194	**YES**	**NO**	**NO**	➢ Non-invasive prospecting.
Remaining Extent of Alphen No 442 Portion 3 of Alphen No 442 Portion 4 of Alphen No 442 Portion 5 of Alphen No 442 Portion 6 of Alphen No 442 Portion 7 of Alphen No 442	**YES**	**NO**	**NO**	➢ Non-invasive prospecting.
Remaining Extent of Mahura Muthla No 198 Portion 1 of Mahura Muthla No 198 Portion 2 of Mahura Muthla No 198 Portion 3 of Mahura Muthla No 198	**YES**	**YES**	**NO**	➢ Non-invasive prospecting, ➢ Invasive prospecting (without bulk sampling), ➢ Air drills, geophysical equipment, ➢ Management and mitigation measures proposed in the EMPR.
Remaining Extent of the farm Mora Schuba 201 Portion 1 of the farm Mora Schuba 201 Portion 2 of the farm Mora Schuba 201	**YES**	**YES**	**NO**	
Remaining Extent of Kungkung No 123 Portion 1 of Kungkung No 123 Portion 2 of Kungkung No 123 Portion 3 of Kungkung No 123	**YES**	**NO**	**NO**	➢ Non-invasive prospecting.
Remaining Extent of Seduall 124	**YES**	**NO**	**NO**	

EARMARKED FARMS	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING	NO-GO OPTION	TYPE / TECHNOLOGY / OPERATIONAL ASPECTS
Portion 1 of Seduall 124 Portion 2 of Seduall 124 Portion 3 of Seduall 124				
Remaining Extent of Boland No 133 Portion 1 of Boland No 133 Portion 2 of Boland No 133 Portion 3 of Boland No 133 Portion 4 of Boland No 133 Portion 5 of Boland No 133 Portion 6 of Boland No 133 Portion 7 of Boland No 133 Portion 8 of Boland No 133 Portion 9 of Boland No 133 Portion 10 of Boland No 133 Portion 11 of Boland No 133 Portion 12 of Boland No 133 Portion 13 of Boland No 133 Portion 14 of Boland No 133 Portion 15 of Boland No 133 Portion 16 of Boland No 133 Portion 17 of Boland No 133 Portion 20 of Boland No 133 Portion 21 of Boland No 133 Portion 23 of Boland No 133 Portion 24 of Boland No 133 Portion 25 of Boland No 133 Portion 26 of Boland No 133	**YES**	**NO**	**NO**	
Helvetia No 126	**YES**	**POSSIBLE**	**NO**	➢ Non-invasive prospecting, ➢ Possible invasive prospecting (without bulk sampling), ➢ Air drills, geophysical equipment, ➢ Management and mitigation measures proposed in the EMPR.
Brandziekfontein No 124	**YES**	**POSSIBLE**	**NO**	
Remaining Extent of Farm No 123 (Toekoms) Portion 1 of Farm No 123 (Toekoms)	**YES**	**NO**	**NO**	➢ Non-invasive prospecting.
Remaining Extent of Hartebeestdale No 564 Portion 1 Hartebeestdale No 564	**NO**	**NO**	**YES**	➢ No prospecting unless authorised by DMRE and the Minister of DFFE.
Remaining Extent of the farm Kogelbeen No 44	**YES**	**YES**	**NO**	➢ Non-invasive prospecting,

EARMARKED FARMS	NON-INVASIVE PROSPECTING	INVASIVE PROSPECTING	NO-GO OPTION	TYPE / TECHNOLOGY / OPERATIONAL ASPECTS
Portion 1 of the farm Kogelbeen No 44 Portion 2 of the farm Kogelbeen No 44 Portion 3 of the farm Kogelbeen No 44				➢ Invasive prospecting (without bulk sampling), ➢ Air drills, geophysical equipment, ➢ Management and mitigation measures proposed in the EMPR.
Remaining Extent of the farm Banghoek No 17	**YES**	**YES**	**NO**	

ii) Details of the Public Participation Process Followed

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

The relevant landowners, stakeholders and I&AP's will be informed of the prospecting right application by means of an advertisement in the Noordkaap Bulletin, and on-site notices that were placed at 14 conspicuous places. A notification letter inviting comments on the DBAR over a 30-days commenting period (ending 07 June 2024) will be send to the landowners, neighbouring landowners, stakeholders, and any other I&AP that may be interested in the project and who's contact details could be obtained. All the notices and advertisement will be available in both Afrikaans and English. The comments received on the DBAR will be incorporated into the final Basic Assessment Report (FBAR) to be submitted to the DMRE for consideration.

The following table lists the I&AP's and stakeholders that will be informed/invited to comment/register on the project:

Table 9: List of landowners, I&AP's and stakeholders that will be informed/invited to comment/register on the project.

LANDOWNERS	SURROUNDING LANDOWNERS
Landowner: 1. Care of Cllr G Chere Lower Kuruman Native Reserve No 219 2. Baloka Trust Portion 1 of the farm Edgehill No 194 Portion 17, 21, 24 of the farm Boland No 133 3. Marietha Freund Trust Portion 2 of the farm Edgehill No 194 Portion 1 of Gayelong No 191 (neighbour also) Portion 4 of Mapperley No 443 (neighbour also)	**Surrounding Landowners and I&AP's:** ➢ Care of Cllr G Chere Portion 2 of Lower Kuruman Native Reserve No 219 ➢ To be Confirmed Farm No 214 Groot Vlakfontein No 141 Kuruman Reserve No 690 ➢ Cromaboo Trust Portion 1 of Farm No 69 Remaining Extent of Farm No 69

LANDOWNERS	SURROUNDING LANDOWNERS
4. Cronel Boerdery CC Portion 5 of the farm Edgehill No 194 Remaining Extent of the farm Edgehill No 194 5. Spitzberg Boerdery Trust Portion 3 of the farm Alphen No 442 Portion 1 of Mapperley No 443 (neighbour also) 6. Mr JC & Mrs HA Lambrecht Portions 4, 5, 6 of the farm Alphen No 442 Remaining Extent of the farm Alphen No 442 7. Mr JP Vorster Portion 7 of the farm Alphen No 442 8. Mr T Tamae Portion 1 of the farm Mora Schuba No 201 9. Wrenchville Merging Farmers Communal Property Association (care of Mr Tamae) Portion 2 of the farm Mora Schuba No 201 10. RSA & Bathlaping Ba Ga Phetlhu Communal Property Remaining Extent of the farm Mora Schuba No 201 Portion 4, 5, 6, 8, 9, 10 of the farm Boland No 133 Remaining Extent of the farm Kungkung No 123 11. Mr JF Haasbroek Portion 1 of the farm Mahura Muthla No 198 12. Mr LP Colyn Portion 2 of the farm Mahura Muthla No 198 Remaining Extent of the farm Mahura Muthla No 198 13. Mr WA & Mrs GB Moeti Portion 3 of the farm Mahura Muthla No 198 14. Me EC Badenhorst Portion 1 of the farm Boland No 133 Mattana No 131 (neighbour also) 15. Mr AHJ Slabbert Portion 2 of the farm Boland No 133 16. RSA & Mr NA Jordaan Portion 3 of the farm Boland No 133	➢ Wilde Olive Familie Trust Portion 2 of Farm No 69 ➢ Clarksdale Diamonds Prop CC Remaining Extent of Farm No 130 ➢ Grain World Inv (Pty) Ltd Remaining Extent of Farm No 131 ➢ Joubert Familie Trust Paradys No 386 ➢ Kleinboere Vereniging Trust Portion 2 of Gamahoudi No 122 ➢ Lambrecht Boerdery CC Annex Helvetia No 125 ➢ RSA Aoud No 128 Masadi Fontein No 140 Murubing No 144 Remaining Extent of Gamohaan No 438 Farm No 217 Remaining Extent of Groot Kees No 146 ➢ Mr JS Jordaan Portion 1 of Khaw No 129 ➢ Florancor Boerdery CC Saltash No 132 Portion 1 of Groot Kees No 146 ➢ CR Markram Familie Trust Portion 1 of Farm No 122 ➢ Tsineng Communal Property Association Remaining Extent of Gamolilo No 72 ➢ Mr GC Bosman Remaining Extent of Chester No 199 ➢ Mr NA & Mrs CM Jordaan Khaw No 129 ➢ Meyers Family Communal Property Association Remaining Extent of Grootfontein No 145

LANDOWNERS	SURROUNDING LANDOWNERS
17. Mr G Janse van Vuuren Portion 7 of the farm Boland No 133 18. Mr JF Pienaar Portion 11, 20 of the farm Boland No 133 19. Mr JJ Olivier Portion 12, 14, 15 of the farm Boland No 133 Portion 1, 2, 3 of Chester No 199 (neighbour also) Portion 3 of Chakwana No 200 (neighbour also) 20. H de J du Plessis Will Trust Portion 13 of the farm Boland No 133 21. De Dwaal Boerdery CC Portion 16 of the farm Boland No 133 22. HRH du Plessis Will Trust Portion 23 of the farm Boland No 133 23. Mr NA & Mrs CM Jordaan Portion 25, 26 of the farm Boland No 133 24. To be Confirmed Remaining Extent of the farm Boland No 133 25. To be Confirmed Portion 1, 2, 3 of the farm Seduall No 124 Remaining Extent of the farm Seduall No 124 26. To be Confirmed Portion 1, 2, 3 of the farm Kungkung No 123 27. Mr LJH Steenkamp Portion 1 of Farm No 123 (Toekoms) Portion 2 of Farm No 133 (also neighbour) 28. Mr N & Mrs HSE Pietersen Remaining Extent of Farm No 123 (Toekoms) Portion 2 of Smauswani Suid 206 (neighbour also) 29. Dr JA Stofberg Brandziekfontein No 124 30. Mr C Lamprecht Helvetia No 126 31. Dibros Beef CC Portion 1 of the farm Hartebeestdale No 564	➢ Me GE Saunders Portion 2 of Groot Kees No 146 ➢ Mr WW Snyman Portion 1 of Compton No 169 ➢ Kalahari Futures Trading Trust Portion 3 of Vogelstruis Puts No 192 ➢ Me IG Scheepers Remaining Extent of Bokfontein No 193 ➢ Mr JD Klinck Tlaring No 197 ➢ GP Nel Familie Trust Portion 2 of Tlaring No 197 ➢ Oxo Trading CC Remaining Extent of Exit T 754 ➢ Covenant Construction (Pty) Ltd Portion 56 of Blok AA No 689 ➢ Me SJ Roos Portion 1, 2 of Chakwana No 200 ➢ Kgalagadi District Municipality Remaining Extent of Chakwana No 200 ➢ Gezina Trust Portion 10, 36 of Blok AA No 689 ➢ Andries Venter Belange (Pty) Ltd England No 318 ➢ Mr JC Venter Mt Vera No 319 ➢ Hoogaar Plase (Pty) Ltd Eldoret No 274 ➢ Mr PC Malan Portion 1 of Rossdale No 382 ➢ Mr MMB & Mrs ME van Rooyen Portion 2 of Rossdale No 382 ➢ Alhoff (Pty) Ltd

LANDOWNERS	SURROUNDING LANDOWNERS
Remaining Extent of the farm Hartebeestdale No 564 Portion 2 of Farm No 563 (neighbour also) Farm No 554 (neighbour also) Portion 1 of Farm No 555 (neighbour also) 32. Mr JP Cornelissen Portion 1 of the farm Kogelbeen No 54 Portion 1 of Farm No 565 (neighbour also) 33. Mr PJ Ludwick Portion 2 of the farm Kogelbeen No 54 34. To be Confirmed Portion 3 of the farm Kogelbeen No 54 35. Mr PJ Scholtz Remaining Extent of the farm Kogelbeen No 54 36. Mr OD van Heerden Remaining Extent of the farm Banghoek No 17	Woodstock No 441 ➢ Mr JP Venter Mapperley No 443 ➢ DR Selemela (Pty) Ltd Portion 3 of Mapperley No 443 ➢ Tramab CC Bramcote No 446 ➢ Provincial Government of North West Province Farm No 212 ➢ Mr E & Mrs EC Botes Mooilaagte No 759 ➢ Mr JA van der Linde Hopefield Estate No 605 ➢ Mr JF Jacobs Remaining Extent of Farm No 565 ➢ Me EMM Kruger Remaining Extent of Farm No 563 ➢ Mr PA Kamfer Portion 1 of Farm No 556 ➢ Mr BJ Esterhuizen Farm No 52 ➢ Mr PJS Ludwick Rooipan No 43 ➢ Mr LM Burger Portion 1 of Farm No 42 ➢ Sielsvreugde Boerdery Trust Farm No 42 ➢ Mr TH Snyman Watervlak No 585 Remaining Extent of Farm No 223 ➢ Pieter Bredenkamp Trust Farm No 222 ➢ Mr PJB Lambrechts

LANDOWNERS	SURROUNDING LANDOWNERS
	Valsch Pan No 70 Baken Kop No 69 ➢ Mr JF & Mrs JL Vermeulen Remaining Extent of Biesieputs No 67 ➢ Smauswane Communal Property Association Remaining Extent of Smauswani Suid No 209 ➢ Fourie Vennootskap Trust Remaining Extent of Farm No 133 ➢ Mr GG Waldeck Portion 1 of Farm No 132 Remaining Extent of Farm No 132 ➢ Verdun Familie Trust Portion 2 of Farm No 122 Remaining Extent of Farm No 122 ➢ Mr JP Kgosietsile & Bathlaping Ba Ga Phetlu Communal Property Remaining Extent of Letchulachu No 119 Portion 1, 3, 4 of Gamahoudi No 122 Remaining Extent of Gamahoudi No 122 ➢ Wessels Trust Driehoek No 127

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

Table 10: Table comparing the required methods with the public participation process of this project.

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
➢ Regulation 41(2)(a): *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) The site where the activity to which the application or proposed application relates is or is to be undertaken; and* (ii) *Any alternative site.*	Notice boards were fixed at the following conspicuous and public accessible areas: ➢ Kuruman library; ➢ Postmasburg Municipal Office/Library; ➢ Griekwastad Post Office; ➢ Douglas Information Centre; ➢ Along the R31 where it crosses through LKNR No 219; ➢ Along the R31 where it crosses through Edgehill No 194;

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
➢ Regulation 41(3): *A notice, notice board or advertisement referred to in subregulation (2) must—* *(a) give details of the application or proposed application which is subjected to public participation; and* *(b) state—* *(i) whether basic assessment or S&EIR procedures are being applied to the application;* *(ii) the nature and location of the activity to which the application relates;* *(iii) where further information on the application or proposed application can be obtained; and* (iv) *the manner in which and the person to whom representations in respect of the application or proposed application may be made.* ➢ Regulation 41(4): *A notice board referred to in subregulation (2) must—* *(a) be of a size of at least 60cm by 42cm; and* (b) *display the required information in lettering and in a format as may be determined by the competent authority.*	➢ At the intersection of the R31 and R372 on the border of Edgehill No 194 and Alphen No 442; ➢ On the northern border of Mahura Muthla No 198; ➢ On the gate of Mora Schuba No 201; ➢ On the north-eastern border of Kungkung No 123; ➢ On the southern border of Boland along the R372; ➢ At the turnoff to Farm No 123 (Toekoms); ➢ At the intersection of the R31 and D3403; ➢ South-east of the farm Kogelbeen No 44 along the gravel road. The notice boards that were placed complied with the requirements of Regulation 41(3) as presented in Appendix G. The notices were printed on notice boards of 60 x 42 cm in Arial font of sufficient size and were available in both Afrikaans and English.
➢ Regulation 41(2)(b): *giving written notice, in any of the manners provided for in section 47D of the Act, to-* (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;* (ii) *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;* (iii) *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;* *(iv) the municipality which has jurisdiction in the area;*	(i) The Applicant is in the process of contacting the landowners regarding the project. The landowners will also be invited to register on the project and comment on the DBAR. (ii) The directly surrounding landowners, and lawful occupiers of the land (if applicable) will be informed of the project. (iii) The various Ward Councillors applicable to the application footprint will be invited to comment on the project and DBAR. (iv) Representatives from the following local and district municipalities will be invited to comment on the project and DBAR: ➢ Ga-Segonyana Local Municipality; ➢ Joe Morolong Local Municipality; ➢ Dikgatlong Local Municipality; ➢ Siyancuma Local Municipality; ➢ Tsantsabane Local Municipality;

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
(v) any organ of state having jurisdiction in respect of any aspect of the activity; *(vi) any other party as required by the competent authority;*	➢ John Taolo Gaetsewe District Municipality; ➢ Frances Baard District Municipality; ➢ Pixley Ka Seme District Municipality; ➢ ZF Mgcawu District Municipality (v) As listed in Table 6 the relevant state departments and entities will be invited to comment on the project and DBAR. (vi) To date no other parties were identified that need to be contacted.
➢ Regulation 41(2)(c): *Placing an advertisement in-* *(i) One local newspaper; or* *(ii) 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.*	The project and availability of the DBAR will be advertised in the Noordkaap Bulletin on 02 May 2024.
➢ Regulation 41(2)(d): *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…*	The Noordkaap Bulletin is a provincial newspaper distributed in Afrikaans and English, free of charge in all the regions applicable to this application.
➢ Regulation 41(2)(e): *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) illiteracy;* *(ii) disability; or* (iii) *any other disadvantage.*	Some I&AP's without emails where messaged via Whatsapp or SMS. Persons not answering their telephones were also messaged to explain the reason for the call from the consultants.
➢ Regulation 41(5): *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)…*	Not applicable to this application.
➢ Regulation 41(6): *When complying with this regulation, the person conducting the public participation process must ensure that—*	The DBAR containing all the facts in respect of this application will be available to landowners, stakeholders and potential I&AP's for perusal and commenting over a 30-days

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
(a) *information containing all relevant facts in respect of the application or proposed application is made available to potential interested and affected parties; and* (b) *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.*	commenting period. The DBAR will also be available on the Greenmined website. I&AP's and stakeholders will be invited to contact the EAP should additional information be required. The comments received on the DBAR will be incorporated into the FBAR to be submitted for departmental consideration.
➢ Regulation 41(7): *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.*	Not applicable to this project.

iii) Summary of issues raised by I&APs

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

Table 11: Summary of issues raised by IAPs

Interested and Affected Parties **List the name of persons consulted in this column, and** **Mark with an X where those who must be consulted were in fact consulted**		**Date Comments Received**	**Issues raised**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
AFFECTED PARTIES	**X**				
Landowner/s					
Care of Cllr G Chere ➢ Lower Kuruman Native Reserve No 219	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
Baloka Trust ➢ Portion 1 of Edgehill No 194 ➢ Portion 17, 21, 24 of Boland No 133	X				
Marietha Freund Trust ➢ Portion 2 of Edgehill No 194	X				
Cronel Boerdery CC ➢ Portion 5 of Edgehill No 194 ➢ Remaining Extent of Edgehill No 194	X				
Spitzberg Boerdery Trust ➢ Portion 3 of Alphen No 442	X				

Interested and Affected Parties **List the name 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.**
Mr JC & Mrs HA Lambrecht ➢ Portion 4, 5, 6 of Alphen No 442 ➢ Remaining Extent of Alphen No 442	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
Mr JP Vorster ➢ Portion 7 of Alphen No 442	X				
Mr T Tamae ➢ Portion 1 of Mora Schuba No 201	X				
Wrenchville Merging Farmers Communal Property Association (care of Mr Tamae) ➢ Portion 2 of Mora Schuba No 201	X				
RSA & Bathlaping Ba Ga Phetlhu Communal Property ➢ Remaining Extent of Mora Schuba No 201 ➢ Portion 4, 5, 6, 8, 9, 10 of Boland No 133 ➢ Remaining Extent of Kungkung No 123	X				

Interested and Affected Parties **List the name 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.**
Mr JF Haasbroek ➢ Portion 1 of Mahura Muthla No 198	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
Mr LP Colyn ➢ Portion 2 of Mahura Muthla No 198 ➢ Remaining Extent of Mahura Muthla No 198	X				
Mr WA & Mrs GB Moeti ➢ Portion 3 of Mahura Muthla No 198	X				
Me EC Badenhorst ➢ Portion 1 of Boland No 133	X				
Mr AHJ Slabbert ➢ Portion 2 of Boland No 133	X				
RSA & Mr NA Jordaan ➢ Portion 3 of Boland No 133	X				
Mr G Janse van Vuuren ➢ Portion 7 of Boland No 133	X				

Interested and Affected Parties **List the name 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.**
Mr JF Pienaar Portion 11, 20 of Boland No 133	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
Mr JJ Olivier ➢ Portion 12, 14, 15 of Boland No 133	X				
H de J du Plessis Will Trust ➢ Portion 13 of Boland No 133	X				
De Dwaal Boerdery CC ➢ Portion 16 of Boland No 133	X				
HRH Du Plessis Will Trust ➢ Portion 23 of Boland No 133	X				
Mr NA & Mrs CM Jordaan ➢ Portion 25, 26 of Boland No 133	X				
To be confirmed ➢ Remaining Extent of Boland No 133	X				
To be confirmed ➢ Portion 1, 2, 3, of Seduall No 124 ➢ Remaining Extent of Seduall No 124	X				

Interested and Affected Parties **List the name 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.**
To be confirmed ➢ Portion 1, 2, 3, of Kungkung No 123	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
Mr LJH Steenkamp ➢ Portion 1 of Farm No 123 (Toekoms)	X				
Mr N & Mrs HSE Pietersen ➢ Remaining Extent of Farm No 123 (Toekoms)	X				
Dr JA Stofberg ➢ Brandziekfontein No 124	X				
Mr C Lamprecht ➢ Helvetia No 126	X				
Dibros Beef CC ➢ Portion 1 of Hartebeestdale No 564 ➢ Remaining Extent of Hartebeestdale No 564	X				
Mr JP Cornelissen ➢ Portion 1 of Kogelbeen No 54	X				

Interested and Affected Parties **List the name 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.**
Mr PJ Ludwick ➢ Portion 2 of Kogelbeen No 54	X	Any comments received from the landowner will be incorporated into the final BAR and EMPR.			
To be confirmed ➢ Portion 3 of Kogelbeen No 54	X				
Mr PJ Scholtz ➢ Remaining Extent of Kogelbeen No 54	X				
Mr OD van Heerden ➢ Remaining Extent of Banghoek No 17	X				
Lawful occupier/s of the land					
N/A		N/A	N/A	N/A	
Landowners or lawful occupiers on adjacent properties	**X**	-	-	-	-
Care of Cllr G Chere ➢ Portion 2 of Lower Kuruman Native Reserve No 219	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
To be confirmed ➢ Farm No 214 ➢ Groot Vlakfontein No 141 ➢ Kuruman Reserve No 690					

Interested and Affected Parties **List the name 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.**
Cromaboo Trust ➢ Portion 1 of Farm No 69 ➢ Remaining Extent of Farm No 69	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Wilde Olive Familie Trust ➢ Portion 2 of Farm No 69	X				
Clarksdale Diamonds Prop CC ➢ Remaining Extent of Farm No 130	X				
Grain World Inv (Pty) Ltd ➢ Remaining Extent of Farm No 131	X				
Joubert Familie Trust ➢ Paradys No 386	X				
Kleinboere Vereniging Trust ➢ Portion 2 of Gamahoudi No 122	X				
Lambrecht Boerdery CC ➢ Annex Helvetia no 125	X				
RSA ➢ Aoud No 128 ➢ Masadi Fontein No 140 ➢ Murubing No 144	X				

Interested and Affected Parties **List the name 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.**
➢ Remaining Extent of Gamohaan No 438 ➢ Farm No 217 ➢ Remaining Extent of Groot Kees No 146					
Mr JS Jordaan ➢ Portion 1 of Khaw No 129	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Florancor Boerdery CC ➢ Saltash No 132 ➢ Portion 1 of Groot Kees No 146	X				
CR Markram Familie Trust ➢ Portion 1 of Farm No 122	X				
Tsineng Communal Property Association ➢ Remaining Extent of Gamolilo No 72	X				
Mr GC Bosman ➢ Remaining Extent of Chester No 199	X				
Mr NA & Mrs CM Jordaan ➢ Khaw No 129	X				

Interested and Affected Parties **List the name 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.**
Meyer Family Communal Property Association ➢ Remaining Extent of Grootfontein No 145	X				
Me GE Saunders ➢ Portion 2 of Groot Kees No 146	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Mr WW Snyman ➢ Portion 1 of Compton No 169	X				
Kalahari Futures Trading Trust ➢ Portion 3 of Vogelstruis Puts No 192	X				
Me IG Scheepers ➢ Remaining Extent of Bokfontein No 193	X				
Mr JD Klinck ➢ Tlaring No 197	X				
GP Nel Familie Trust ➢ Portion 2 of Tlaring No 197	X				
Oxo Trading CC ➢ Remaining Extent of Exit T 754	X				

Interested and Affected Parties **List the name 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.**
Covenant Construction (Pty) Ltd ➢ Portion 56 of Blok AA No 689	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Me SJ Roos ➢ Portion 1, 2 of Chakwana No 200	X				
Kgalagadi District Municipality ➢ Remaining Extent of Chakwana No 200	X				
Gezina Trust ➢ Portion 10, 36 of Blok AA No 689	X				
Andries Venter Belange (Pty) Ltd ➢ England No 318	X				
Mr JC Venter ➢ Mt Vera No 319	X				
Hoogaar Plase (Pty) Ltd ➢ Eldoret No 274	X				
Mr PC Malan ➢ Portion 1 of Rossdale No 382	X				
Mr MMB & ME van Rooyen ➢ Portion 2 of Rossdale No 382	X				

Interested and Affected Parties **List the name 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.**
Alhoff (Pty) Ltd ➢ Woodstock No 441	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Mr JP Venter ➢ Mapperley No 443	X				
DR Selemela (Pty) Ltd ➢ Portion 3 of Mapperley No 443	X				
Tramab CC ➢ Bramcote No 446	X				
Provincial Government of North-West Province ➢ Farm No 212	X				
Mr E & Mrs EC Botes ➢ Mooilaagte No 759	X				
Mr JA van der Linde ➢ Hopefield Estate No 605	X				
Mr JF Jacobs ➢ Remaining Extent of Farm No 565	X				
Mr PA Kamfer ➢ Portion 1 of Farm No 556	X				

Interested and Affected Parties **List the name 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.**
Mr BJ Esterhuizen ➢ Farm No 52	X	Any comments received from the neighbours will be incorporated into the final BAR and EMPR.			
Mr PJS Ludwick ➢ Rooipan No 43	X				
Mr LM Burger ➢ Portion 1 of Farm No 42	X				
Sielsvreuge Boerdery Trust ➢ Farm No 42	X				
Mr TH Snyman ➢ Watervlak No 585 ➢ Remaining Extent of Farm No 223	X				
Pieter Bredenkamp Trust ➢ Farm No 222	X				
Mr PJB Lambrechts ➢ Valsch Pan No 70 ➢ Baken Kop No 69	X				
Mr JF & JL Vermeulen ➢ Remaining Extent of Biesieputs No 67	X				

Interested and Affected Parties **List the name 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.**
Smauswane Communal Property Association ➢ Remaining Extent of Smauswani Suid No 209	X				
Fourie Vennootskap Trust ➢ Remaining Extent of Farm No 133	X	Any comments received from the neighbour will be incorporated into the final BAR and EMPR.			
Mr GG Waldeck ➢ Portion 1 of Farm No 132 ➢ Remaining Extent of Farm No 132	X				
Verdun Familie Trust ➢ Portion 2 of Farm No 122 ➢ Remaining Extent of Farm No 122	X				
Mr JP Kgosietsile & Bathlaping Ba Ga Phetlu Communal Property ➢ Remaining Extent of Letchulachu No 119 ➢ Portion 1, 3, 4 of Gamahoudi No 122 ➢ Remaining Extent of Gamahoudi No 122	X				
Wessels Trust ➢ Driehoek No 127	X				

Interested and Affected Parties **List the name 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.**
Municipal councillor					
Ga-Segonyana Municipality Ward 8, 10, 11	X	Any comments received from the ward councillors will be incorporated into the final BAR and EMPR.			
Joe Morolong Municipality Ward 13, 14	X				
Dikgatlong Municipality Ward 6	X				
Tsatnsabane Municipality Ward 7	X				
Siyancuma Municipality Ward 1, 7	X				
Municipality					
Ga-Segonyana Local Municipality (GSLM)	X	Any comments received from the municipality will be incorporated into the final BAR and EMPR.			
Joe Morolong Local Municipality (JMLM)	X				
Dikgatlong Local Municipality (DLM)	X				

Interested and Affected Parties **List the name 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.**
Tsantsabane Local Municipality (TLM)	X	Any comments received from the municipality will be incorporated into the final BAR and EMPR.			
Siyancuma Local Municipality (SLM)	X				
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Department of Roads and Public Works (DRPW)	X	Any comments received from the DRPW will be incorporated into the final BAR and EMPR.			
Department of Water and Sanitation (DWS)	X	Any comments received from the DWS will be incorporated into the final BAR and EMPR.			
Eskom	X	Any comments received from Eskom (on the DBAR and EMPR) will be incorporated into the final BAR and EMPR.			
Communities	No communities other than those listed as part of the neighbours were identified within the study area.				
Dept. Land Affairs	X	08/03/2024	The Commission on Restitution of Land Rights confirmed on 08 March 2024 that no land claims appears on their database in respect of the properties this application extends across.		
Traditional Leaders	N/A	N/A	N/A	N/A	N/A
Dept. Environmental Affairs					

Interested and Affected Parties **List the name 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.**
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform	X	Any comments received will be incorporated into the final BAR and EMPR.			
Other Competent Authorities affected					
Department of Agriculture, Land Reform and Rural Development (DALRRD)	X	Any comments received from the DALRRD will be incorporated into the final BAR and EMPR.			
Department of Economic Development and Tourism (DEDT)	X	Any comments received from the DEDT will be incorporated into the final BAR and EMPR.			
Department of Labour (DoL)	X	Any comments received from the DoL will be incorporated into the final BAR and EMPR.			
John Taolo Gaetsewe District Municipality (JTGDM)	X	Any comments received will be incorporated into the final BAR and EMPR.			
Frances Baard District Municipality	X				
Pixley ka Seme District Municipality (PSDM)	X				
ZF Mgcawu District Municipality (ZFMDM)	X				

Interested and Affected Parties **List the name 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.**
South African Heritage Resources Agency (SAHRA)	X	Any comments received from the SAHRA will be incorporated into the final BAR and EMPR.			
OTHER AFFECTED PARTIES					
N/A					
INTERESTED PARTIES					
N/A					

iv) The Environmental attributes associated with the alternatives.

(The environmental attributes 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 biophysical, cultural, and socio-economic environment that may be affected and the baseline conditions, which are likely to be affected by the prospecting operation.

PHYSICAL ENVIRONMENT

CLIMATE

Kuruman & Barkly West Administrative District – Kuruman

The long-term average annual rainfall of Kuruman is ±472 mm of which the bulk is received from October – March. Temperatures vary from an average monthly maximum and minimum of 37°C and 10°C in January to 24˚C and -6˚C in July respectively. The highest temperature that has been recorded is 37˚C and the lowest -6˚C.

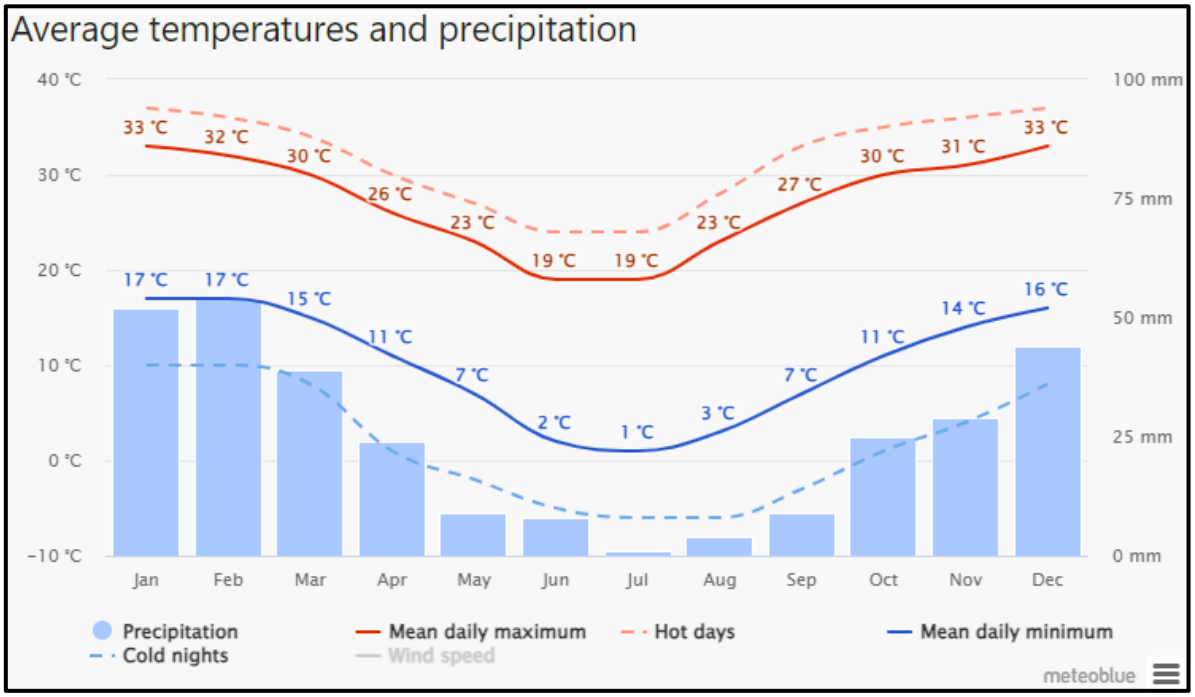


Figure 15: Average temperatures and precipitation for Kuruman (image obtained from https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/kuruman_south-africa_986134).

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.

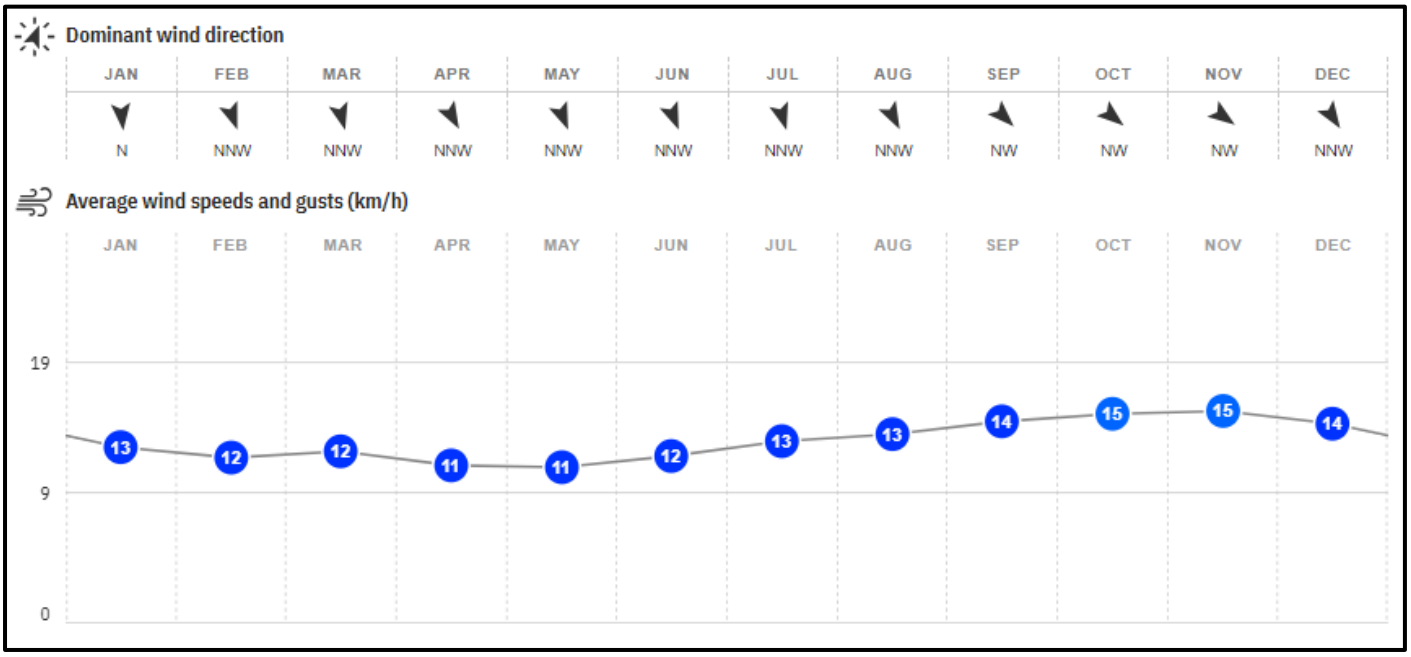


Figure 16: Monthly wind speed statistics and directions for Kathu/Sishen (image obtained from www.windfinder.com/windstatistics/kathu_sishen).

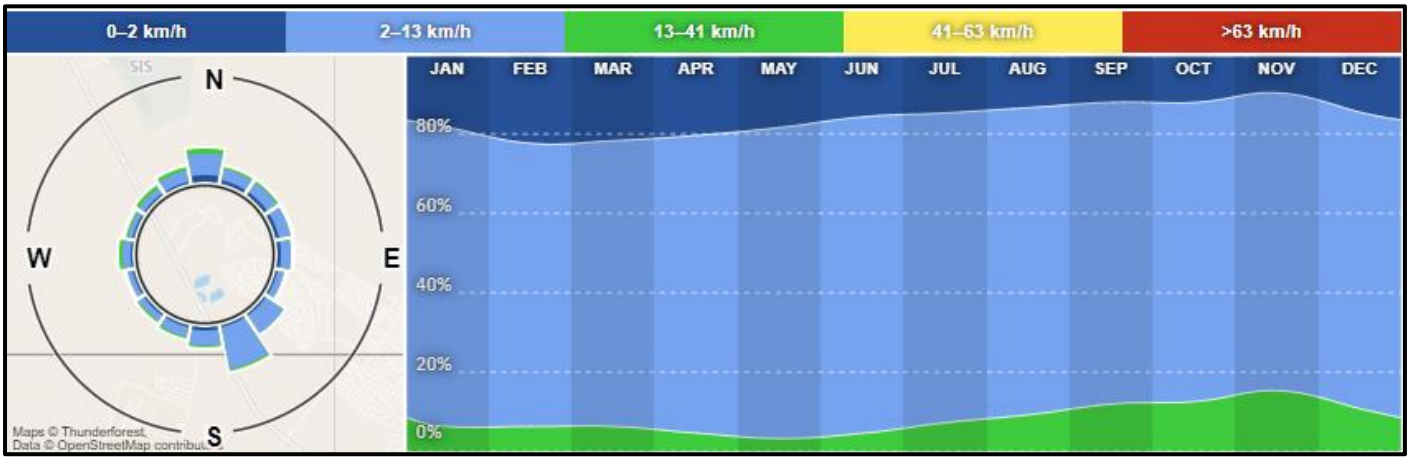


Figure 17: Monthly wind direction and strength distribution for Kathu/Sishen (image obtained from www.windfinder.com/windstatistics/kathu_sishen).

Hay Administrative District - Griekwastad

The long-term average annual rainfall of Griekwastad is ±240 mm of which the bulk is received from October – March. Temperatures vary from an average monthly maximum and minimum of 37°C and 10°C in January to 24˚C and -6˚C in July respectively. The highest temperature that has been recorded is 37˚C and the lowest -6˚C.

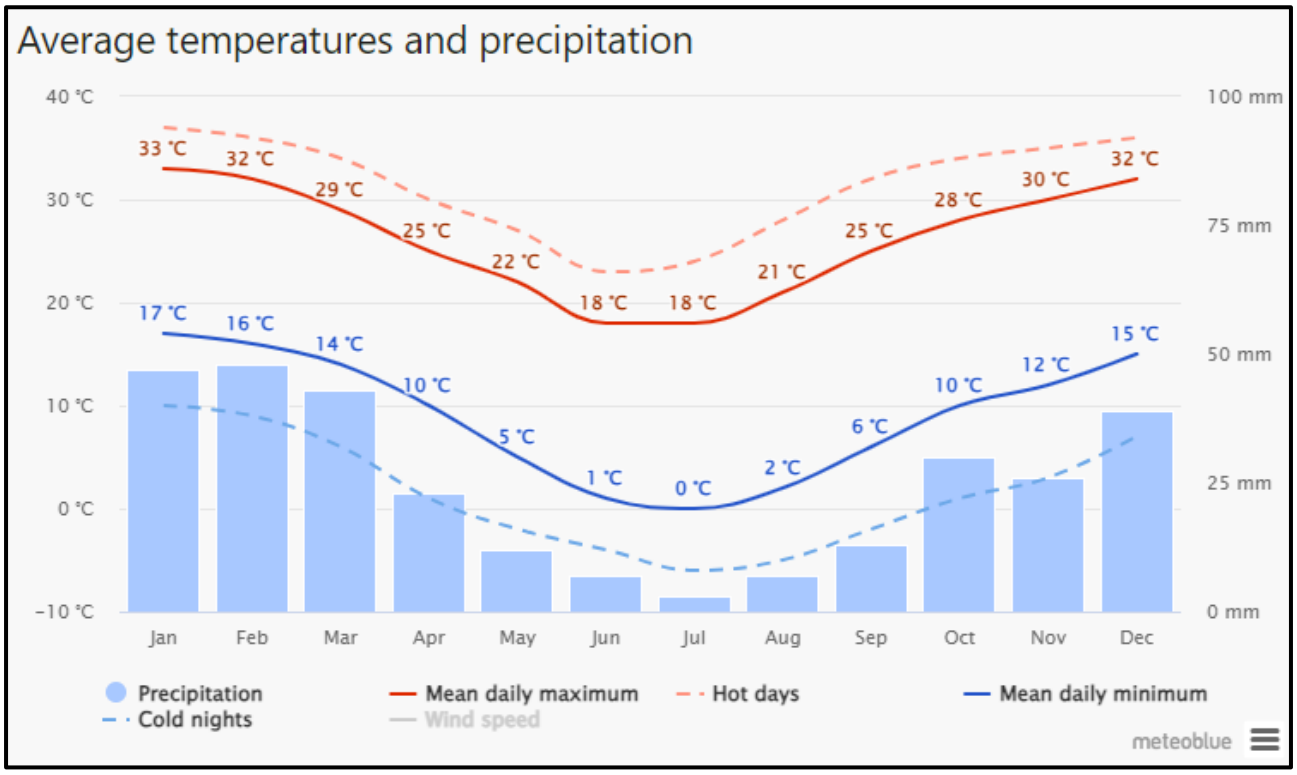


Figure 18: Average temperatures and precipitation for Griekwastad (image obtained from https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/griekwastad_south-africa_999999).

According to the Windfinder website the nearest station to record wind data of the area is the Postmasburg weather station. 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.

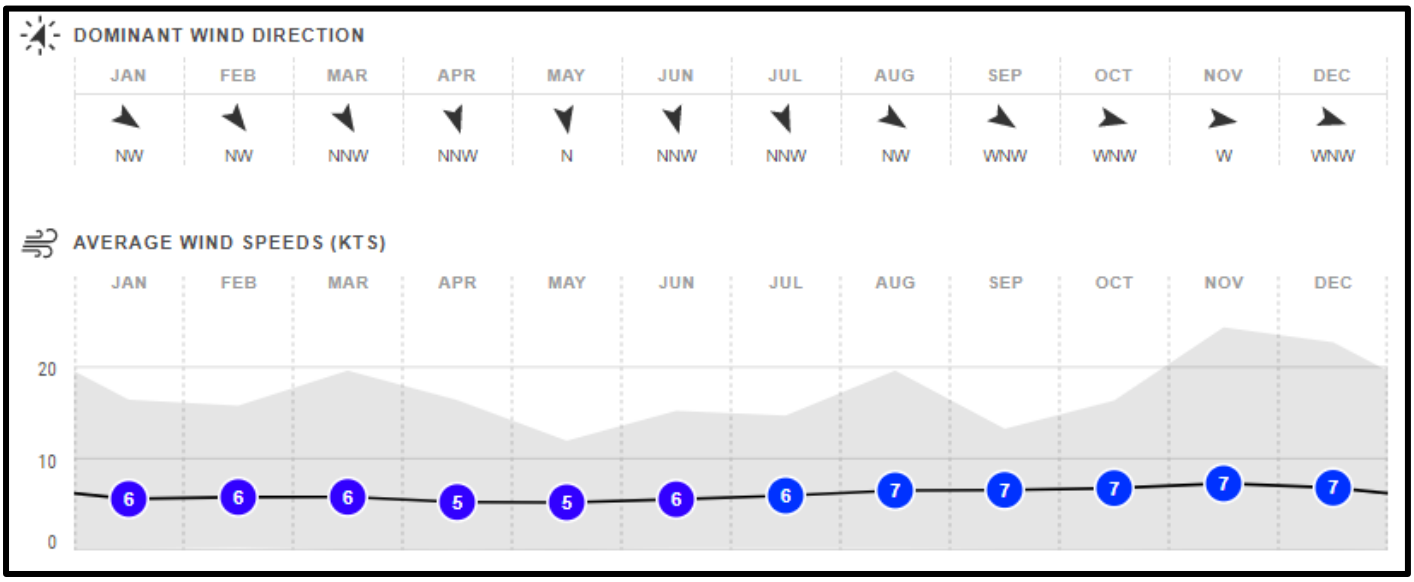


Figure 19: Image showing the dominant wind direction and average wind speed over a 12 month period for the Postmasburg area. (Image obtained from www.windfinder.com/windstatistics/postmasburg)

Hopetown Administrative District - Douglas

The long-term average annual rainfall of Douglas is ±691 mm of which the bulk is received from October – March. Temperatures vary from an average monthly maximum and minimum of 39°C and 12°C in January to 26˚C and -4˚C in July respectively. The highest temperature that has been recorded is 44˚C and the lowest -4˚C.

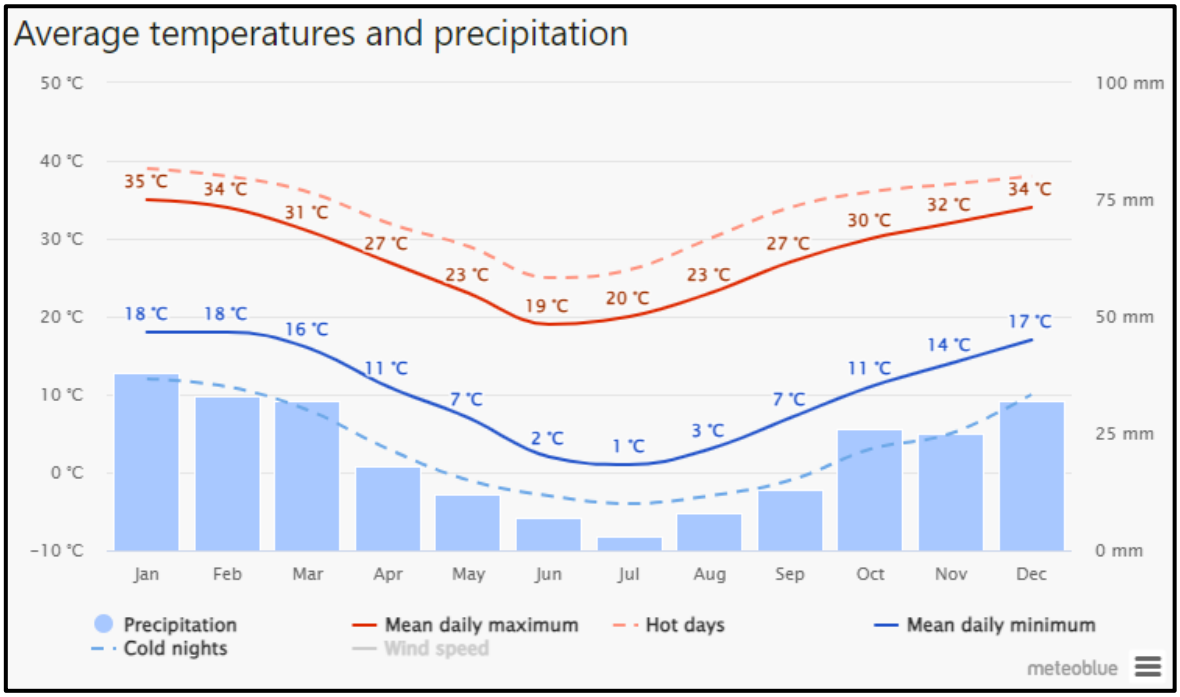


Figure 20: Average temperatures and precipitation for Douglas (image obtained from https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/douglas_south-africa_1008612).

Although the Douglas weather station is nearest to the application area, this station does not have statistical information available. Considering this the information of the Prieska weather station was used. According to this station the prevailing wind direction of the area is in a south-eastern direction with an average wind speed of ±12 km/h. The following figure shows the monthly wind distribution of the Prieska area within proximity to the application area.

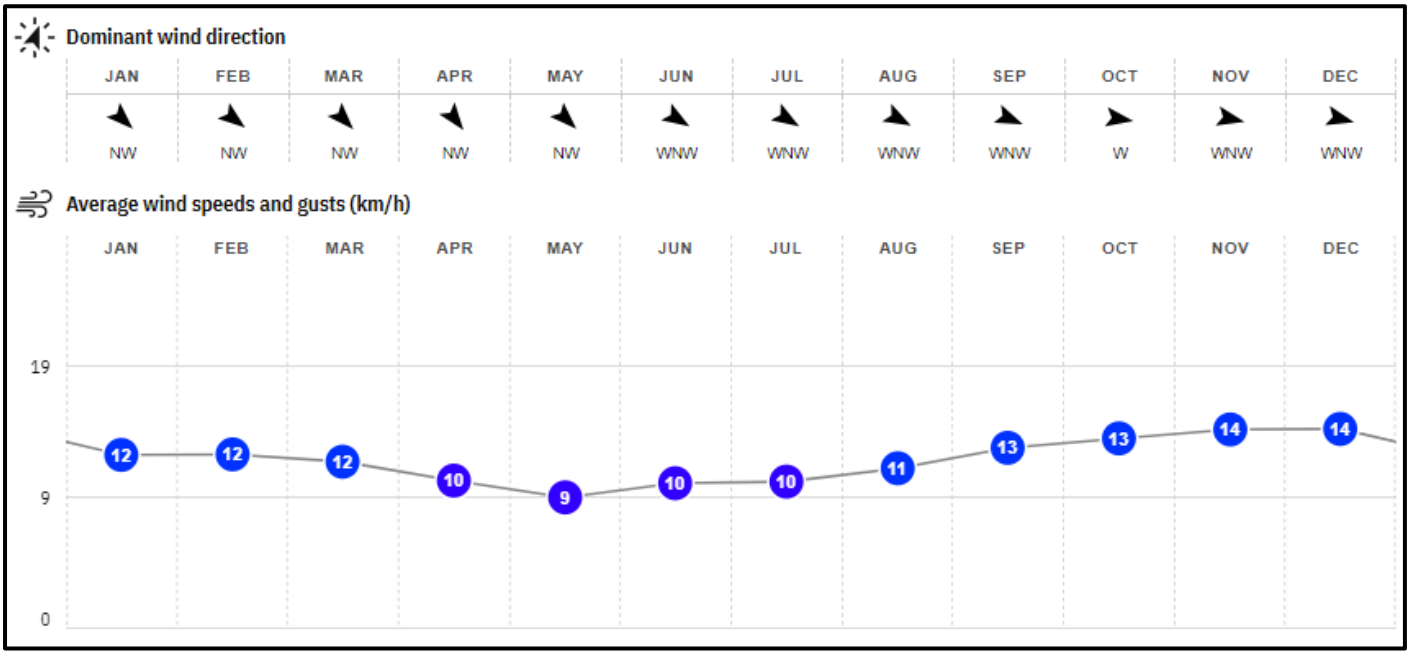


Figure 21: Monthly wind speed statistics and directions for Prieska (image obtained from www.windfinder.com/windstatistics/prieska).

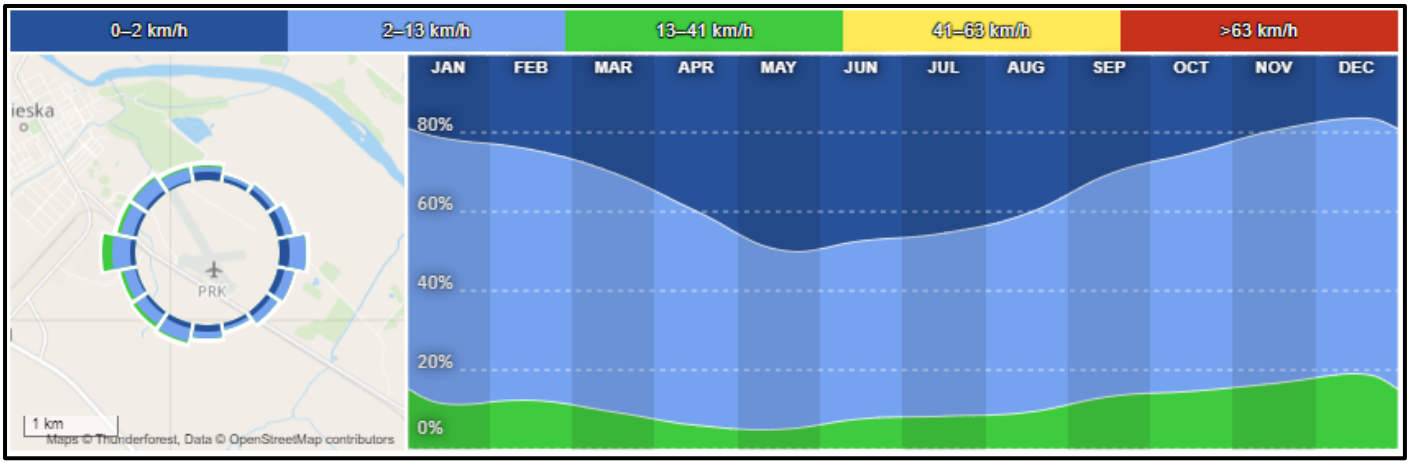


Figure 22: Monthly wind direction and strength distribution for Prieska (image obtained from www.windfinder.com/windstatistics/prieska).

TOPOGRAPHY

Topographically, the Griqualand-West sub-basin is generally flat lying, characteristic of the dolomitic basal sequence, with mountainous areas associated with more competent rocks – which in this area comprises siliceous cherts, shales, lavas and locally, iron and manganese-rich formations.

KURUMAN & BARKLY WEST ADMINISTRATIVE DISTRICT

As evident in the following figure, the topography of the greater study area gradually rises from the earmarked portion on the farm LKNR No 219 (±1243 mamsl) to the more southern farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms). Also note the mountain range bordering the earmarked farms to the west.

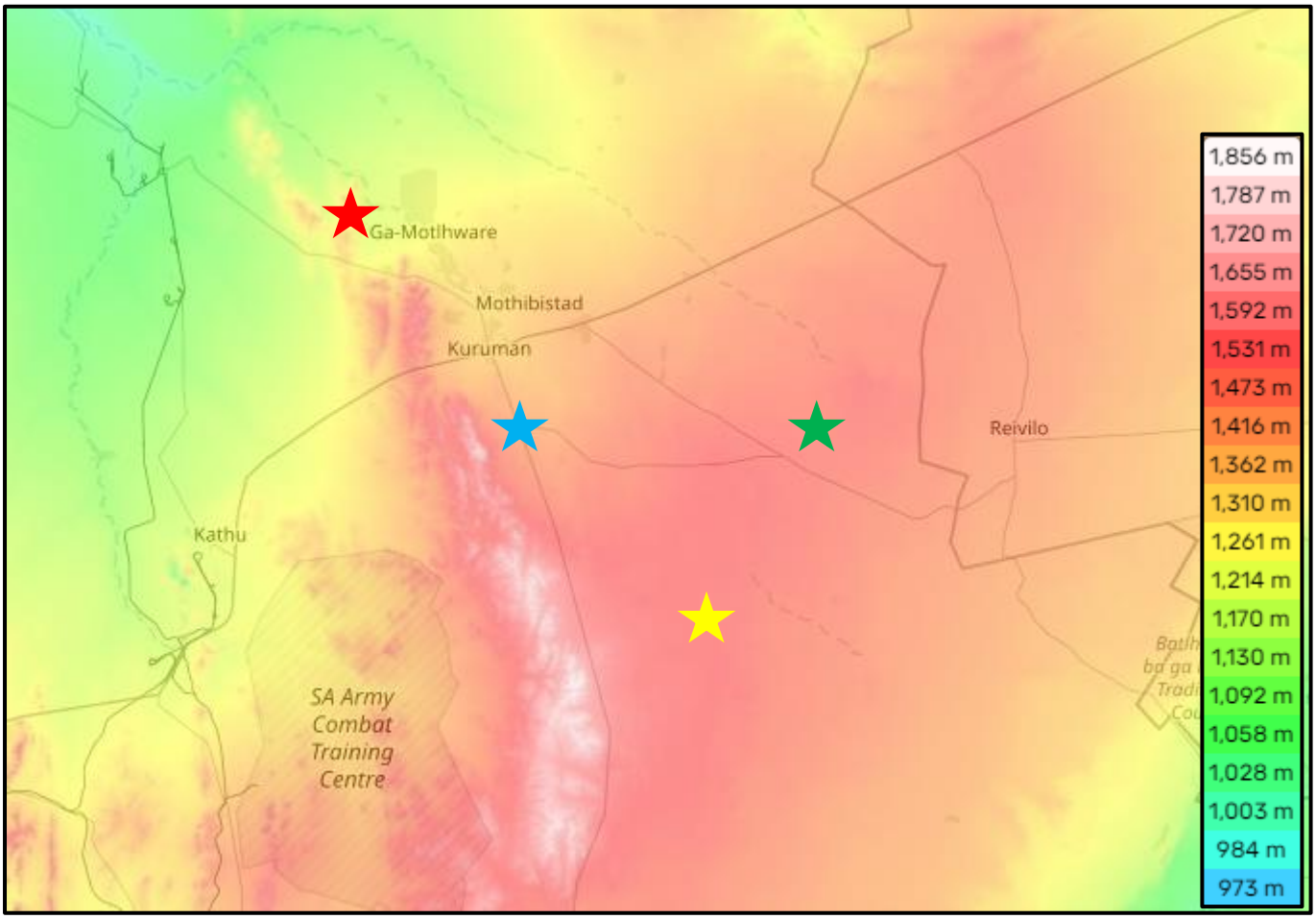


Figure 23: Map showing the topography of the greater study area where the red star indicates the application area on the farm LKNR No 219, the blue star shows the farms Edgehill No 194 and Alphen No 442, green star is representative of the farms near Boland No 133, and the yellow star indicates the farms near Brandziekfontein No 124 (image obtained from https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-27.62514%2C23.74695&zoom=9).

HAY ADMINISTRATIVE DISTRICT

The same mountain range evident in the previous figure extends south towards Griekwastad, with the earmarked farms Hartebeestdale No 564 and Kogelbeen No 44 bordering the range to the east. The topography dips slightly between the most southern point of Kogelbeen No 44/RE (1396 mamsl) and the western boundary of Kogelbeen No 44/2 (1381 mamsl). From there the topography rises towards the north as it heads into the foothills of the mountain range.

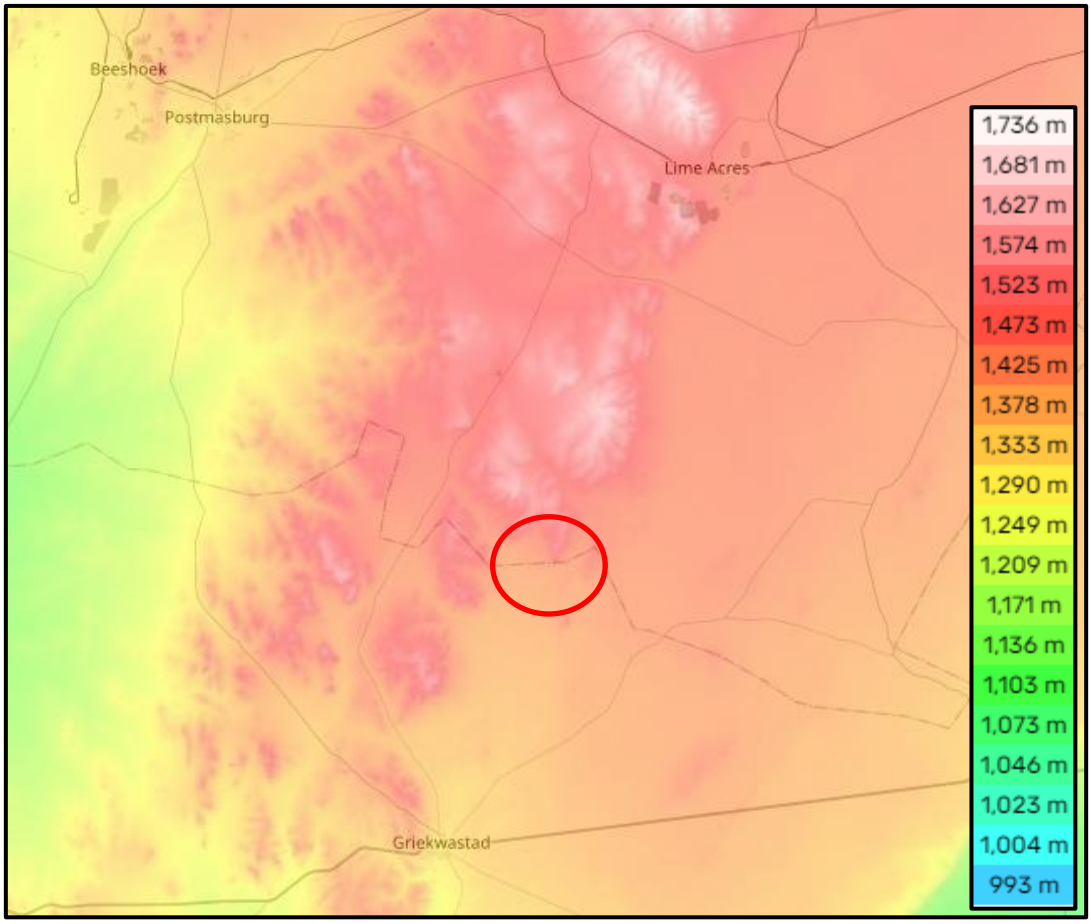


Figure 24: Map showing the topography of the greater study area near the farms Hartebeestdale No 564 and Kogelbeen No 44 (red circle). (image obtained from https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-28.58814%2C23.41049&zoom=10).

HOPETOWN ADMINISTRATIVE DISTRICT

The topography of the study area drastically changes moving from the inland plateau of South Africa towards the floodplains of the Orange River as shown below. The farm Banghoek No 17 borders onto the southern bank of the Orange River at ±1 000 mamsl. The farm is dissected by drainage lines and tributaries flowing towards the river.

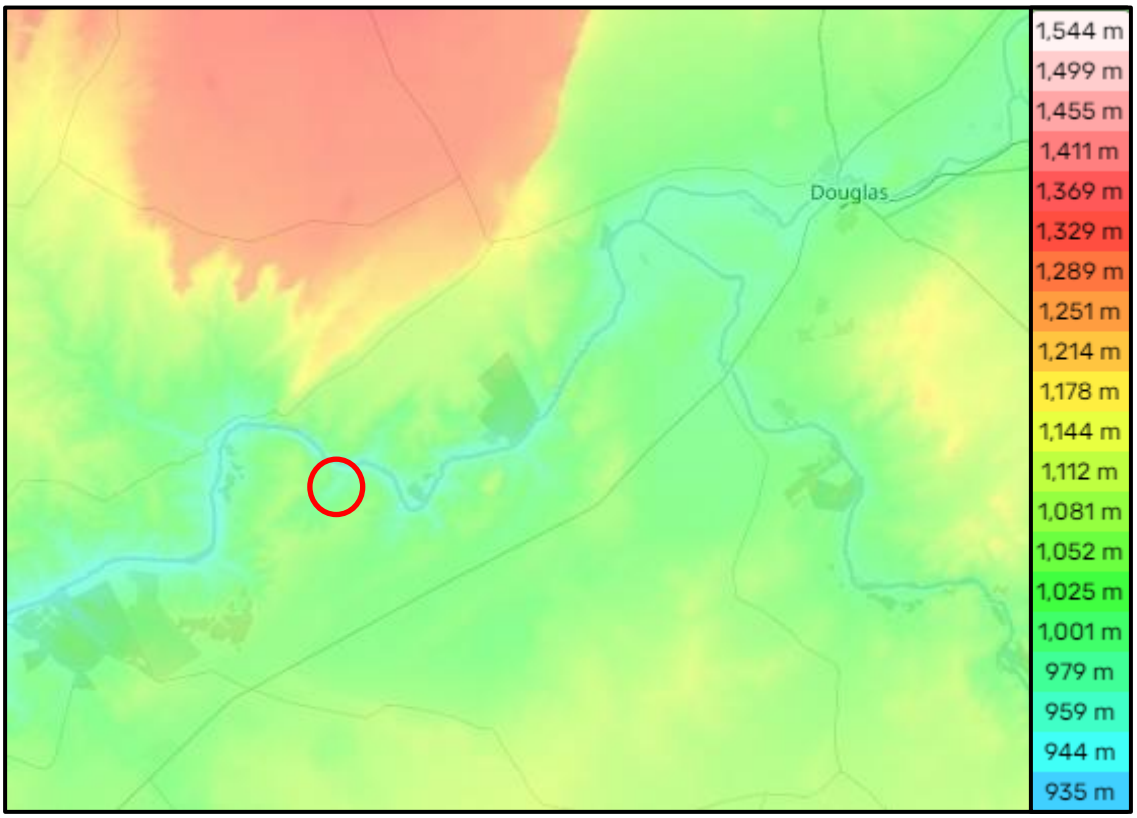


Figure 25: Map showing the topography of the greater study area near Banghoek No 17 (red circle). (image obtained from https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-29.16415%2C23.51074%zoom=10).

VISUAL CHARACTERISTICS

The visual character of the greater study areas (Kuruman, Barkly West, Hay & Hopetown Districts) mainly comprise of an agricultural setting intersected by mining, road-, railway- and electricity infrastructure. Through the years the Kuruman and Postmasburg (Hay) areas have 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 Kuruman, Postmasburg, Griekwastad and Douglas have a low aesthetic value.

The immediate surrounding land uses, adjacent to the earmarked farms, comprise mainly of agricultural activities (grazing). Small scale mining occur/ed on some of the surrounding properties, although some of these mines such as the Riries Asbestos Mine near LKNR No 219 has been closed. Due to the pleasing undisturbed nature of the area, the land use of some of the properties were also extended to include tourism where guest farms/venues were established. The aesthetic ambiance of the region is high and represents that of a rural area with highly natural landscapes.

GEOLOGY AND SOIL

1. 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.

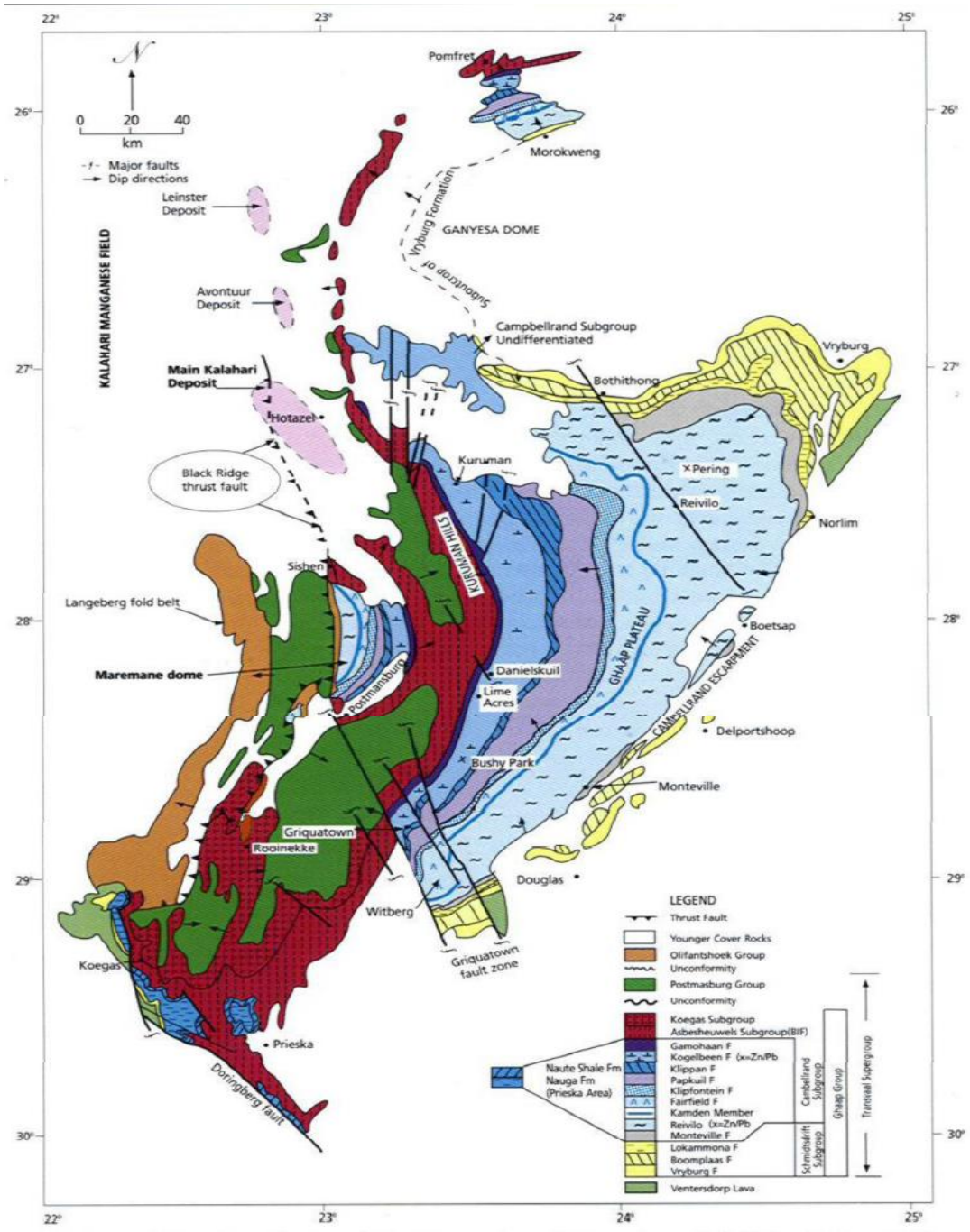


Figure 26: Geological map of Griqualand West (modified from Beukes 1986) (image obtained from Gamagara Resources (Pty) Ltd 2019).

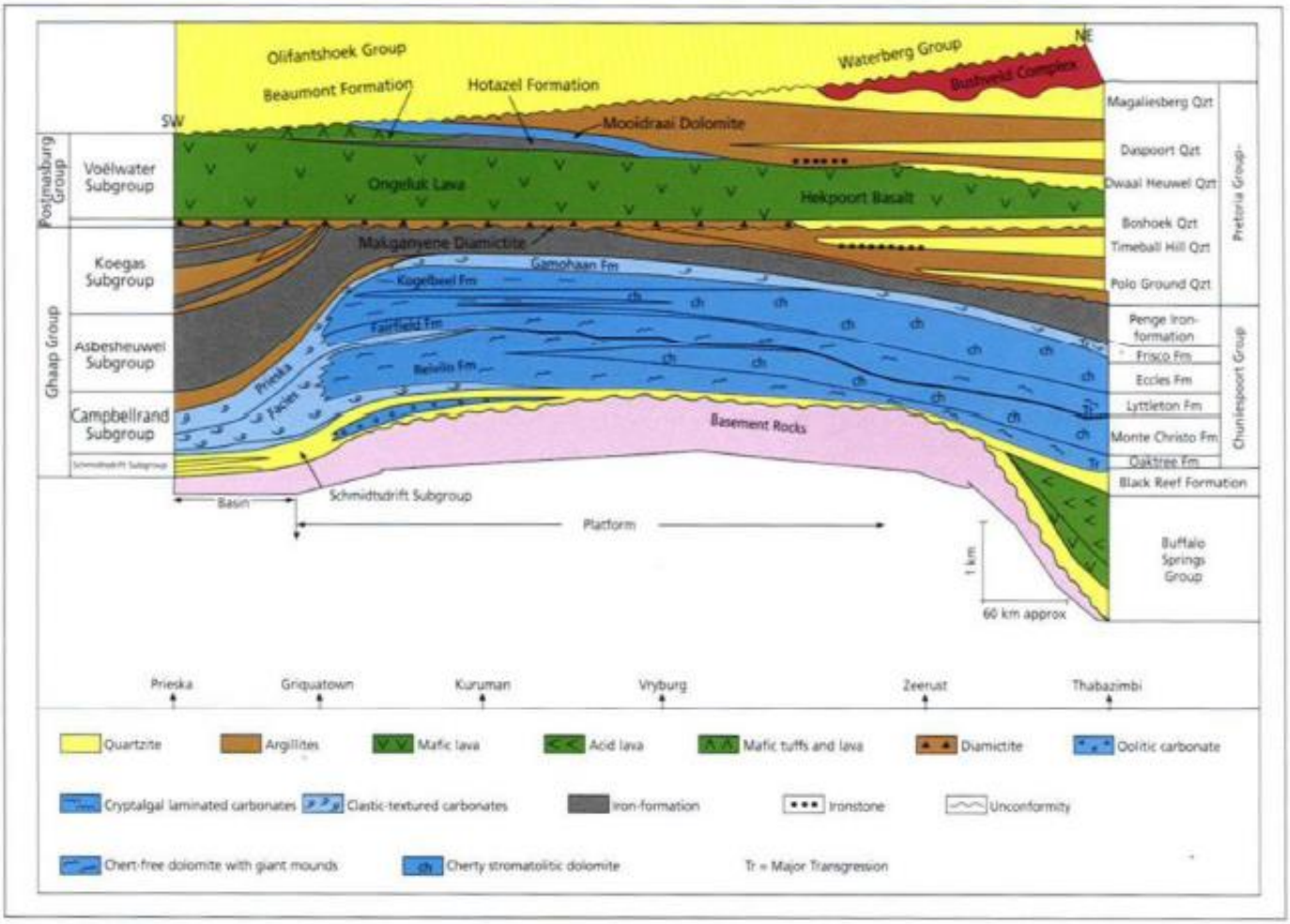


Figure 27: A southwest-northeast 600 km cross-section showing the simplified geology of the Transvaal Supergroup and the distribution of other important geological features (modified from Beukes 1983) (image obtained from Gamagara Resources (Pty) Ltd 2019).

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).

2. 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).

2.1 Schmidtsdrif Subgroup

The basal Schmitsdrif Subgroup comprises fluvially deposited feldspatic quartz arenites, shallow marine and intertidal quartz arenites as well as a platformal carbonate sequence (Beukes, 1979).

2.2 Campbellrand Subgroup

The Campbellrand Subgroup consists of stromaolitic 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.

2.3 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.

2.4 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

3. 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).
- Mooidraai 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 Mooidraai, the Hotazel, Ongeluk, Makganyene and Asbesheuwel Formations to finally rest on dolomites of the Campbellrand Subgroup on the Maremane Dome near Postmasburg.

4. 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 hematitepebble 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 (Iscor and Beeshoek), where it truncates the Campbellrand dolomites, manganese mineralization is developed (Postmasburg Manganese Field).

5. STRUCTURAL GEOLOGY

As was mentioned earlier, deposition of the early Proterozoic sequence in Griqualand West took place along the western margin of the Kaapvaal Craton Alterman and Halbich (1990 and 1991) recognized an early phase of thrusting within the Asbesheuwel Formation, pre-dating the deposition of the Makganyene Diamictite. The eastward convex shape of these F1 axial traces around the Maremane double plunging anticline, is seen as part of this deformational phase (Alterman and Halbich 1990 and 1991).

Structurally the area may be divided into two distinct domains, separated by a major post Olifantshoek fault, the “Blackridge Thrust”.

The area to the east of, and in the footwall of the thrust, is characterized by gently plunging north-south trending open dome and basin structures. Dips are gentle, normally less than 10o. Faulting is dominated by N-S, ENE-WSW trending high angle extensional structures, which often display a scissors, type movement. Within the Postmasburg area the development of a prominent domal structure, known as the Maremane Dome, resulted in the deformation of the primary north-south trending fold axis of the Ongeluk-Witwater and Dimoten synclines toward the southwest (Ongeluk-Witwater) and toward the northeast Dimoten.

The area toward the west of the thrust is characterized by an imbricated fold and thrust belt with fairly tight double plunging eastward verging north-south trending folds. The overall ramp-like shape of the carbonate platform at the margin of the Kaapvaal Craton in the area obviously facilitated and accentuated this structural

event. This deformation event postdates that outlined above and must have taken place prior to 1780 Ma.

An additional deformational phase, which resulted in gentle folding and high angle faulting of the stratigraphy and deformation of both thrusts sets, served to complicate matters, especially toward the Craton margin. The effects of this event decrease northward and eastward into the Craton. Because the fold axes are parallel to the general strike of structures in the Namaqua Mobile Belt, this event is assumed to be of Namaquan age (1100 Ma).

Dolerite dykes and sills occur throughout the area and represent several episodes of intrusion from Ongeluk to Karoo times. These trend approximately NNE-SSW near Olifantshoek but toward the east they follow a N-S and ENE-WSW trend.

6. MINERALOGY

Economic deposits (past and present) comprise the following:

- Iron (Postmasburg and Sishen).
- Manganese (Kalahari Manganese Basin and the Postmasburg Manganese Field).
- Crocidolite (Asbesheuwel Subgroup).
- Limestone deposits (Lime Acres and Danielskuil).
- Zinc/Lead (Pering and Bushy Park).
- Diamonds (Finch and Postmasburg).

7. POSTMASBURG MANGANESE FIELD

7.1 Stratigraphy and Structural Geology

The rock Stratigraphy, from the base upward, comprises Campbellrand dolomites, followed by Gamagara shales (Mapedi equivalent of the Olifantshoek Group), which represent the host rock to manganese mineralization, along the western belt. The shales are overlain by the Marthaspoort quartzite, which displays a fine crystalline texture and varies in colour from brown at the base to light green and white up the sequence. The quartzite is often quite manganiferous near the base.

The rock stratigraphy was subjected to intense deformation during the Namaqua tectonic event and subsequently slumped into sinkholes. Folding is of the isoclinal-type, with both limbs dipping in the same direction. Overturned folds are present causing the stratigraphy to be inverted along the overturned limb. From field

observations it is quite clear that at least two phases of deformation were involved. A roughly north-south trending fold phase has been overprinted by later north-east to southwest trending fold sets. A thrust fault, referred to as the Black Ridge Thrust, follows the Maremane Dome along the western limb and transported older rocks (Ongeluk lavas and Makganyene diamictites) over the younger Olifantshoek Group. Northeast to southwest trending dykes is present within the area and are important structures for ground water prospecting.

8. BASE METALS (SULPHATES)

Copper is one of the most essential industrial metals. The main properties making it a valuable commodity are its high electric and thermal conductivity. Furthermore, it is resistant to almost all forms of erosion.

Zinc is a very important base metal. It is used in casting and rolled zinc is a major alloying ingredient in many forms of brass. In the industrial arena it is used as fillers in rubber and paints while in the gold mining industry it is used to precipitate gold from cyanide solution. Zinc oxide is used in agriculture.

Lead is one of the most important nonferrous metals and its use dates back about 5000 years. Lead is employed in the metallic form and as various chemical compounds. It is used in communication equipment and electrical power transmission, in the construction industry and the manufacture of medical chemicals and pesticides.

Copper was discovered along metamorphized volcanic rocks near the town of Prieska. Van Wyk (1980) documented the presence of small quantities of copper, along a brecciated lava (Ongeluk Sub-Group) outcrop, exposed on the farm Miershoop (68, magistral district; Hay).

Beukes (1978) suggested that bioherms (ancient carbonate rock formation consisting of the fossilized remains of corals, algae, mollusks, and other sedentary marine life), located along the upper unit of the Naragas formation of the Koegas Sub-Group, may act as host to copper sulphates.

Beukes also recorded the association of lead and zinc sulphates to karst structures and fault zones within dolomite of the Campbellrand Sub-Group. This was proved to be an accurate observation with the discovery of the lead and zinc deposit at

Pering close to Reivilo (Weatherley et al. 1986). These types of occurrences are regarded as the oldest representatives of Mississippi Valley-type Pb-Zn deposits.

9. LITHIUM (BASE METAL)

Lithium is currently one of the most sought-after minerals. Besides various uses in metallurgy, welding, brazing and the production of hydrogen it lately became essential in the battery industry.

Traces of Lithium was detected within the Wolhaarkop Formation of the Campbellrand Sub-Group. Though the discovery there off is recent, it appears that the presence of small quantities of lithium are limited to the manganiferous horizons within the chert-breccia. Lab results indicate that the chert breccia may host up to 2% Lithium. This was confirmed with an (unpublished to date) thesis done by Rhodes University under the mentorship of Prof Hari Tsikos. Although a 2% lithium content seems low, it must be noted that lithium grades >0.5% is regarded as economically feasible.

The manganiferous horizons within the Koegas Sub-Group (Nelani Formation, Rooinekke Iron Formation and Naragas Formation) might also act as host to the mineral.

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 Lower Kuruman Native Reserve (LKNR) No 219, Edgehill No 194, Alphen No 442, Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, a portion of Boland No 133 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 earmarked portion on LKNR No 219 lays ±2 km south-west of the Kuruman River. The SANBI BGIS Mapviewer does not indicate other watercourses and/or wetlands within the earmarked portion. As shown in the following figure, the earmarked portion does fall within an Upstream River FEPA (Freshwater Ecosystem Priority Area). Upstream Management Areas are sub-quaternary catchments in which human activities need to be managed to prevent degradation of downstream river FEPAs and Fish Support Areas. Upstream Management Areas do not include management areas for wetland FEPAs, which need to be determined at a fine scale. (WRC Report No TT 500/11, 2011)

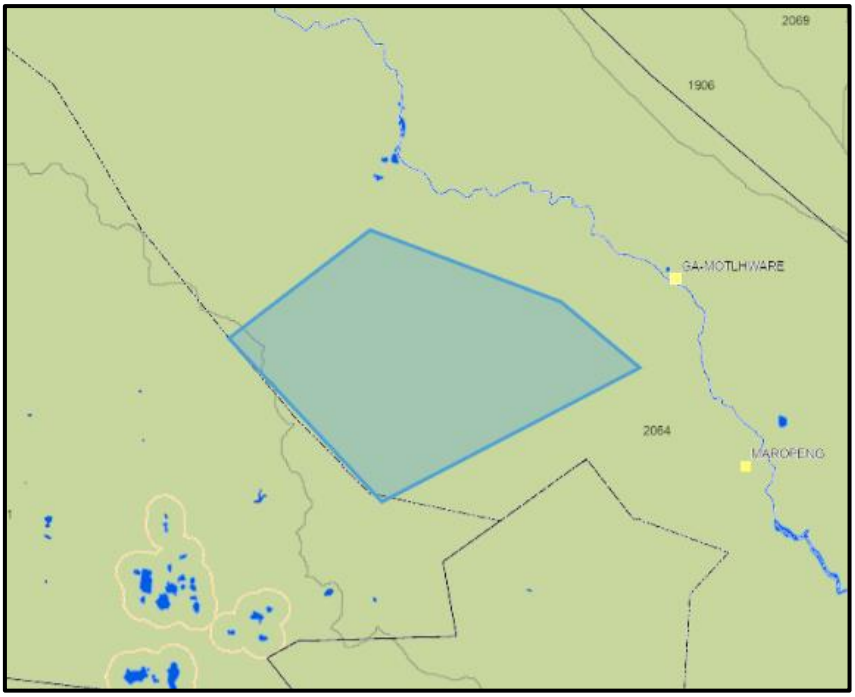


Figure 28: Map showing the earmarked area (blue polygon) on the farm LKNR No 219 within the Upstream River FEPA (light green shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

An unnamed stream passes through Portion 5 and the RE (Remaining Extent) of Edgehill No 194 as shown below. The BGIS Mapviewer also indicates three wetlands on Portions 1 and 2 of Edgehill No 194. The SANBI BGIS Mapviewer does not indicate other watercourses and/or wetlands on the farm Alphen No 442. As shown in the following figure, the earmarked farms extend into the same Upstream River FEPA mentioned previously.

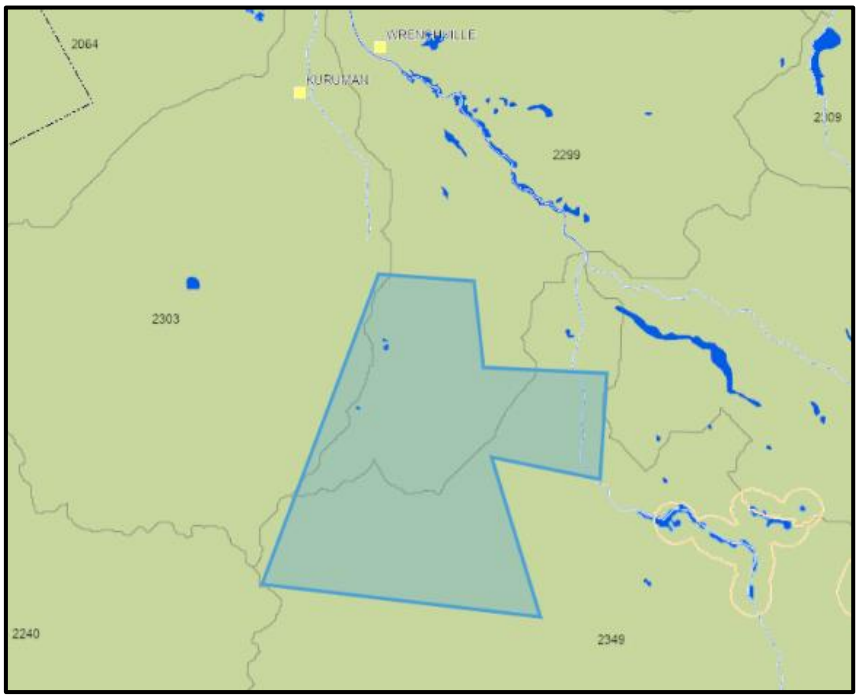


Figure 29: Map showing the earmarked area (blue polygon) across the farms Edgehill No 194 and Alphen No 442 within the Upstream River FEPA (light green shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

The SANBI BGIS Mapviewer indicates various wetlands in the surrounds and on the farms Mahura Muthla No 198 and Mora Schuba No 201 as shown below. Both these farms also extend into the Upstream River FEPA.

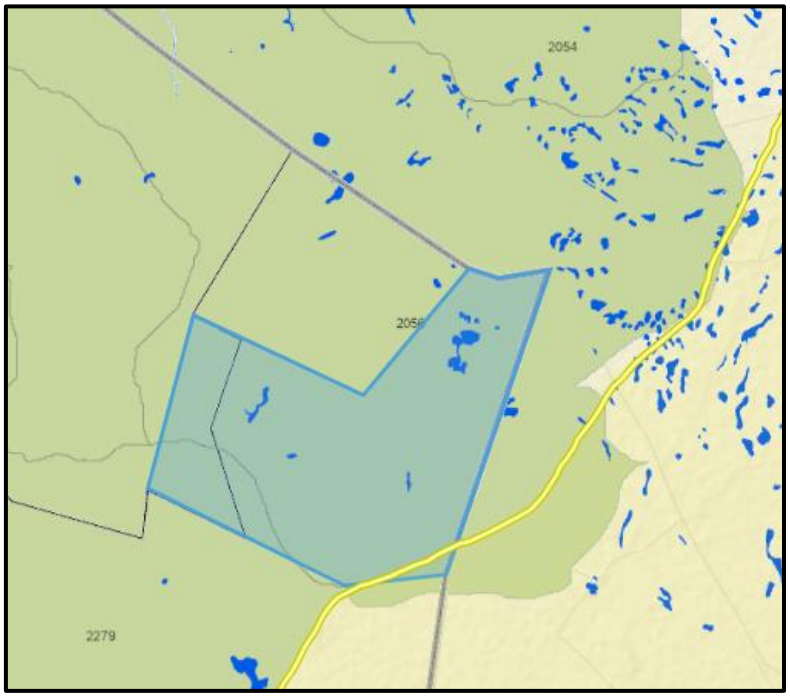


Figure 30: Map showing the earmarked area (blue polygon) across the farms Mahura Muthla No 198 and Mora Schuba No 201 within the Upstream River FEPA (light green shading). Also note the wetlands (dark blue polygons) shown on and in the vicinity of the farms. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

As mentioned earlier, Kungkung No 123, Seduall No 124, a portion of Boland No 133 are within the Molopo SWMA which is managed as part of the Lower Vaal WMA. The eastern part of Boland No 133 is within the Harts SWMA divided from the Molopo SWMA by a yellow line in the following figure. From this figure it is also evident that the Molopo SWMA section is classified as an Upstream River FEPA, while the Harts SWMA section does not extend into a FEPA. The mapviewer indicates various wetlands within the earmarked area with the Matlhwaring River crossing into Kungkung No 123 as well as Portions 1, 2 of Seduall No 124. An unnamed stream crosses through the south-western corner of Boland No 133.

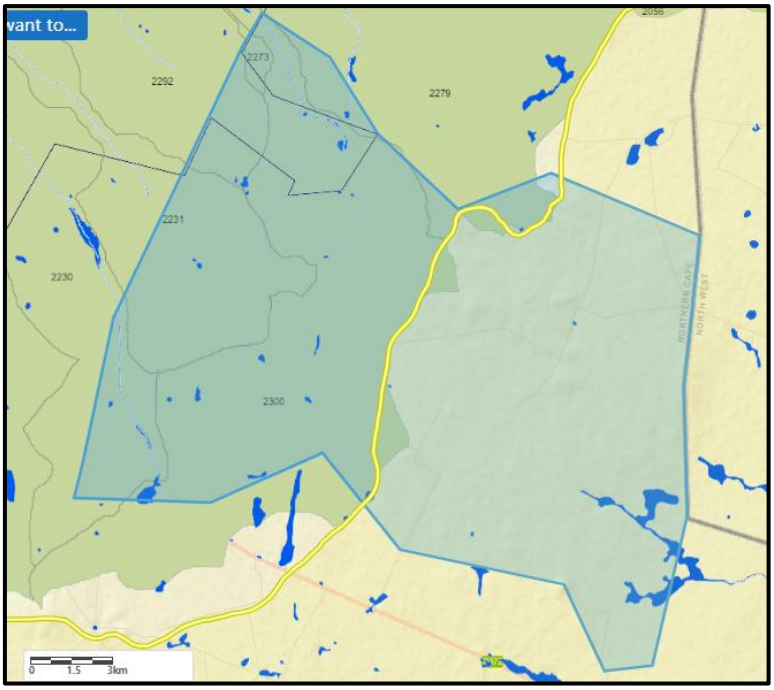


Figure 31: Map showing the earmarked area (blue polygon) across the farms Kungkung No 123, Seduall No 124, and Boland No 133 within the Upstream River FEPA (light green shading). Also note the wetlands (dark blue polygons) shown on and in the vicinity of the farms. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

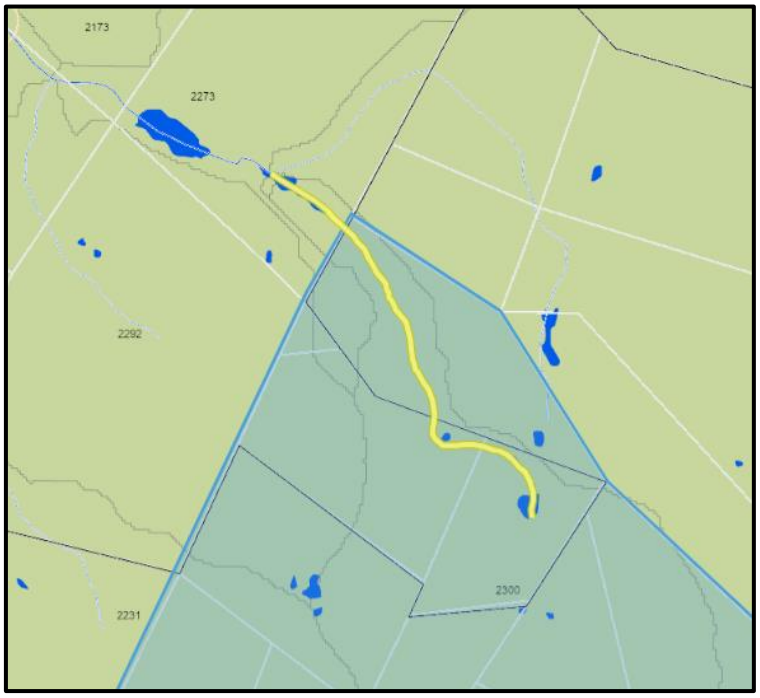


Figure 32: Position of the Matlharing River (yellow line) crossing into the farms Kungkung No 123 and Seduall No 124. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

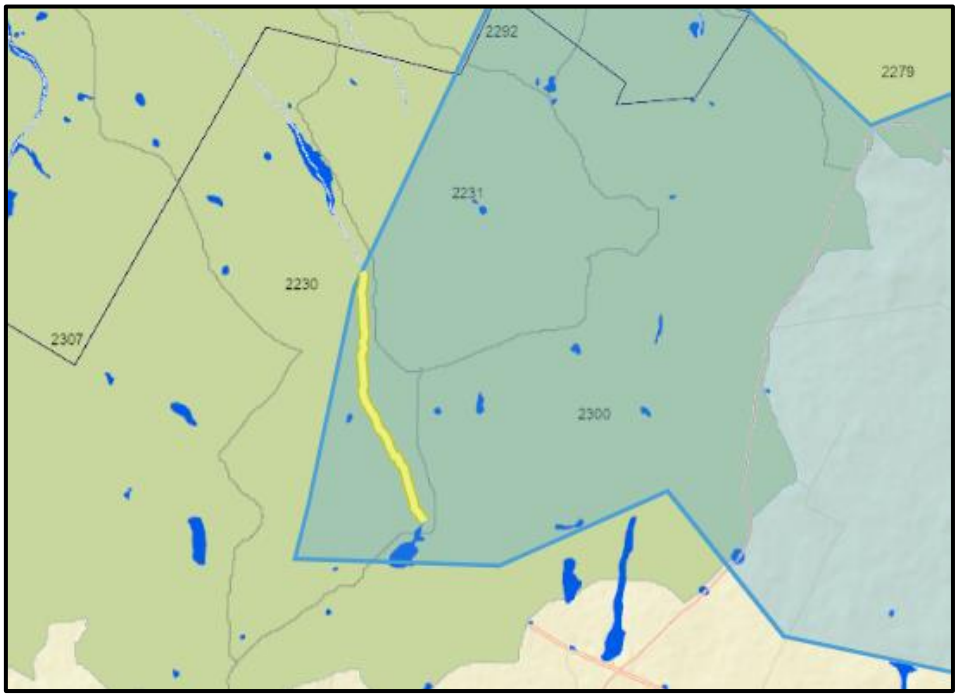


Figure 33: Position of the unnamed stream (yellow line) crossing into the southern corner of Boland No 133. (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

The farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) are within the Harts SWMA which is managed as part of the Lower Vaal WMA. As shown in the following figure an unnamed tributary passes through the farms Helvetia No 126 and Brandziekfontein No 124 before joining up with the Klein-Boetsap River

east of the farms near Blikfontein. Various wetlands are indicated on the study area. The south-eastern corner of Farm No 123 (Toekoms) again extends into an Upstream River FEPA.

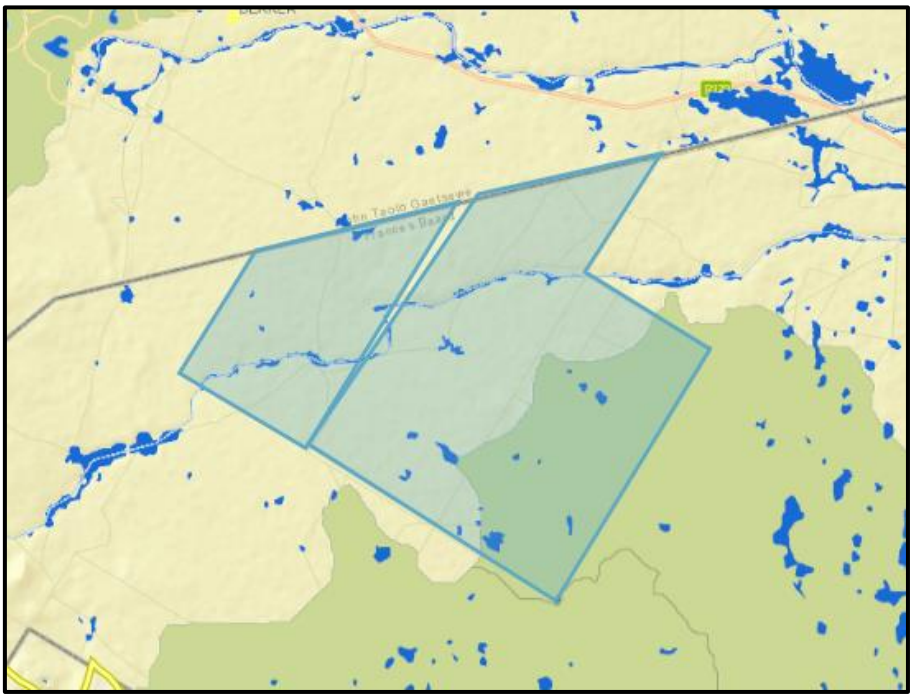


Figure 34: Position of the unnamed tributary (dark blue line) flowing through the farms Helvetia No 126 and Brandziekfontein No 124. Also note the Upstream River FEPA (light green shading) in the south-eastern corner of Farm No 123 (Toekoms) (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

The farms Hartebeestdale No 564 and Kogelbeen No 44 are within the Orange SWMA which is managed as part of the Lower Orange WMA. The entire footprint is within a river FEPA and the Eastern Kalahari Bushveld Group 3 Wetlands Cluster borders the study area to the west. An unnamed stream crosses into the study area to the east. This stream feeds the Eastern Kalahari Bushveld Group 5 Wetlands Cluster to the south.

River FEPAs achieve biodiversity targets for river ecosystems and threatened/near threatened fish species and were identified in rivers that are currently in a good condition (A or B ecological category). Their FEPA status indicates that they should remain in a good condition to contribute to national biodiversity goals and support sustainable use of water resources. Although FEPA status applies to the actual river reach within such a sub-quaternary catchment. The shading of the whole sub-quaternary catchment indicates that the surrounding land and smaller stream network need to be managed in a way that maintains the good condition (A or B ecological category) of the river reach. (WRC Report No TT 500/11, 2011)

Wetland clusters are groups of wetlands embedded in a relatively natural landscape. This allows for important ecological processes such as migration of frogs and insects between wetlands. Wetlands do not have to have FEPA status to belong to a wetland cluster (although clusters with a high proportion of wetland FEPAs were favoured in identifying wetland clusters). (WRC Report No TT 500/11, 2011)

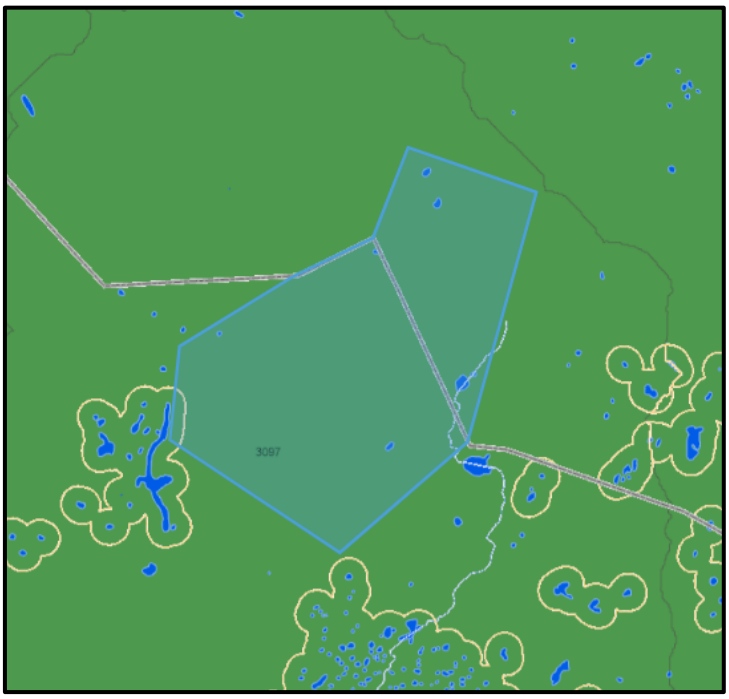


Figure 35: Position of the wetland clusters (Group 3 west, and Group 5 south) in relation to the application area on the farms Hartebeestdale No 564 and Kogelbeen No 44. Also note the entire area falling with a FEPA (dark green shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

The farm Banghoek No 17 borders the Orange River to the north. The farm is also within the Orange SWMA and the area is classified as a Fish Support Area (FSA). Also note the fish symbol in the following figure indicating a sub-quaternary catchment of a fish sanctuary. Fish sanctuaries are rivers that are essential for protecting threatened and near threatened freshwater fish that are indigenous to South Africa. The black fish indicates the presence of vulnerable and near threatened fish populations. Fish sanctuaries in a river classified with lower than an A or B ecological condition are identified as FSA and include sub-quaternary catchments that are important for migration of threatened or near threatened fish species. (WRC Report No TT 500/11, 2011). No wetlands are indicated on the property.

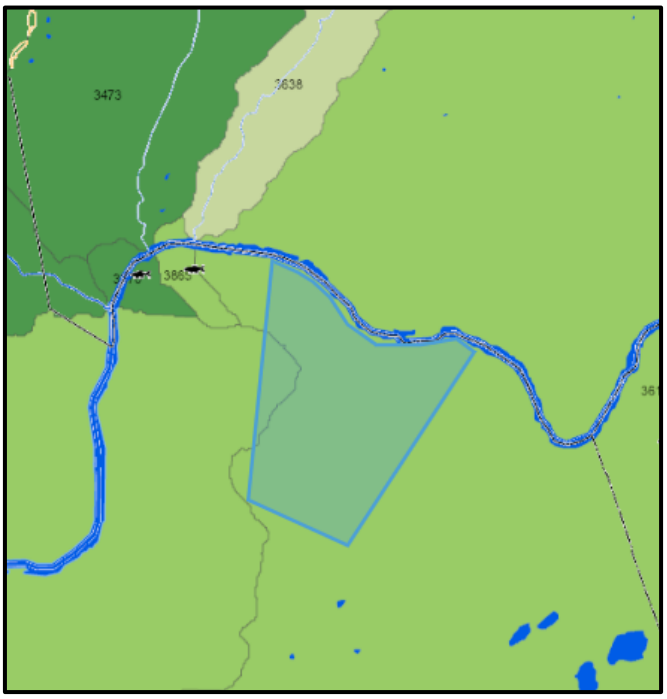


Figure 36: Position of the farm Banghoek No 17 (blue polygon) in relation to the Orange River (blue line). Also note the entire area falling with a FishFSA (green shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

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

BIOLOGICAL ENVIRONMENT

BIODIVERSITY CONSERVATION AREAS

According to the DFFE Screening Report (see following image) an Ecological Support Area (ESA) is present over most of the earmarked area on the farm LKNR No 219. 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."*

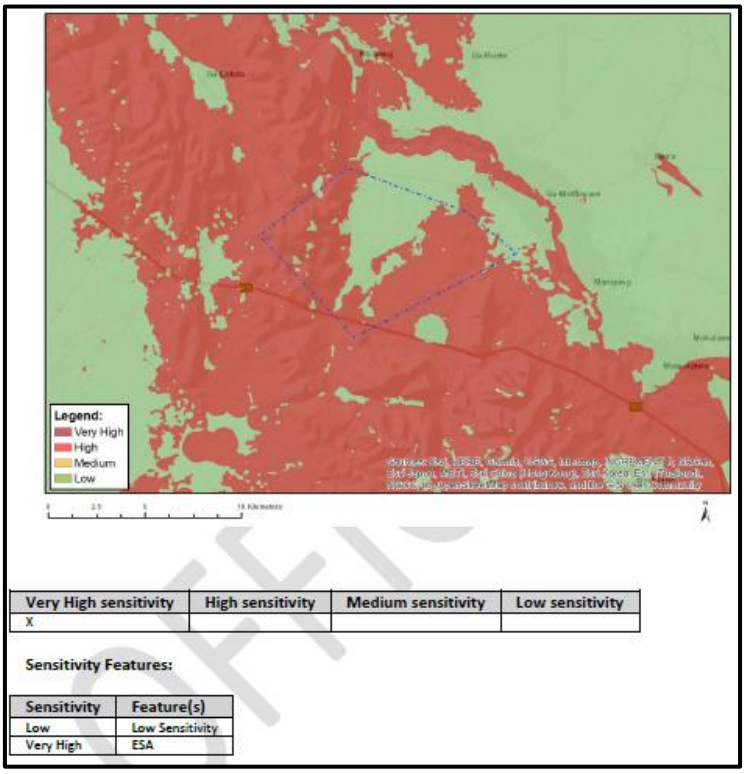


Figure 37: Terrestrial Biodiversity theme sensitivity of the earmarked area on LKNR No 219 according to the DFFE screening report.

The same ESA (discussed above) extends down to the farms Edgehill No 194 and Alphen No 442 as shown below.

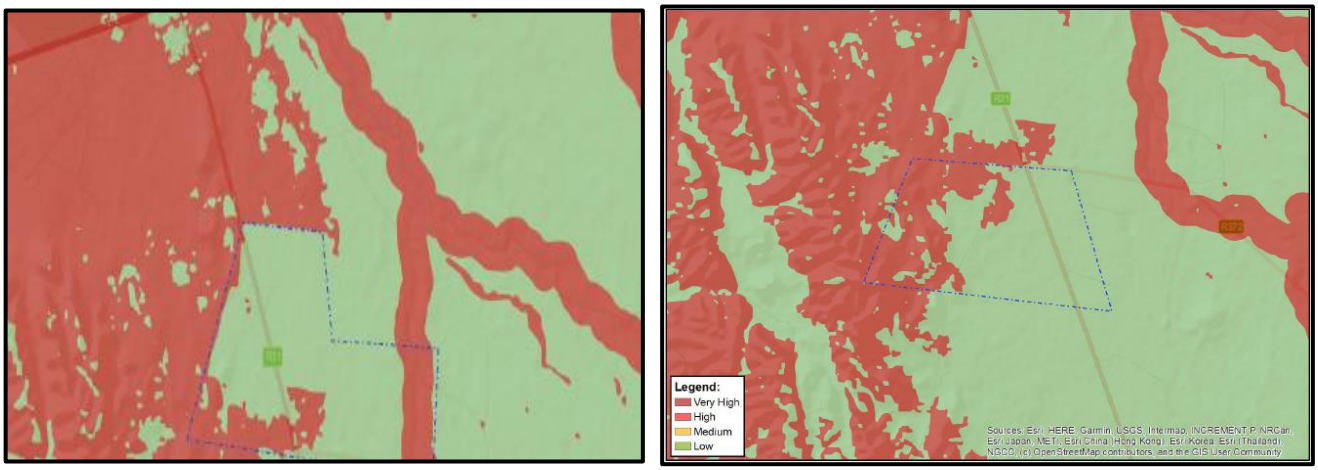


Figure 38: Terrestrial Biodiversity theme sensitivity of the farms Edgehill No 194 (left) and Alphen No 442 (right) according to the DFFE screening report.

Most of the farm Mahura Muthla No 198 is within an ESA and according to the DFFE screening report the farm also borders onto a National Protected Area Expansion Strategy (NPAES). To the east, only the eastern half of the farm Mora Schuba No 201 extends into an ESA as shown below.

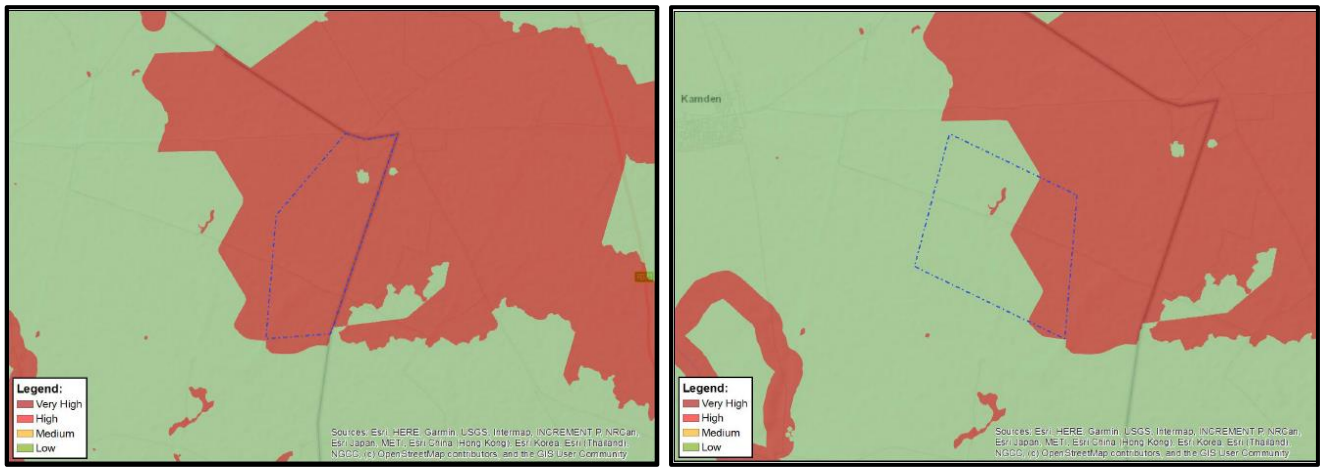


Figure 39: Terrestrial Biodiversity theme sensitivity of the farms Mahura Muthla No 198 (left) and Mora Schuba No 201 (right) according to the DFFE screening report.

The ESA associated with the farms Kungkung No 123 and Seduall No 124 follows the route of the watercourses crossing into it. Only a small portion, that corresponds with the unnamed stream passing through Boland No 133 to the west is classified as ESA. The rest of the farm is deemed to be of low sensitivity.

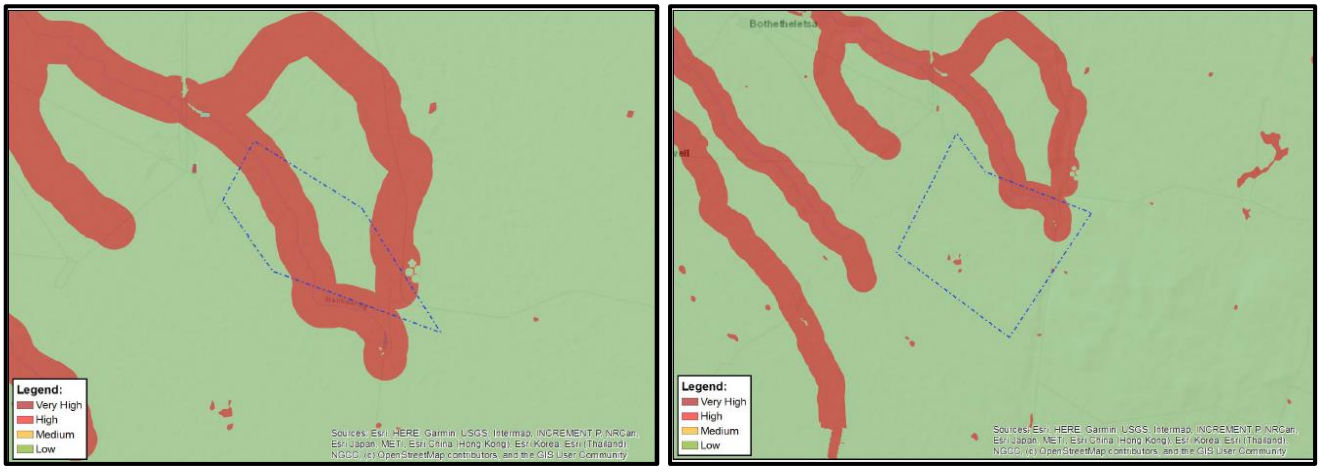


Figure 40: Terrestrial Biodiversity theme sensitivity of the farms Kungkung No 123 (left) and Seduall No 124 (right) according to the DFFE screening report.

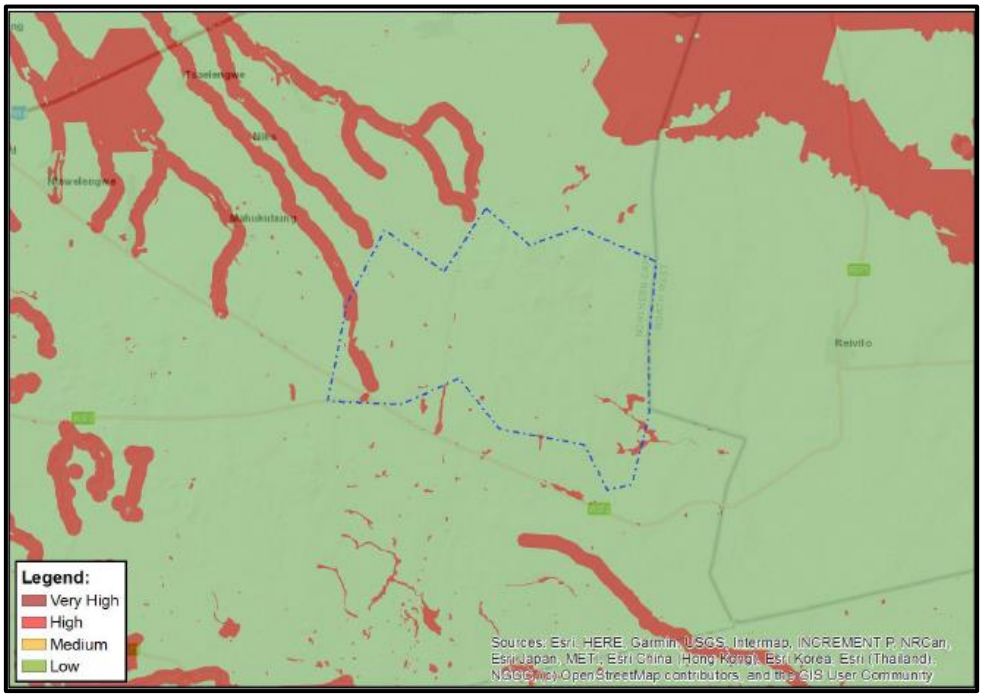


Figure 41: Terrestrial Biodiversity theme sensitivity of the farm Boland No 133 according to the DFFE screening report.

Similarly the ESA associated with the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) follows the route of the watercourse crossing into it.

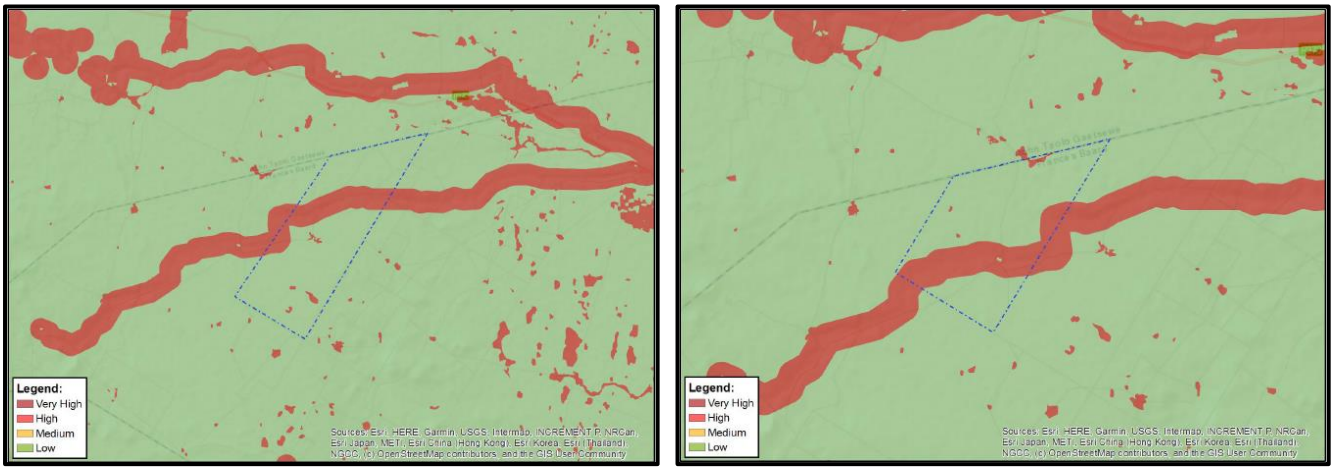


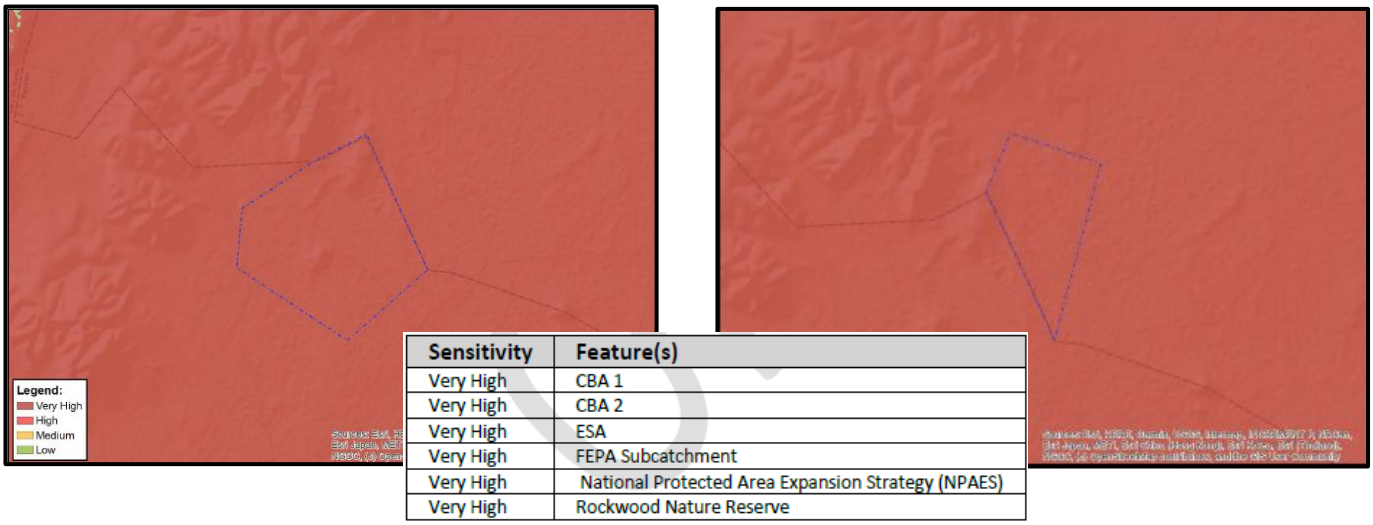
Figure 42: Terrestrial Biodiversity theme sensitivity of the farms Helvetia No 126 (left) and Brandziekfontein No 124 (right) according to the DFFE screening report.

Figure 43: Terrestrial Biodiversity theme sensitivity of Farm No 123 (Toekoms) according to the DFFE screening report.

According to the DFFE screening report the farms Hartebeestdale No 564 and Kogelbeen No 44 lay within a NPAES, Critical Biodiversity Area (CBA), ESA, and the Rockwood Nature Reserve was declared over Hartebeestdale No 564 as presented below.

The Lexicon of Biodiversity Planning in South Africa provides the following definition for a 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."*



Sensitivity	Feature(s)
Very High	CBA 1
Very High	CBA 2
Very High	ESA
Very High	FEPA Subcatchment
Very High	National Protected Area Expansion Strategy (NPAES)
Very High	Rockwood Nature Reserve

Figure 44: Terrestrial Biodiversity theme sensitivity of the farms Hartebeestdale No 564 (left) and Kogelbeen No 44 (right) according to the DFFE screening report.

According to the Protected Areas Register of South Africa, the Rockwood Nature Reserve extends across the following properties:

- Rockwood No 555;
- Farm No 554;
- Portion 1 of Farm No 555;
- Portion 2 of Farm No 563;
- Hartebeestdale No 564; and
- Portion 1 of Hartebeestdale No 564.

The nature reserve (as presented below) was declared on 04 September 2018 and extends across ±9 178 ha.

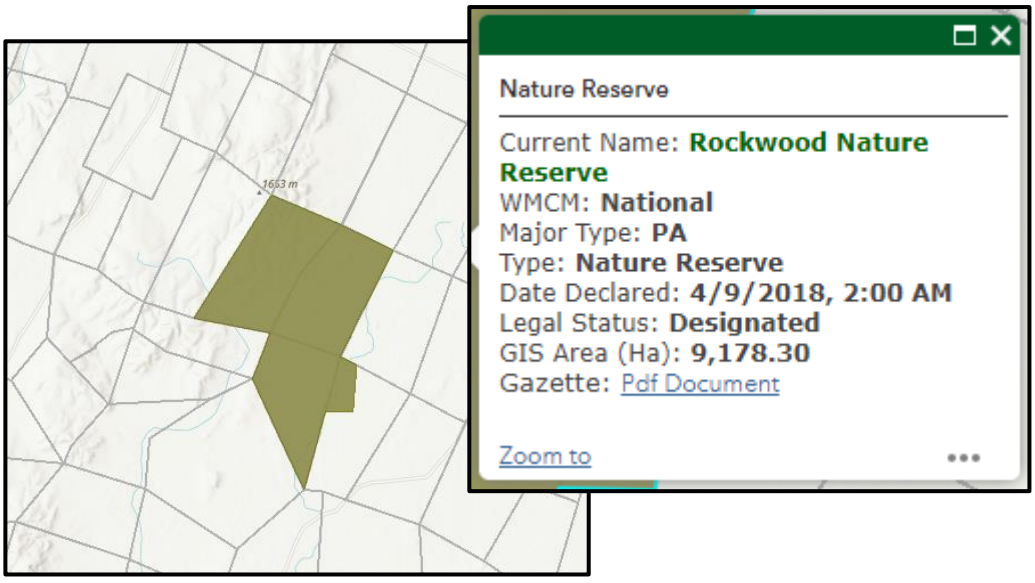


Figure 45: Extent of the Rockwood Nature Reserve (Protected Areas Register).

The farm Banghoek No 17 falls entirely within a CBA and ESA as presented below.

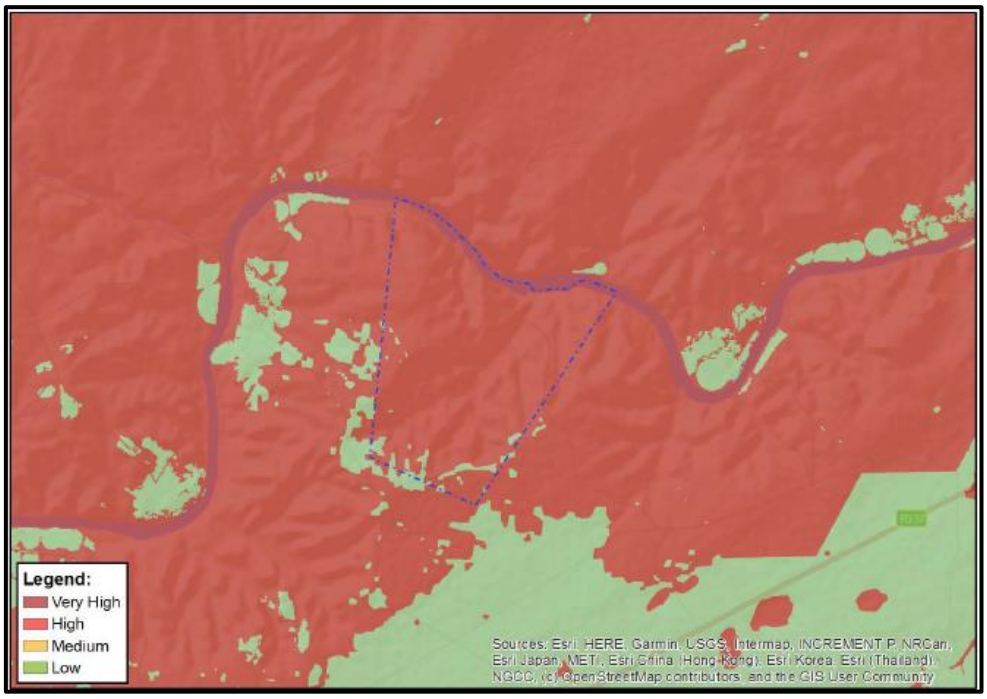


Figure 46: Terrestrial Biodiversity theme sensitivity of Banghoek No 17 according to the DFFE screening report.

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

GROUNDCOVER

According to Mucina and Rutherford (2012) and the National Vegetation Map (2018) two vegetation types are prevalent on the farms LKNR No 219, Edgehill No 194 and Alphen No 442 namely the Kuruman Mountain Bushveld (SVk10) and the Kuruman Thornveld (SVk9). The eastern section of Edgehill No 194 also extends into the Kuruman Vaalbosveld (SVk8) as presented in the following figure.

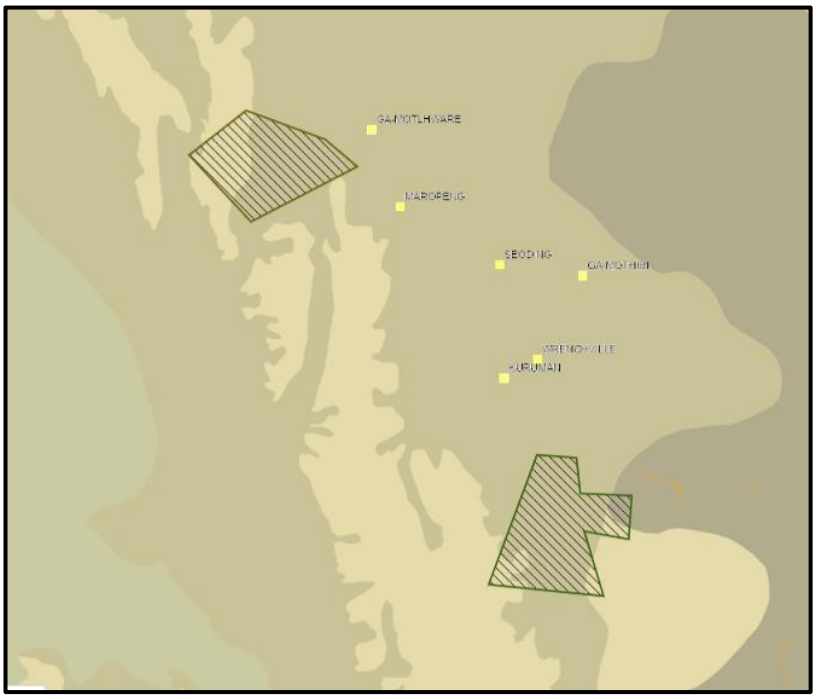


Figure 47: Map showing the distribution of the Kuruman Mountain Bushveld (lightest brown shading), the Kuruman Thornveld (darker brown), and the Kuruman Vaalbosveld (darkest brown) as depicted on the SANBI 2018 National Vegetation Map in relation to the application areas (diagonal striped polygons). (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).

The prevalent vegetation types of the farms Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, Boland No 133, Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) are the Kuruman Vaalbosveld (SVk8) and the Ghaap Plateau Vaalbosveld (SVk7).

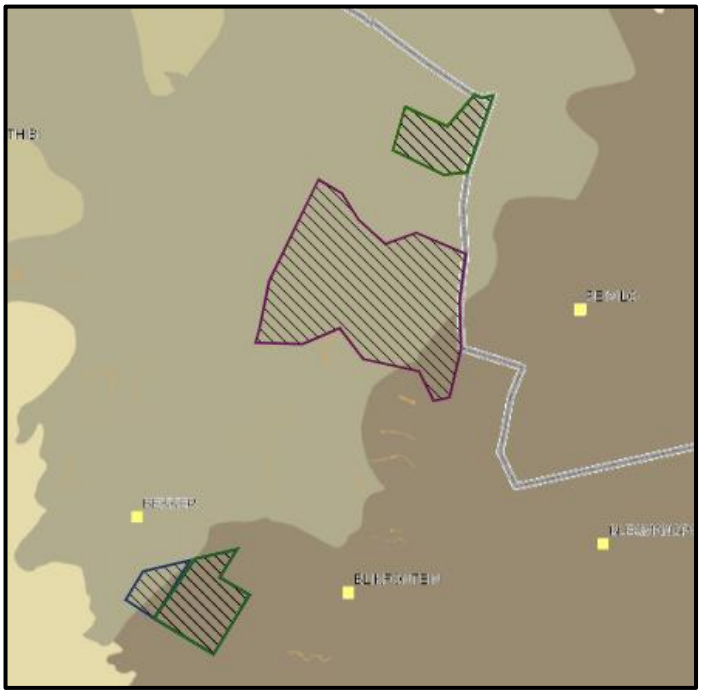


Figure 48: Map showing the distribution of the Kuruman Vaalbosveld (lighter brown shading), and the Ghaap Plateau Vaalbosveld (darkest brown) as depicted on the SANBI 2018 National Vegetation Map in relation to the application areas (diagonal striped polygons). (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).

The farms Hartebeestdale No 564 and Kogelbeen No 44 falls within the Olifantshoek Plains Thornveld (SVk13) as well as the Ghaap Plateau Vaalbosveld (SVk7).

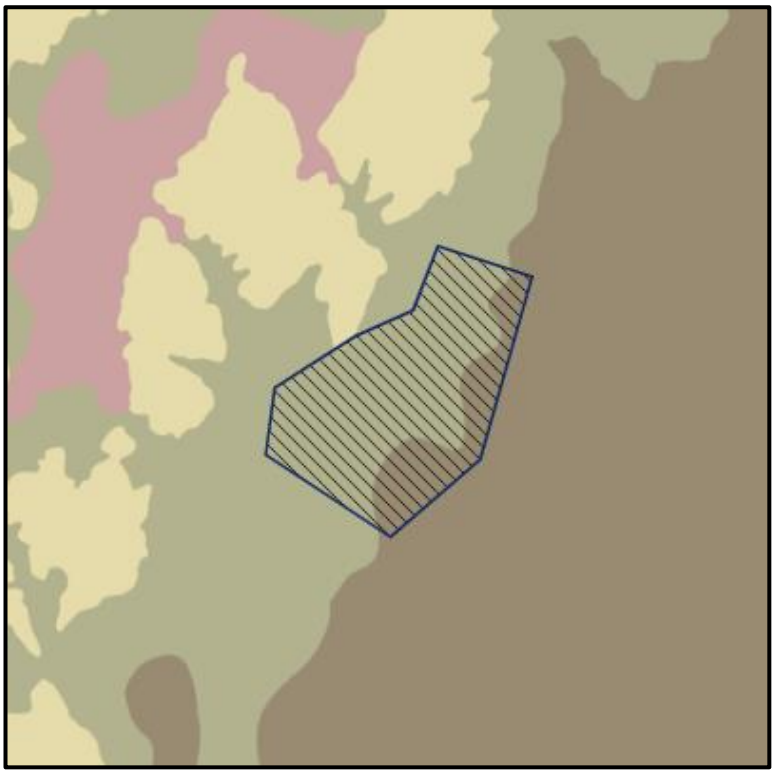


Figure 49: Map showing the distribution of the Olifantshoek Plains Thornveld (lighter brown shading), and the Ghaap Plateau Vaalbosveld (darkest brown) as depicted on the SANBI 2018 National Vegetation Map in relation to the application area (diagonal striped polygon). (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).

The farm Banghoek No 17 extends across the Upper Gariep Alluvial Vegetation (AZa4) and the Northern Upper Karoo (NKu3) vegetation types as depicted below.

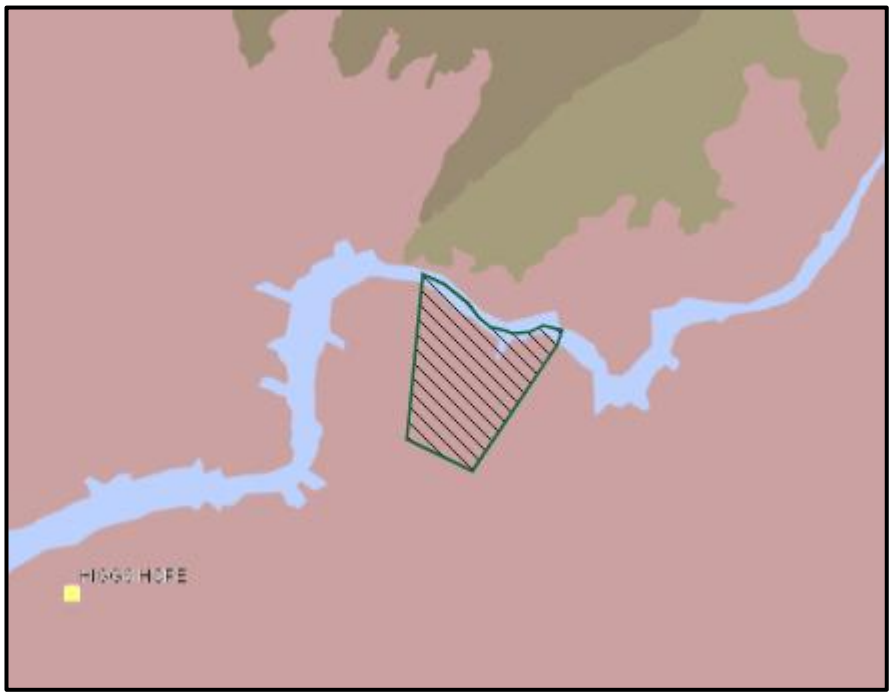


Figure 50: Map showing the distribution of the Upper Gariep Alluvial Vegetation (blue shading), and the Northern Upper Karoo (pink shading) as depicted on the SANBI 2018 National Vegetation Map in relation to the application area (diagonal striped polygon). (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).

1. KURUMAN MOUNTAIN BUSHVELD (SVK 10)

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 Se*arsia lancea, S. pyroides, Diospyros austro-africana, Euclea crispa, E. undulate, Olea earopaea, Tarchonanthus camphoratus, Amphiglossa triflora, Anthospermum rigidum, Helichrysum zeyheri;* Grammnoids*: 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.

2. KURUMAN THORNVELD (SVK9)

The Kuruman Thornveld is characterised by flat rocky plains and some sloping hills with very well-developed, closed scrub layer and well-developed open tree stratum consisting of *Acacia erioloba*,

Some of the important taxa found in this vegetation type include *Acacia erioloba, Boscia albitrunca, Grewia flava, Lycium hirsutum, Tarchonanthus camphoratus, Gymnosporia buxifolia, Acacia hebeclada, Gnidia polycephala, Helichrysum zeyheri, Hermannia comosa, Pentzia calcarean, Aristida meridionalis, A. stipitate, Eragrostis lehmanniana, E. echinochloidea, Gisekia africana, Indigofera daleoides, Limeum fenestratum, Seddera capensis.*

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none is statutorily conserved yet. A conservation target of 16% was set for the vegetation type. Erosion is very low and only 2% is transformed.

3. KURUMAN VAALBOSVELD (SVK8)

The Kuruman Vaalbosveld is characterised by an open tree layer dominated by *Acacia erioloba*, *Acacia karroo, Ziziphus mucronata* and *Rhus lancea*. The shrub layer is poorly developed with *Grewia flava* and *Tarchonanthus camphoratus* and grass layer open with much bare soil in places.

Some of the important taxa found in this vegetation type include *Acacia erioloba, A. karro, Ziziphus mucronata, Rhus lancea, Tarchonanthus camphoratus, Diospyros austro-africana, D. lycioides, Grewia flava, Amphiglossa trifloral, Anthospermum rigidum, Helichrysum zeyheri, Anthephora pubescens, Aristida meridionalis, Eragrosits lehmanniana, Stipagrostis uniplumis, Digitaria eriantha, Dicoma schinzii, Geigeria ornativa, Heliotropium strigosum, Stachys spathulate.*

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none is statutorily conserved yet. A conservation target of 16% was set for the vegetation type. Erosion is low.

4. GHAAP PLATEAU VAALBOSVELD (SVK7)

The Ghaap Plateau Vaalbosveld is characterised as a flat plateau with well-developed shrub layer with *Tarchonanthus camphoratus* and *Acacia karroo*. The open tree layer has *Olea europaea* subsp. *africana*, *A. tortilis, Ziziphus mucronata* and *Rhus lancea*.

Much of the south-central part of this unit has remarkably low cover of *Acacia* species for an arid savanna and is dominated by the nonthorny T*. camphratus, R. lancea*, and *O. europaea* subsp. *africana*.

Some of the important taxa found in this vegetation type include *Acacia erioloba, A. mellifera, Rhus lancea, A. karroo, A. tortillis Boscia albitrunca, Rhigozum obovatum Tarchonanthus camphoratus, Ziziphus mucronata, Diospyros austro-africana, D. pallens, Ehrethia rigida, Euclea crispa, Grewia flava, Aptosimum procumbens, Heichrysum zeyheri, Hermannia comosa, Lantana rugosa, Melolobium microphyllum, Digitaria eriantha, Cenchrus cilliarus, Anthephora pubescens.*

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none is statutorily conserved yet. 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.

5. OLIFANTSHOEK PLAINS THORNVELD (SVK 13)

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

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

6. UPPER GARIEP ALLUVIAL VEGETATION (AZA4)

The Upper Gariep Alluvial Vegetation is characterised as flat alluvial terraces supporting a complex of riparian thickets (gallery forests) dominated by native *Acacia*

karroo and *Diospyros lycioides*, flooded grasslands, reed beds and ephemeral herblands populating mainly sand banks within the river and on its banks.

Some of the important taxa found in this vegetation type include *Acacia karroo*, *Celtis africana*, *Salix mucronata* subsp. *mucronata*. Tall Shrubs: *Diospyros lycioides*, *Melianthus comosus*, *Rhus pyroides*. Low Shrubs: *Asparagus setaceus*, *A. suaveolens*. Woody Climber: *Clematis brachiata*. Succulent Shrubs: *Lycium arenicola*, *L. hirsutum*. Herb: *Rubia cordifolia*. Flooded grasslands & herblands Graminoid: *Melica decumbens*. Herbs: *Cineraria dregeana*, *C. lobata*.

The vegetation type is classified as Vulnerable and according to Mucina and Rutherford (2012) only ±3% is statutorily conserved in Tussen Die Riviere, Gariep Dam and Oviston Nature Reserves. Exotic woody species such as *Salix babylonica*, *Eucalyptus camaldulensis*, *E. sideroxylon*, *Prosopis* and *Populus* species have become common dominants in patches of heavily disturbed alluvial vegetation.

7. 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.

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

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 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*) (VU)
- Chestnut-banded Plover (*Charadrius pallidus*)
- Kori Bustard (*Ardeotis kor*i) (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*) (EN)
- 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 (*Acanthoplus 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 the earmarked area on the farm LKNR No 219 range between Low and Medium.

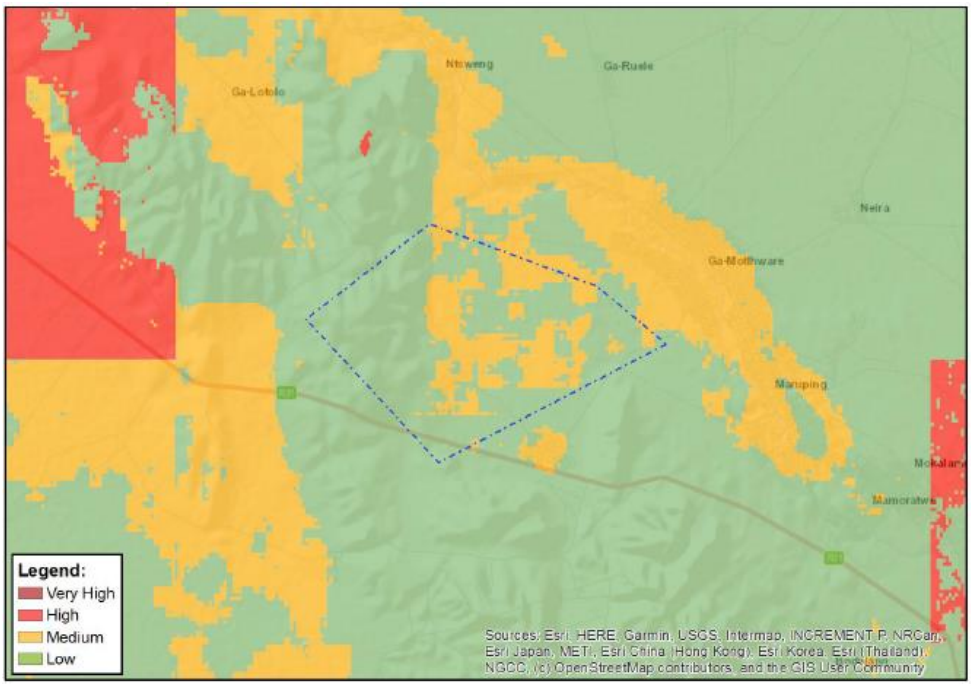


Figure 51: Animal Species theme sensitivity of LKNR No 219 according to the DFFE screening report.

The animal species theme sensitivity of the farms Edgehill No 194 and Alphen No 442 is mostly Low with a few occurrences marked as Medium.

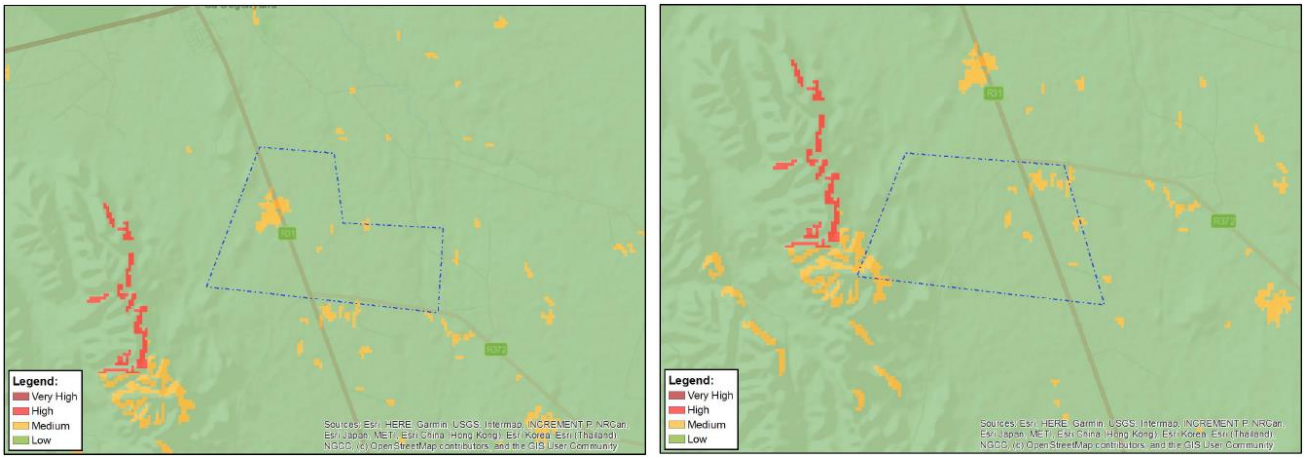


Figure 52: Animal Species theme sensitivity of Edgehill No 194 (left pane) and Alphen No 442 (right pane) according to the DFFE screening report.

The animal species theme sensitivity of the farms Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, and Boland No 133 is Low.

Figure 53: Animal Species theme sensitivity of Mahura Muthla No 198 (left pane) and Mora Schuba No 201 (right pane) according to the DFFE screening report.

Figure 54: Animal Species theme sensitivity of Kungkung No 123 (left pane) and Seduall No 124 (right pane) according to the DFFE screening report.

Figure 55: Animal Species theme sensitivity of Boland No 133 according to the DFFE screening report.

The upper part of Helvetia No 126 has a high animal species theme sensitivity that also extends into the western boundary of Brandziekfontein No 124 based on the possible occurrence of Burchell's Courser (*Cursorius rufus*) (VU), while the sensitivity of Farm No 123 (Toekoms) is indicated as Low.

Figure 56: Animal Species theme sensitivity of Helvetia No 126 (left pane) and Brandziekfontein No 124 (right pane) according to the DFFE screening report.

Figure 57: Animal Species theme sensitivity of Farn No 123 according to the DFFE screening report.

The animal species theme sensitivity of the farms Hartebeestdale No 564 and Kogelbeen No 44 is mostly Low with a few occurrences marked as Medium.

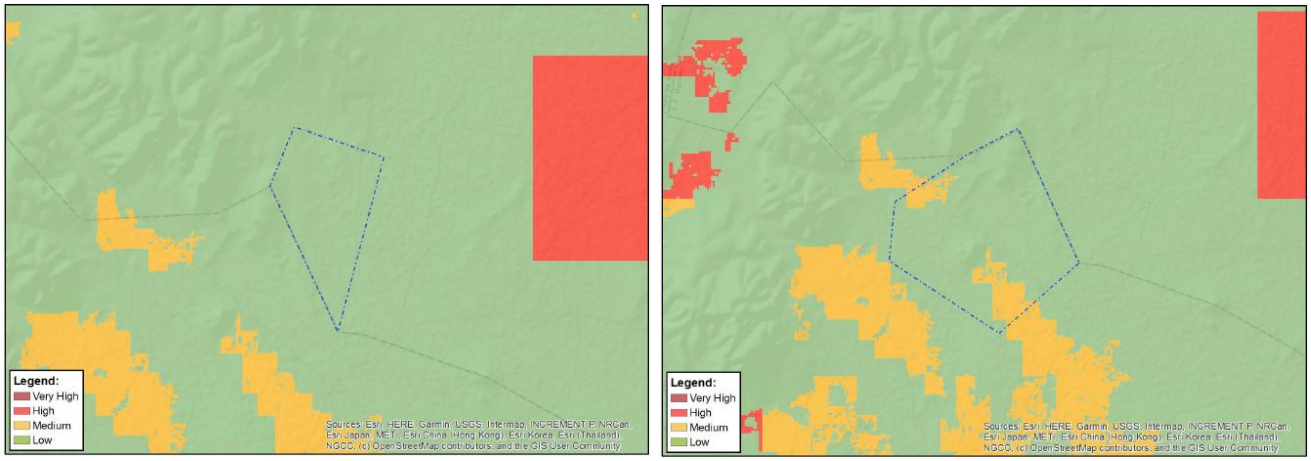


Figure 58: Animal Species theme sensitivity of Hartebeestdale No 564 (left pane) and Kogelbeen No 44 (right pane) according to the DFFE screening report.

According to the DFFE Screening Tool Report the animal species theme sensitivity of Banghoek No 17 is Medium due to the possible occurrence of the following species:

- Tawny Eagle (*Aquila rapax*) (EN);
- Caspian Tern *(Hydroprogne caspia)* (VU); and
- Ludwig's Bustard (*Neotis ludwigii*) (EN).

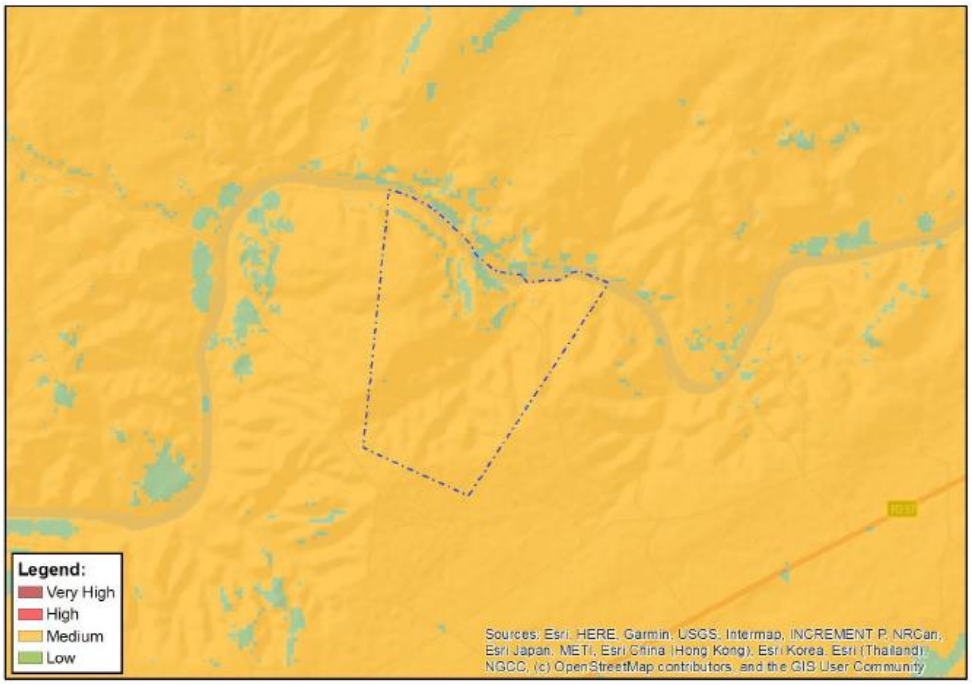


Figure 59: Animal Species theme sensitivity of Banghoek No 17 according to the DFFE screening report.

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

HUMAN ENVIRONMENT:

CULTURAL AND HERITAGE ENVIRONMENT

(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Application on 66 107 ha in the Northern Cape Province, 2024 – Appendix F)

The archaeological record for the greater study area consists of the Stone Age and Iron Age.

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.

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 evidence for the use of spears for hunting and blade production (Wilkens 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 therefrom (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 GaMohaan (in the Kuruman Hills north-west 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).

Iron Age:

Bantu-speaking people moved into Eastern and Southern Africa about 2,000 years ago (Mitchell 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. The Iron Age 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): 10th to 13th centuries AD.
- The Late Iron Age (LSA): 14th century to colonial period.

Iron Age expansion southwards past Kuruman into the Ghaap Plateau 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).

Historic 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 18th 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 20th 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, Thlaphing, 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 22nd 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 is 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 1820's, 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).

Historical Mining:

The South African Railways Administration's intention to extend the railway line from Postmasburg to Kapstewel and Lohatla, transformed the entire manganese industry north of Postmasburg. This marked a significant milestone as Postmasburg became one of the select towns in the Northern Cape with a direct rail connection. While the railway extension to Beeshoek was constructed by the Manganese Corporation, subsequent extensions to Lohatla and Manganore, Sishen, and Hotazel were undertaken by the South African Railways (Snyman 1983). The prospect of railway extensions to this region also spurred other mining ventures, such as the establishment of Gloucester Manganese, a mining company formed to exploit manganese deposits on the farm Gloucester. Shortly thereafter, Gloucester Manganese merged with the Manganese Corporation to create the Associated Manganese Mines of South Africa Limited (Ammosal). Ammosal reconstructed the old ore handling plant from Beeshoek on the farm Gloucester, with operations here contributing significantly to the overall manganese production of 250,000 tons (S.A. Manganese, 1977).

In 1930, an Englishman named Pringle-Smith was appointed by S.A. Manganese to develop and implement a comprehensive prospecting program for the company's properties (S.A. Manganese 1977:46). This initiative aimed to resume prospecting

work that had been initiated in 1927 but had been halted due to unfavourable financial conditions and the absence of a railway connection. Pringle-Smith swiftly commenced opening up the mineral beds on the farms Kapstewel and Doornput. However, despite these efforts, S.A. Manganese lacked the market presence enjoyed by entities like the Manganese Corporation at that time. Consequently, the ore extracted was stockpiled at these two farms. Pringle-Smith departed from the Postmasburg area in 1932, driven by the intensified financial challenges of the Great Depression. His departure was prompted by S.A. Manganese's need to adjust his salary significantly downward (S.A. Manganese 1977). The economic repercussions of the Great Depression led to the closure of several smaller manganese mining companies. This period of economic hardship prompted a wave of merging and amalgamation within the industry. As a result, South African Manganese Limited and Associated Manganese Miners of South Africa Limited emerged as the dominant players in the manganese mining sector (Snyman 1983).

In the 1930s, the South African Geological Survey conducted a geological assessment of the minerals and ore deposits in the Postmasburg District. Among the team members was Dr Leslie Gray Boardman, tasked with investigating manganese and hematite deposits in the district. In addition to identifying manganese deposits near Postmasburg, Dr Boardman also discovered substantial iron ore deposits on farms situated along the northern extent of their study area, including Sishen, Bruce, and King (S.A. Manganese 1977).

From 1937, S.A. Manganese began acquisitions of various farms for mining. They would also establish a staff village to supplement for labour needed for the mining. In the 1940s, S.A. Manganese and the African Metals Corporation (Amcor), established a new company called Manganore Iron Mining Lt to mine iron ore. Dr Boardman had later convinced S.A. Manganese to acquire the farm Lilyveld as his geological survey had uncovered large amounts of haematite iron ore there.

In 1953, Iscor began with iron production at Sishen. The railway line from Postmasburg to Sishen had also been extended in this year to send ore to various Iscor plants in Pretoria, Vanderbijlpark, and Newcastle. By 1973, a second mine was established at Sishen, and iron ore was exported to Saldanha Bay. This growth in the mining industry led to the establishment of the town of Kathu to house mine workers. By 1977, the Sishen-Saldanha railway line was completed.

Archaeology & Palaeontology:

The following images were taken from the DFFE Screening Reports of each farm and indicate the archaeological and palaeontological sensitivity of the various farms.

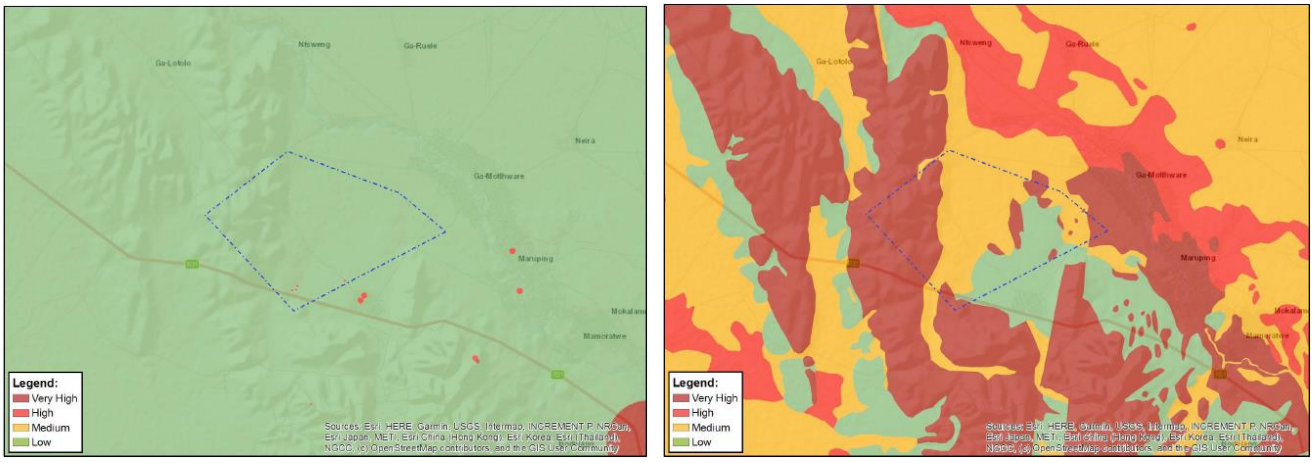


Figure 60: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm LKNR No 219 according to the DFFE screening report.

Figure 61: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Edgehill No 194 according to the DFFE screening report.

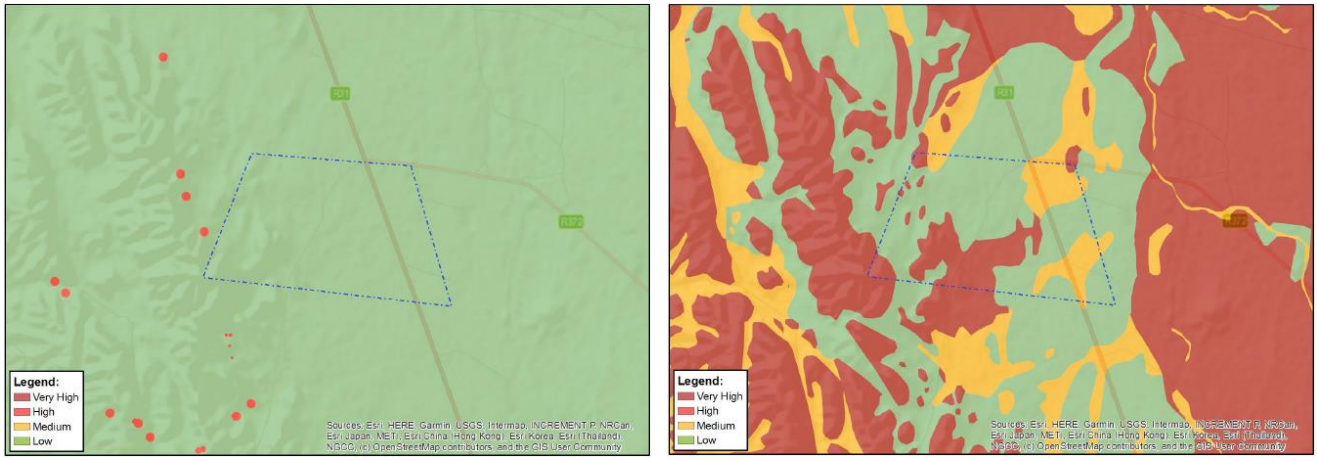


Figure 62: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Alphen No 442 according to the DFFE screening report.

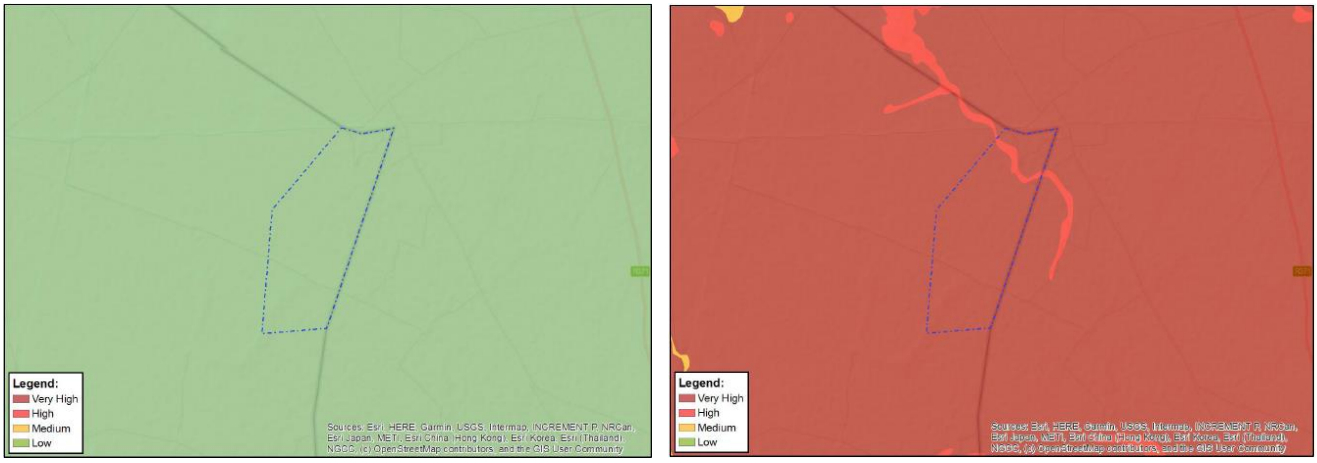


Figure 63: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Mahura Muthla No 198 according to the DFFE screening report.

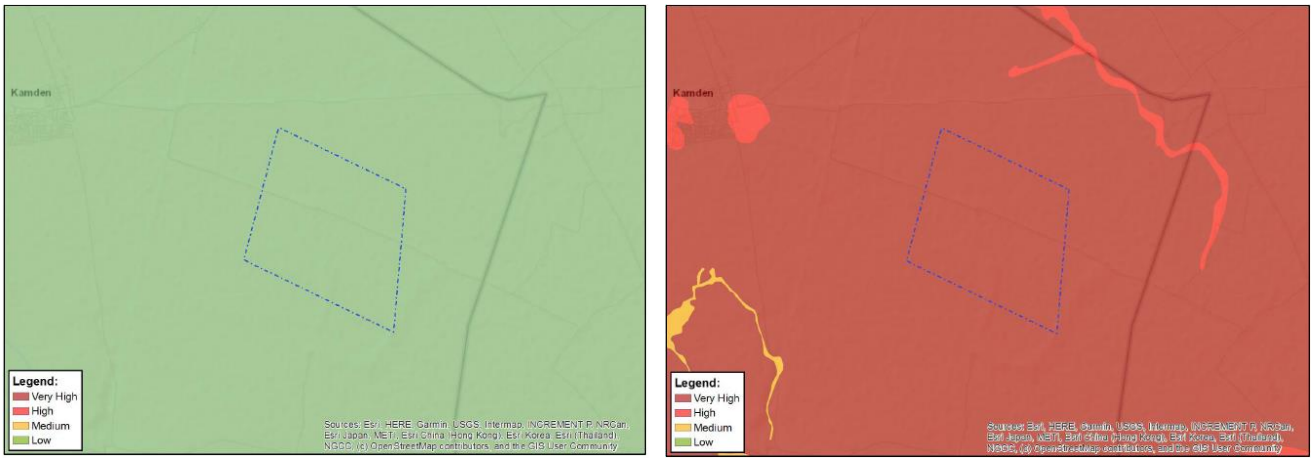


Figure 64: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Mora Schuba No 201 according to the DFFE screening report.

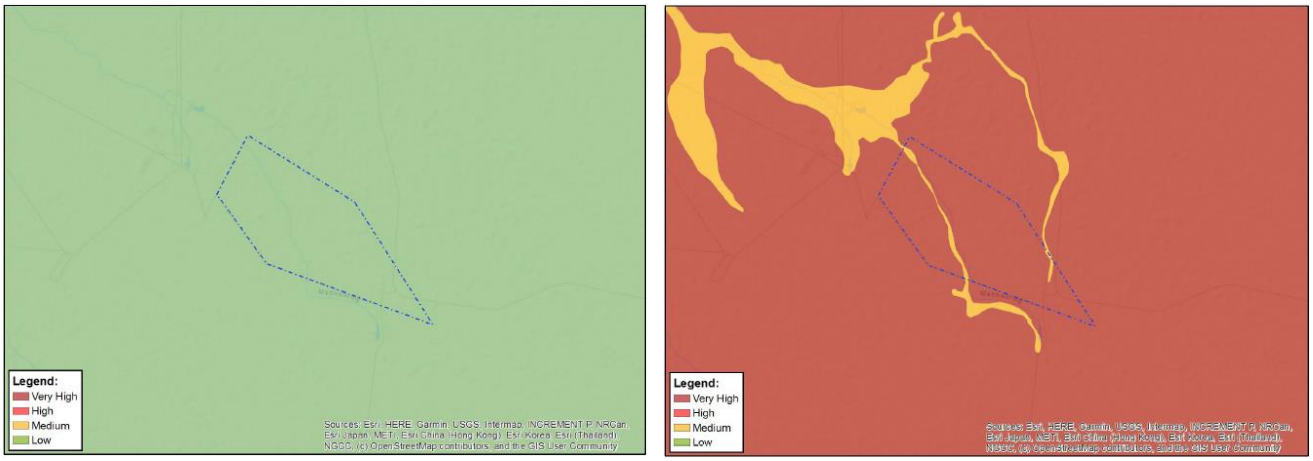


Figure 65: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Kungkung No 123 according to the DFFE screening report.

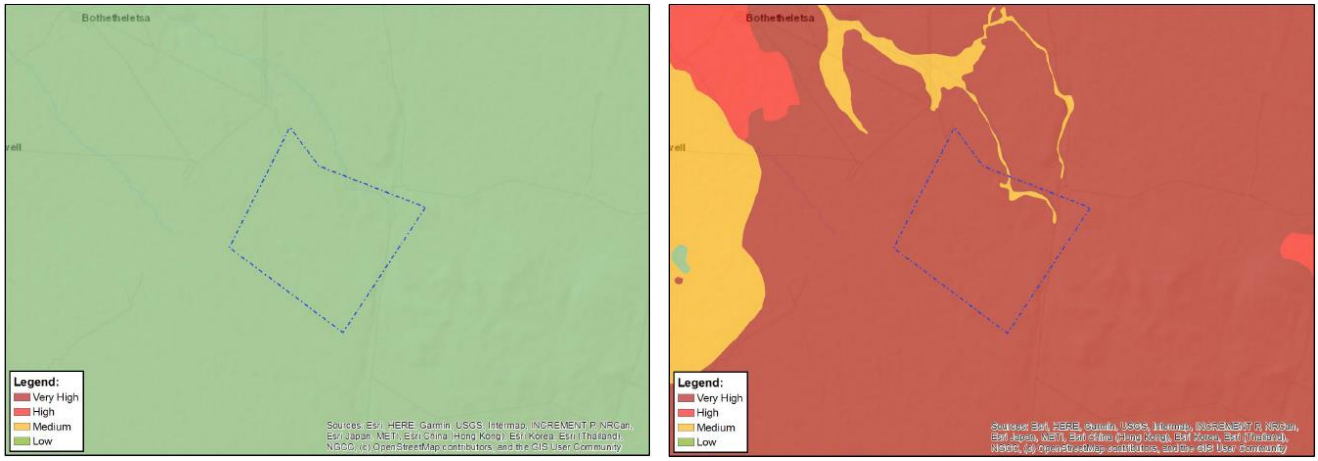


Figure 66: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Seduall No 124 according to the DFFE screening report.

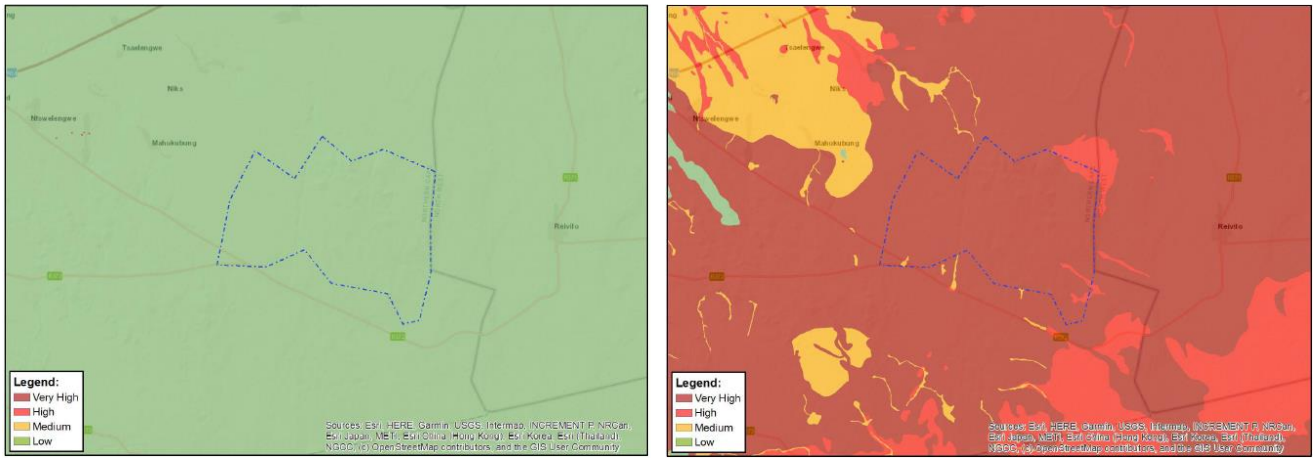


Figure 67: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Boland No 133 according to the DFFE screening report.

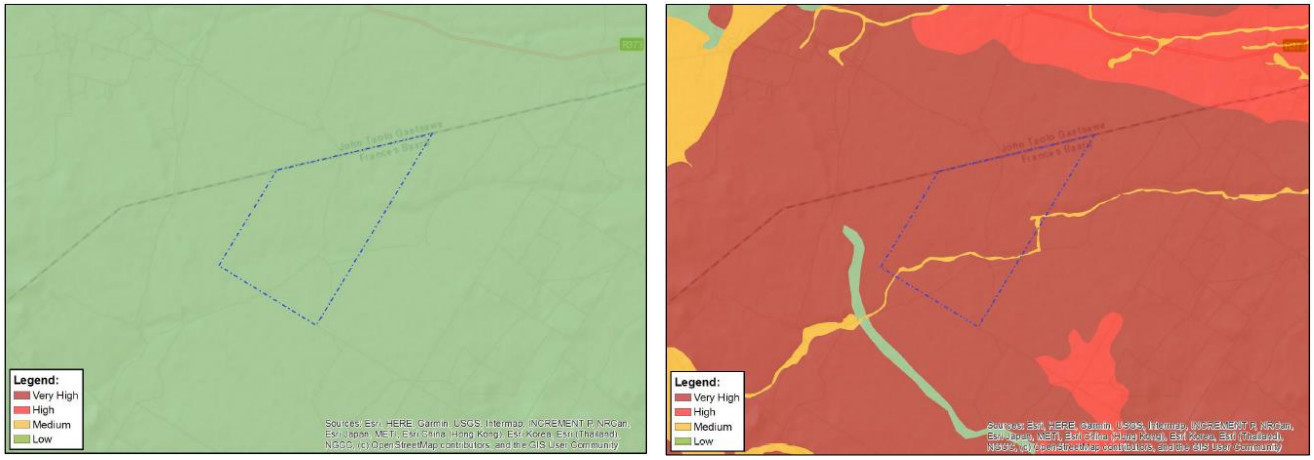


Figure 68: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Helvetia No 126 according to the DFFE screening report.

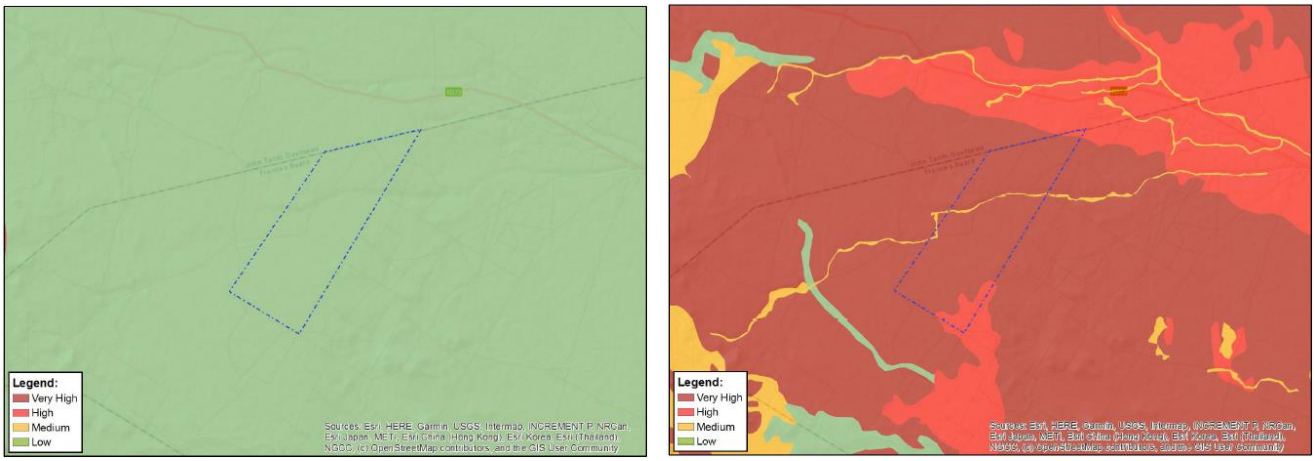


Figure 69: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Brandziekfontein No 124 according to the DFFE screening report.

Figure 70: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Farm No 123 (Toekoms) according to the DFFE screening report.

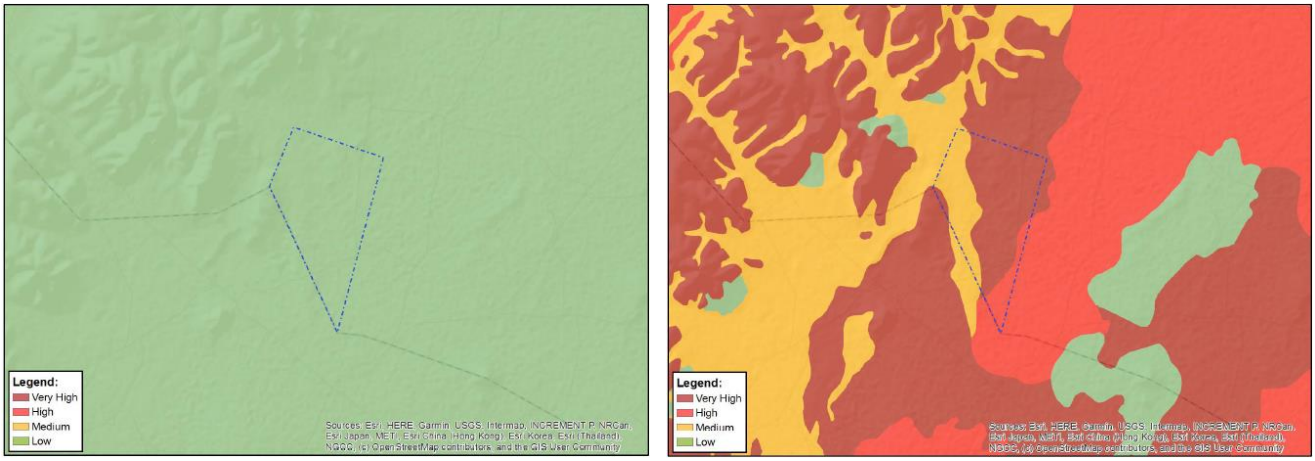


Figure 71: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Hartebeestdale No 564 according to the DFFE screening report.

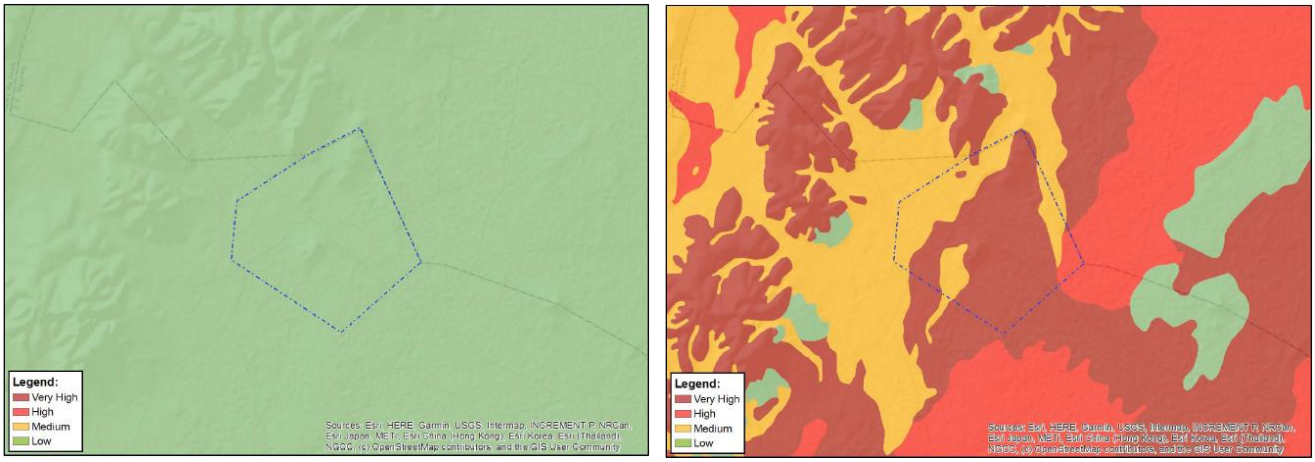


Figure 72: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Kogelbeen No 44 according to the DFFE screening report.

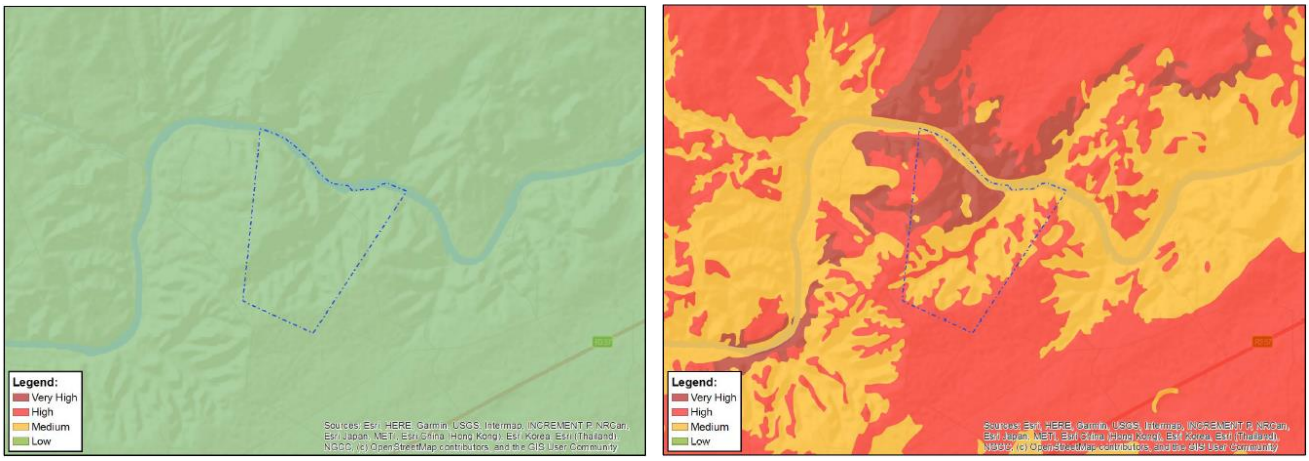


Figure 73: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Banghoek No 17 according to the DFFE screening report.

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

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the Final IDP 2023-24 John Taolo Gaetsewe District Municipality, IDP 2022/23 – 2026/2027 Frances Baard District Municipality, ZF Mgcawu District Municipality Final Integrated Development Plan 2021/2022, and the IDP 2022-2027 Pixley Ka Seme District Municipality)

JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY

The application areas numbered A-E, F-N, P-W, and X-1Q on the Regulation 2.2 project plan (Appendix A2) fall within the John Taolo Gaetsewe District Municipality, and extends into the following wards:

- A-E: Ga-Segonyana Local Municipality Wards 8 & 10,
- F-N: Ga-Segonyana Local Municipality Ward 11,
- P-W: Ga-Segonyana Local Municipality Ward 11, & Joe Morolong Local municipality Ward 13, and
- X-1Q: Ga-Segonyana Local Municipality Ward 11, & Joe Morolong Local Municipality Ward 14.

The John Taolo Gaetsewe District Municipality (JTGDM) is bordered by (1) The ZF Mgcawu and Frances Baard District Municipalities to the west and south; (2) The North West Province (Dr. Ruth Segomotsi Mompati District Municipality) to the east and northeast; and (3) Botswana to the northwest. JTGDM is the second smallest district in the Northern Cape, occupying only 7% of the Province (StatsSA 2016). Administratively, the JTGDM comprises three Local Municipalities: (1) The Gamagara Local Municipality; (2) The Ga-Segonyana Local Municipality; and (3) The Joe Morolong Local Municipality. Joe Morolong Local Municipality is the District's largest local municipality in terms of area size, with Ga-Segonyana LM and Gamagara LM covering for 16% and 10% respectively. The JT Gaetsewe District comprises of 186 towns and settlements of which the majority (80%) are villages in the Joe Morolong Municipality.

Ga-Segonyana Local Municipality:

Ga-Segonyana Municipality is a former cross-boundary municipality with areas in the Northern Cape and North West. The municipal jurisdiction consists of 33 residential areas within a radius of approximately 80 km in and around Kuruman and has approximately 75 000 residents. The municipality's economy is mainly based on the surrounding mining and agricultural activities. According to Stats SA the unemployment rate of the municipality is 33.7% (Stats SA).

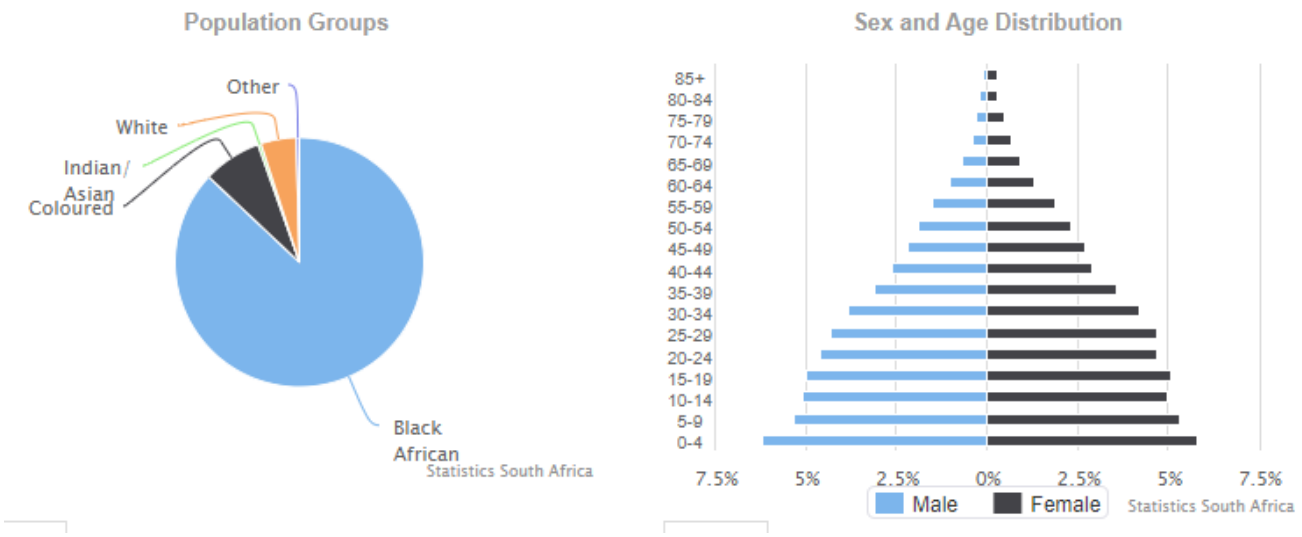


Figure 74: Population groups and gender profile charts of the Ga-Segonyana Local Municipality (image obtained from Statistics South Africa).

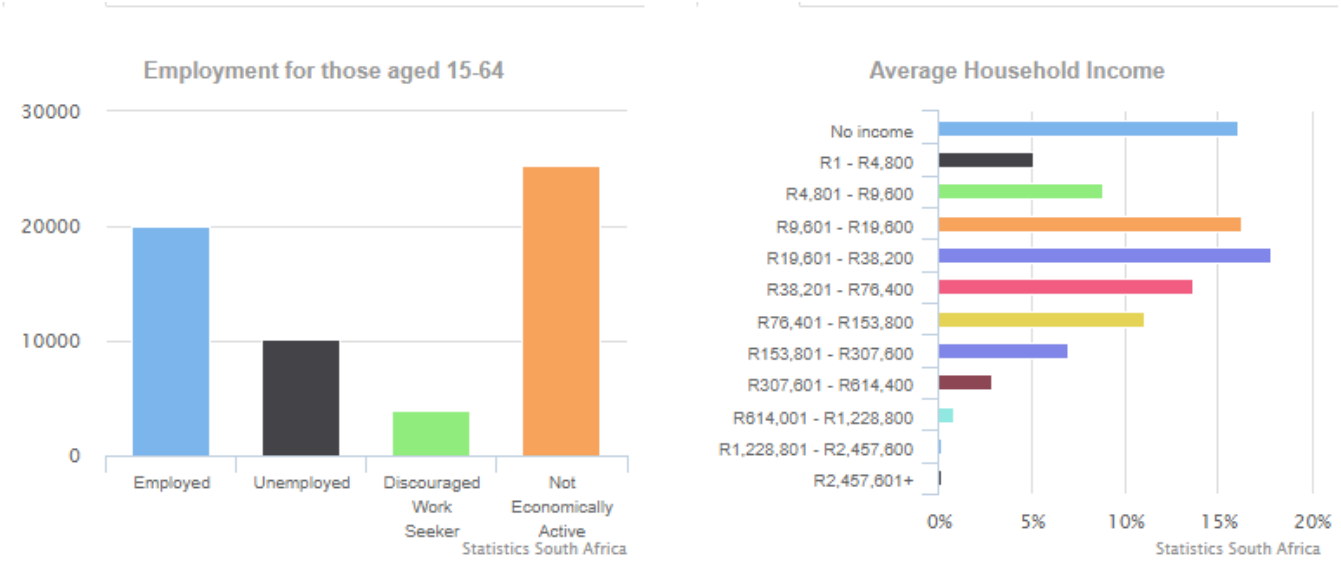


Figure 75: Employment and average household income charts of the Ga-Segonyana Local Municipality (image obtained from Statistics South Africa).

Joe Morolong Local Municipality:

The Joe Morolong Local Municipality was established in 2000 and serves 15 wards, most of which are rural. Although unemployment is high (38.6%), the municipality has great potential for developers, especially those interested in ecotourism and conservation. The municipal area is approximately 5 813 km² in size (Stats SA).

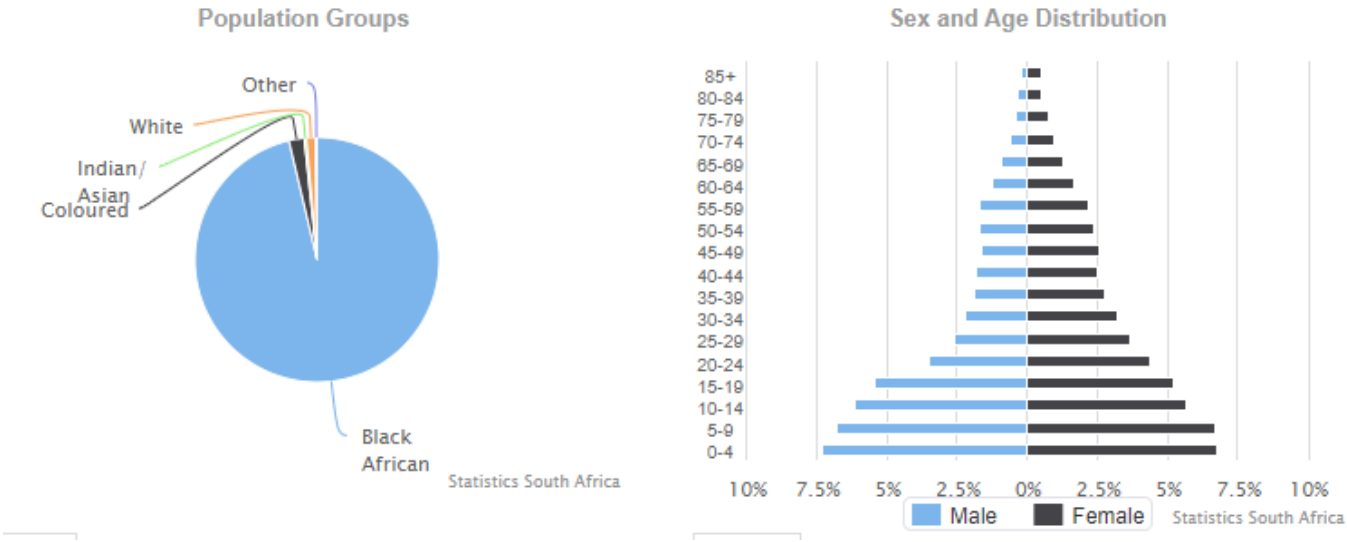


Figure 76: Population groups and gender profile charts of the Joe Morolong Local Municipality (image obtained from Statistics South Africa).

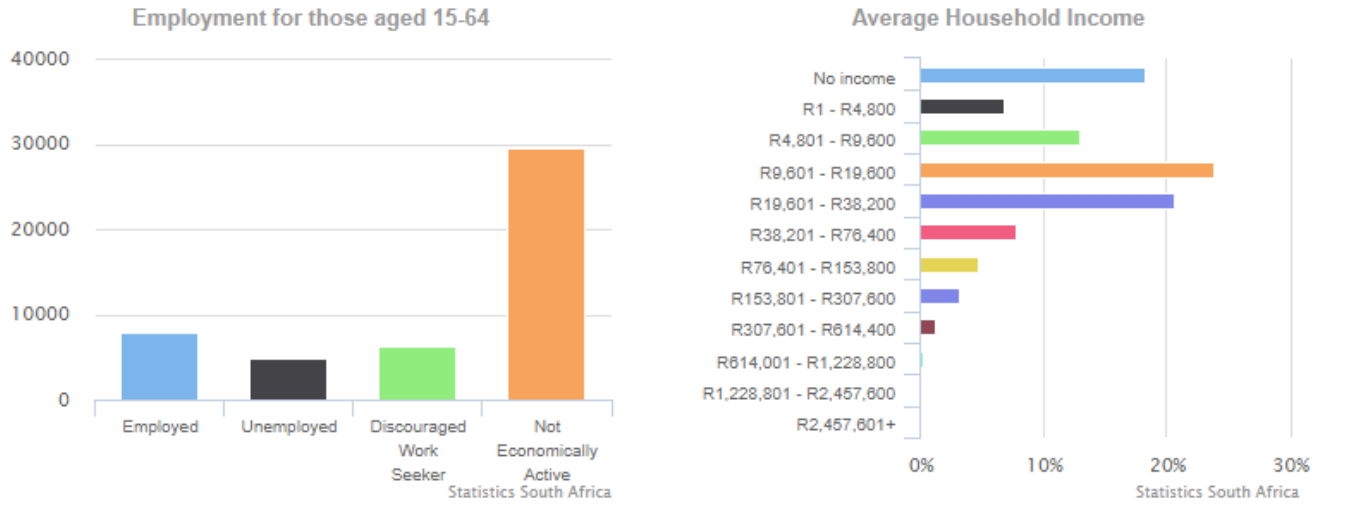


Figure 77: Employment and average household income charts of the Joe Morolong Local Municipality (image obtained from Statistics South Africa).

FRANCES BAARD DISTRICT MUNICIPALITY

The application areas numbered 1R-1W and 1W-1Z on the Regulation 2.2 project plan (Appendix A2) fall within the Frances Baard District Municipality (FBDM) and extends into ward 6 of the Dikgatlong Local Municipality.

The Frances Baard District Municipality is a Category C municipality located in the far eastern portion of the Northern Cape Province. It shares its northern borders with the Northwest Province and its eastern border with the Free State Province. The municipality is the smallest district in the Northern Cape, making up only 3% of its geographical area. However, it accommodates the largest proportion of the province's

population. The district municipality comprises of four local municipalities namely: Dikgatlong, Magareng, Phokwane and Sol Plaatje. The Frances Baard district is predominantly driven by the mining and agricultural sectors.

Dikgatlong Local Municipality:

Dikgatlong Local Municipality is a Category B municipality. It has seven wards. The municipal areas are Barkly-West, Windsorton, Delportshoop and a portion of the former Diamantveld District Council. The head office of the municipality is situated in the town of Barkly West. The municipal area covers approximately 7 315 km² and borders with the Magareng Municipality in the north-east and Sol Plaatje in the south-east. Agriculture and mining form the economic basis of the area. The unemployment rate of the municipality is 39.7% (Stats SA).

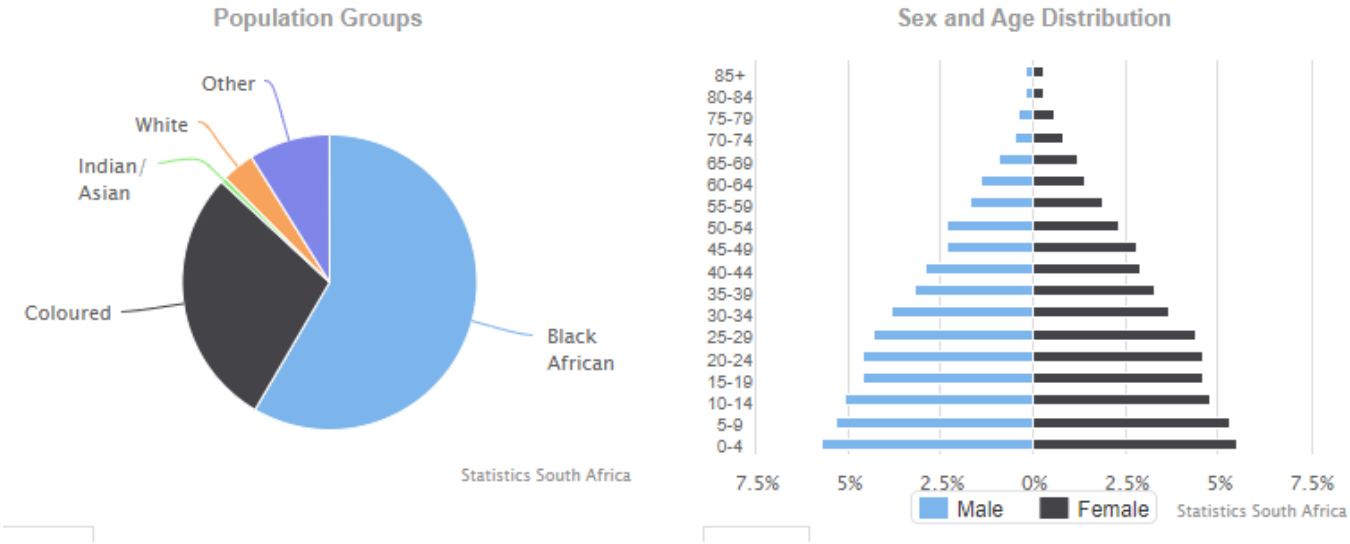


Figure 78: Population groups and gender profile charts of the Dikgatlong Local Municipality (image obtained from Statistics South Africa).

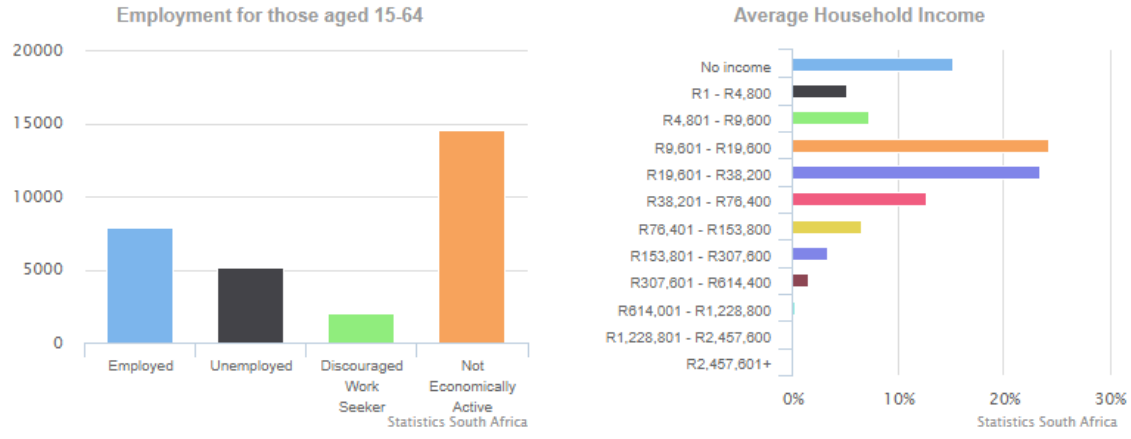


Figure 79: Employment and average household income charts of the Dikgatlong Local Municipality (image obtained from Statistics South Africa).

ZF MGCAWU DISTRICT MUNICIPALITY

A portion of the application area numbered 2A-2H on the Regulation 2.2 project plan (Appendix A2) fall within the ZF Mgcawu District Municipality (ZFMDM) and extends into ward 7 of the Tsantsabane Local Municipality.

ZF Mgcawu District Municipality forms the mid-northern section of the province on the frontier with Botswana. ZF Mgcawu District comprises five Local Municipalities namely: Kai! Garb; Dawid Kruiper; Tsantsabane, Kheis and Kgatelopele. Upington is the district municipal capital where the municipal government is located. The whole area is managed by the ZF Mgcawu District Municipality, which is classified as a category C Municipality.

Tsantsabane Local Municipality:

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. Tsantsabane was the original name given to the town by the Batswana because of the presence of many shiny stones (e.g. the hematite). According to Stats SA the unemployment rate of the municipality is 26.1%.

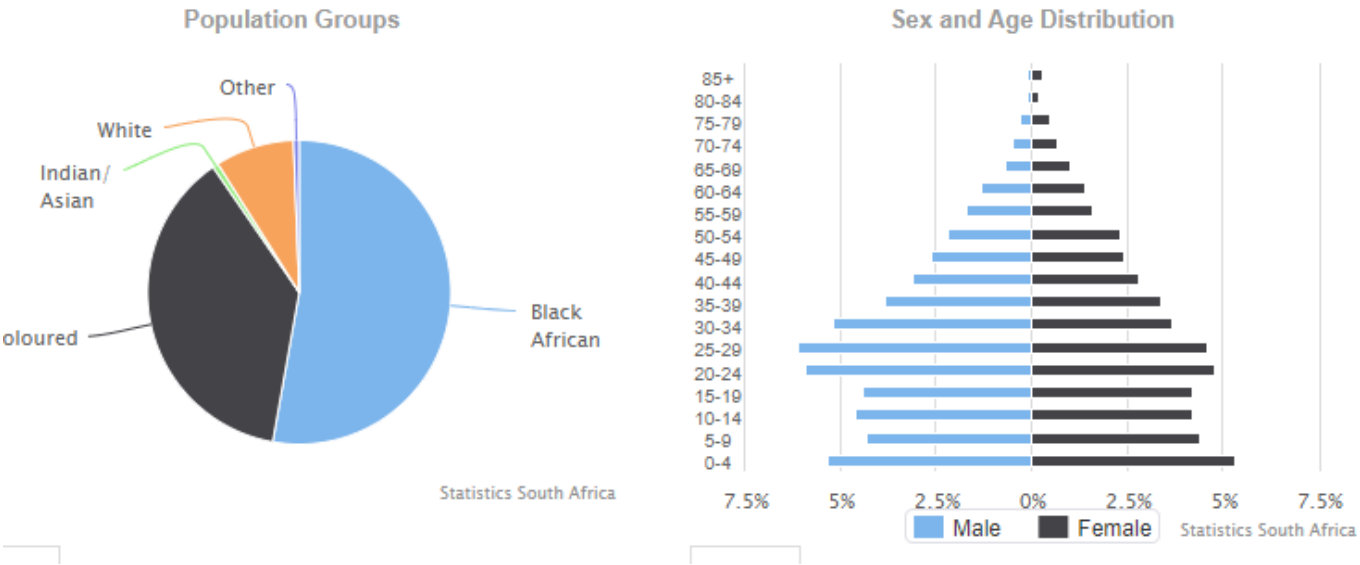


Figure 80: Population groups and gender profile charts of the Tsantsabane Local Municipality (image obtained from Statistics South Africa).

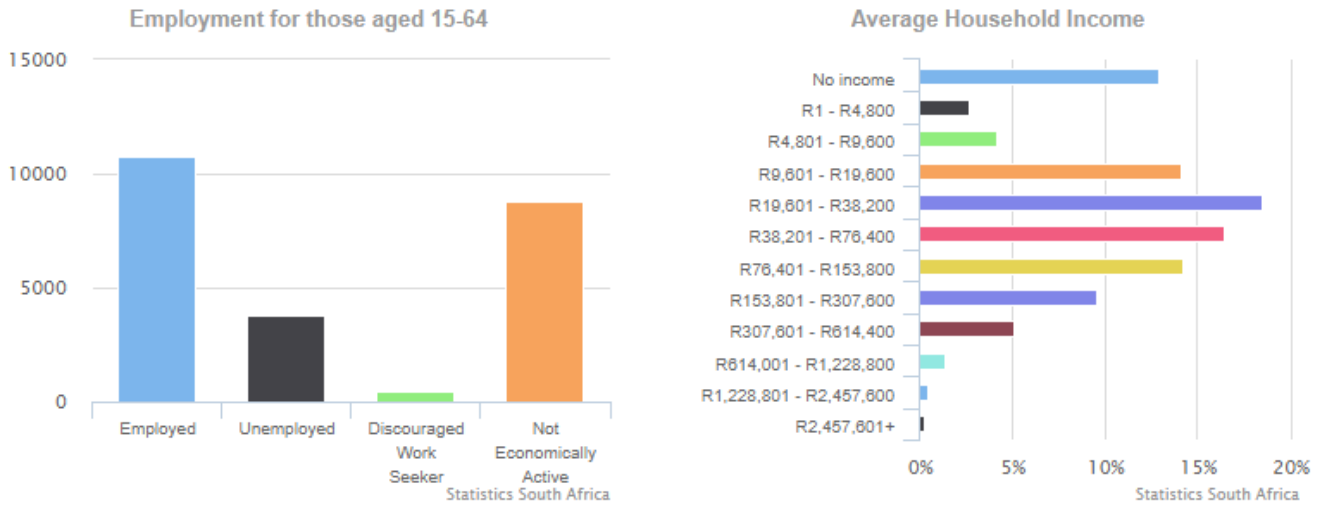


Figure 81: Employment and average household income charts of the Tsantsabane Local Municipality (image obtained from Statistics South Africa).

PIXLEY KA SEME DISTRICT MUNICIPALITY

A portion of the application area numbered 2A-2H on the Regulation 2.2 project plan (Appendix A2) fall within the Pixley Ka Seme District Municipality (PKSDM) and extends into wards 1 and 7 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 km². 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).

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%.

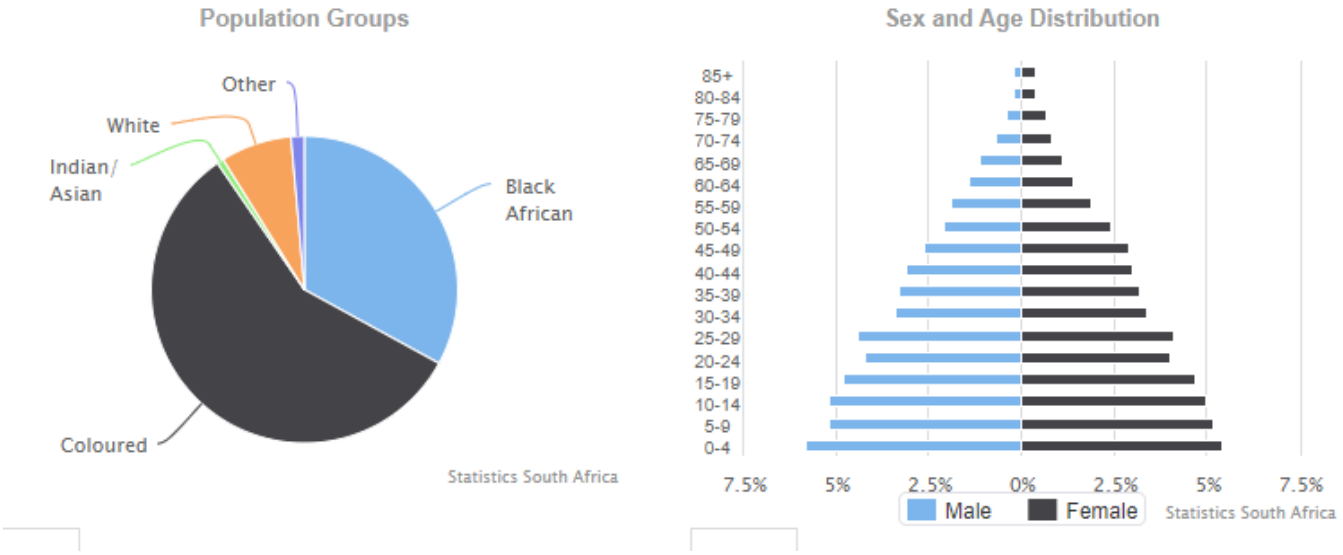


Figure 82: Population groups and gender profile charts of the Siyancuma Local Municipality (image obtained from Statistics South Africa).

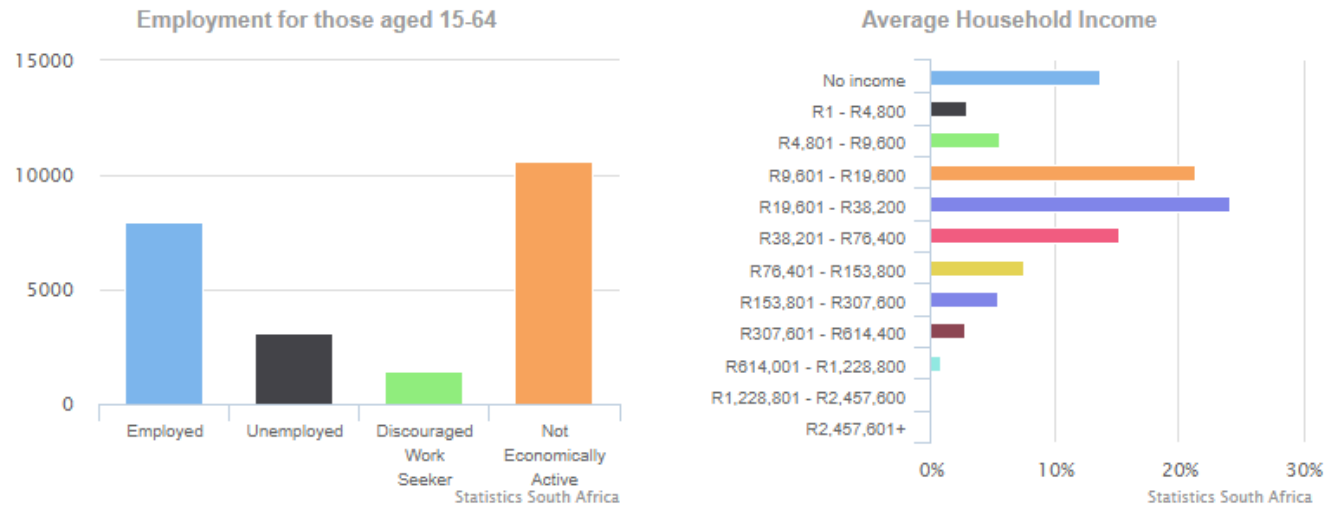


Figure 83: Employment and average household income charts of the Siyancuma Local Municipality (image obtained from Statistics South Africa).

(b) Description of the current land uses

LOWER KURUMAN NATIVE RESERVE NO 219 (LKNR)

The farm LKNR No 219 extends across a vast area (±77 776 ha) of which the application footprint only covers 4 901 ha in the south. The study area includes the settlement of Ga-Sebolao as shown in the following figure as well as the villages of Ga-Motlhware (east of the river). Bathlaros (west of the river) borders the application to the east, with Maruping and Maropeen further south-east. One of the access roads into the application area runs through the village of Maheane that borders the application area to the south-east. The main land use of the application area

comprises of grazing interconnected with village life. The R31 road passes through the most southern corner.

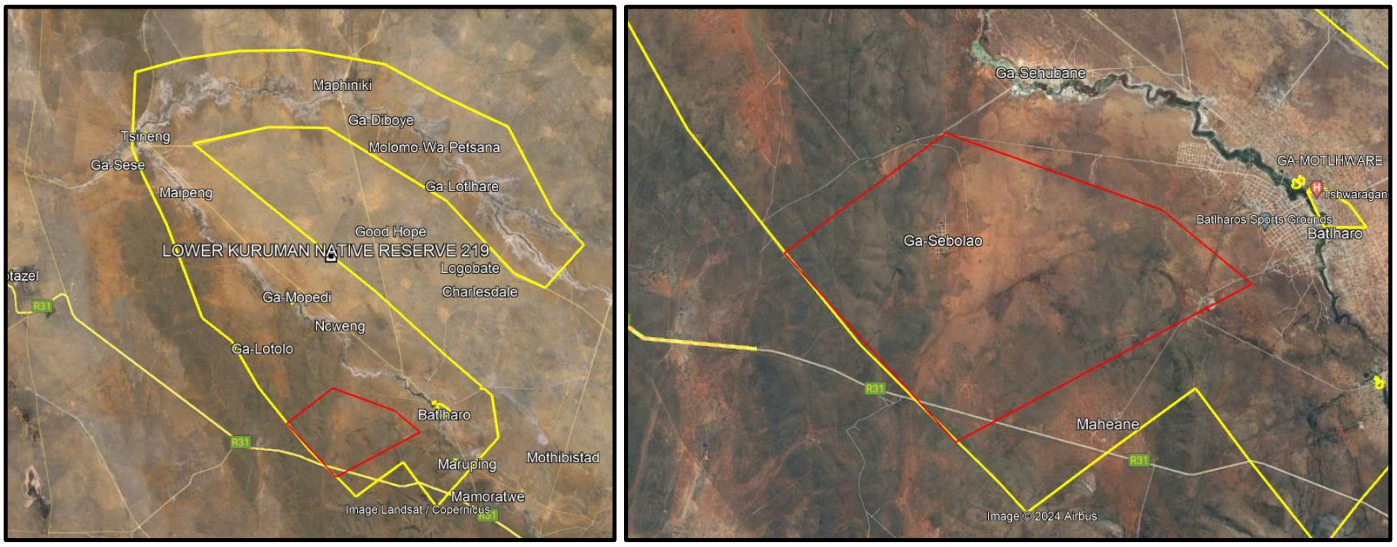


Figure 84: Satellite view of the farm boundaries (left pane) with the application area indicated by the red polygon (image obtained from Google Earth).

The following image shows the land capability of the earmarked footprint on LKNR No 219 as presented in the DFFE Screening Report.

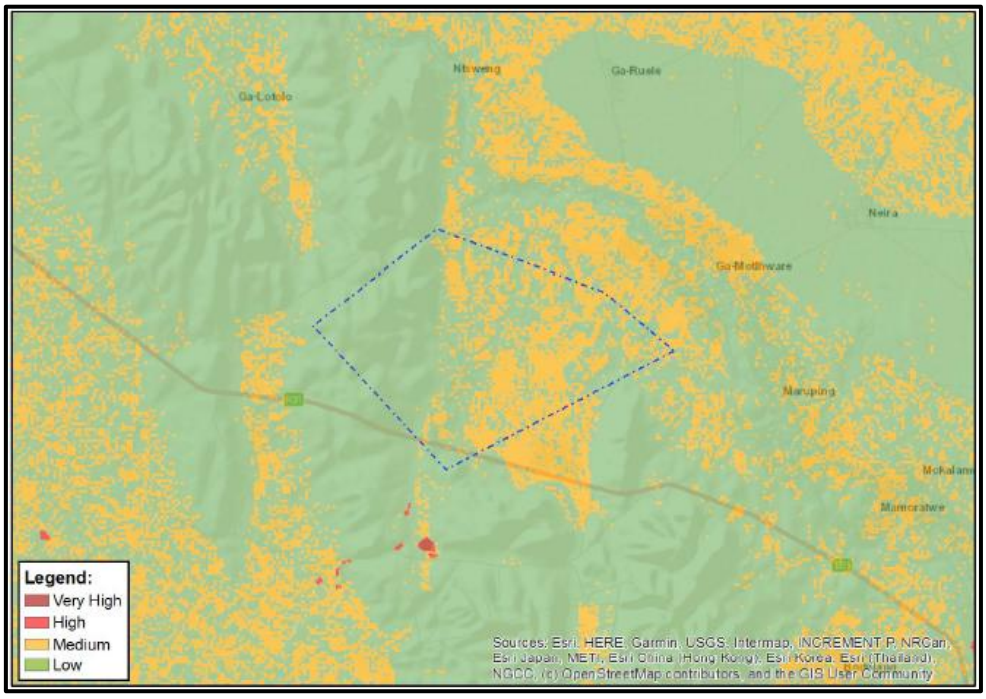


Figure 85: Agricultural Theme Sensitivity of the earmarked portion on LKNR No 219 according to the DFFE screening report.

The following table provides a list of the land uses and/or prominent features that were identified within a 500 m radius of the application area on LKNR No 219.

Table 12: Land uses and/or prominent features that occur within/within 500 m radius of the application area on LKNR No 219.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is surrounded by natural areas used for agricultural purposes.
Low density residential	**YES**	-	The settlement of Ga-Sebolao is within the application footprint, while the Maheane Village borders the application area to the south-east.
Medium density residential	-	**NO**	-
High density residential	-	**NO**	-
Informal residential	-	**NO**	-
Retail commercial & warehousing	**YES**	-	Both Ga-Sebolao and Maheane have various stores/retail buildings.
Light industrial	-	**NO**	-
Medium industrial	-	**NO**	-
Heavy industrial	-	**NO**	-
Power station	-	**NO**	-
High voltage power line	-	**NO**	-
Office/consulting room	-	**NO**	Although there are offices in Maheane none were identified within 500 m of the application area.
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	-	**NO**	-
Quarry, sand or borrow pit	**YES**	-	Some diggings do occur within 500 m of the application area.
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
Hospital/medical centre	-	**NO**	-
School/ crèche	-	**NO**	The Gaboamogwe Day Care in the village of Maheane as well as the Rearata Primary School are more than 500 m from the application area.
Tertiary education facility	-	**NO**	-
Church	-	**NO**	No churches were identified within 500 m of the application area.
Old age home	-	**NO**	-
Sewage treatment plant	**YES**	-	In Maheane.
Train station or shunting yard	-	**NO**	-
Railway line	-	**NO**	-
Major road (4 lanes or more)	-	**NO**	The R31 provincial road (between Kuruman and Hotazel) crosses the application area to the south-west. The gravel road turning from the R31 towards Bathlaros passes through eastern corner of the application area.
Airport	-	**NO**	-
Harbour	-	**NO**	-
Sport facilities	-	**NO**	Although the Rearata Primary School has sport facilities, it is more than 500 m from

LAND USE CHARACTER	YES	NO	DESCRIPTION
			the application area. Likewise, the Batlharos Sports Grounds are more than 1 km removed from the application area.
Golf course	-	**NO**	-
Polo fields	-	**NO**	-
Filling station	-	**NO**	-
Landfill or waste treatment site	-	**NO**	-
Plantation	-	**NO**	-
Agriculture	**YES**	-	The study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	The Kuruman River borders the application area ±2 km away along the northern to eastern boundary.
Nature conservation area	-	**NO**	-
Mountain, hill, or ridge	**YES**	-	The Kuruman Hills passes the application area to the west and up to the southern boundary. The range also enters the western part of the application area.
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	-	**NO**	The Maheane graveyard is more than 500 m from the application area.
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 an archaeological site unless otherwise authorised by the specialist and SAHRA.		
Other land uses (describe)	-	**NO**	-

EDGEHILL NO 194 & ALPHEN NO 442

The farm Edgehill No 194 borders Alphen No 442 to the north and is ±8 km from the town of Kuruman at its nearest point. The R31 and R372 provincial roads lend access to the farms. The farms are mainly used for livestock grazing and game farming with the wedding venue (iNiSkuur) on Alphen No 442/3 extending the land use to tourism.

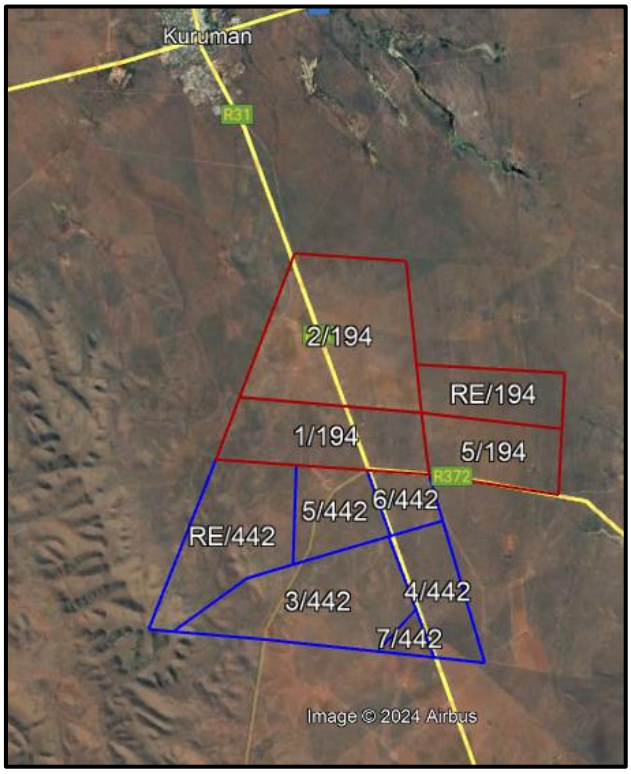


Figure 86: Satellite view of the farm boundaries where the brown polygons indicate the boundaries of the farm Edgehill No 1994, and the blue polygons show the various portions of Alphen No 442 (image obtained from Google Earth).

The following images show the land capability of the farms Edgehill No 194 and Alphen No 442 as presented in the DFFE Screening Report.

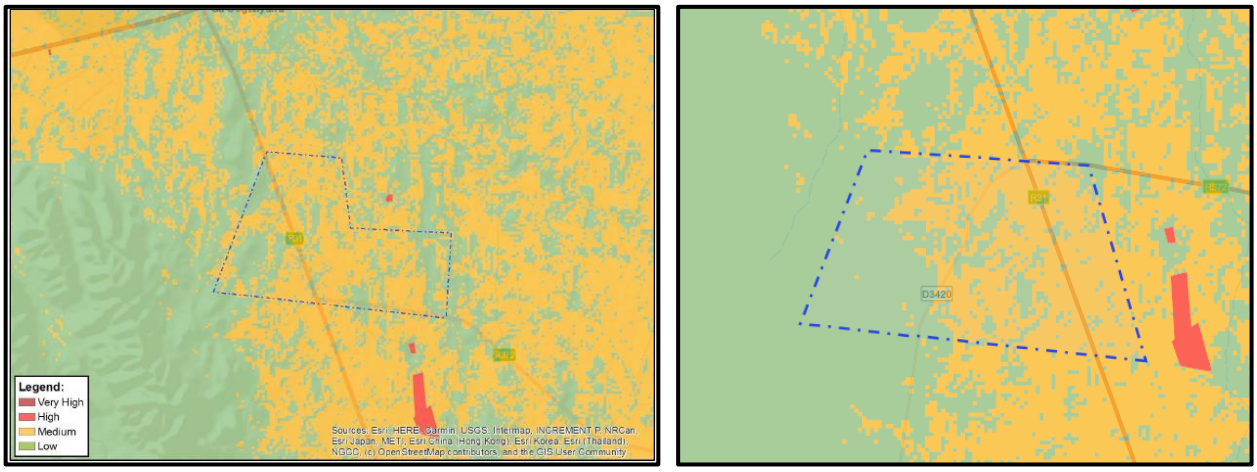


Figure 87: Agricultural Theme Sensitivity of the farm Edgehill No 194 (left pane) and Alphen No 442 (right pane) according to the DFFE screening report.

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 Edgehill No 194 and Alphen No 442.

Table 13: Land uses and/or prominent features that occur within/within 500 m radius of Edgehill No 194 and Alphen No 442.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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**	Although various powerlines cross the properties and are within 500 m of the application area no high voltage power lines were identified.
Office/consulting room	-	**NO**	-
Military or police base / station / compound	-	**NO**	-
Spoil heap or slimes dam	-	**NO**	No formal mining area were noted on/near the application area.
Quarry, sand or borrow pit	-	**NO**	
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
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**	The R31 provincial road passes through the farms connecting Kuruman with Danielskuil, while the R372 gravel road from Reivelo joins up with the R31.
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	-
Nature conservation area	-	**NO**	

LAND USE CHARACTER	YES	NO	DESCRIPTION
Mountain, hill, or ridge	**YES**	-	The Asbestos Hills crosses into south-western corner of the application area.
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	A memorial for Frikkie Kotzé and JC Venter is present in the R327 road reserve. 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.		
Archaeological site			
Other land uses (describe)	**YES**	-	The iNiSkuur Wedding Venue was established on Alphen No 442/3.

MAHURA MUTHLA NO 198 & MORA SCHUBA NO 201

The farms Mahura Muthla No 198 and Mora Schuba No 201 lay within the outermost corner of the Northern Cape where it borders onto the North West Province. Various small and informal gravel roads pass through the properties, and the main land use is livestock grazing.

Figure 88: Satellite view of the farm boundaries where the green polygons indicate the boundaries of the farm Mahura Muthla No 198, and the yellow polygons show the various

portions of Mora Schuba No 201. Also note the province boundary along the northern and eastern fence lines of Mahura Muthla No 198 (image obtained from Google Earth).

The following images show the land capability of the farms Mahura Muthla No 198 and Mora Schuba No 201 as presented in the DFFE Screening Report.

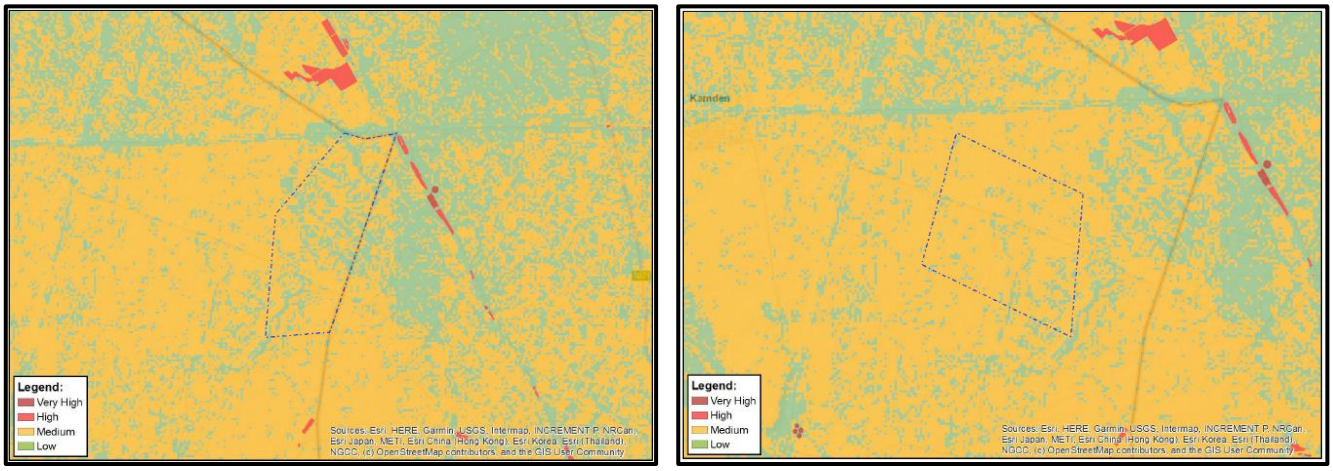


Figure 89: Agricultural Theme Sensitivity of the farm Mahura Muthla No 198 (left pane)and Mora Schuba No 201 (right pane) according to the DFFE screening report.

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 Mahura Muthla No 198 and Mora Schuba No 201.

Table 14: Land uses and/or prominent features that occur within/within 500 m radius of Mahura Muthla No 198 and Mora Schuba No 201.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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**	-	A quarry borders the north-eastern side of Mahura Muthla No 198/2. This quarry is within the North West Province.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	-
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 a historical building unless otherwise authorised by the specialist and SAHRA.		
Protected Area	-	**NO**	-
Graveyard	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.		
Archaeological site			
Other land uses (describe)	-	**NO**	-

KUNGKUNG NO 123, SEDUALL NO 124 & BOLAND NO 133

These three farms cover a combined area of 30 672 ha, with Boland No 133 comprising the largest part of it. As mentioned earlier, the Matlharing River enters Kungkung No 123 and the northern parts of Seduall No 124 that joins up with the wetlands system near Bothetheletsa. The main land use is livestock farming with some pivots used to irrigate crops. The R372 passes through the western corner of Boland No 133.

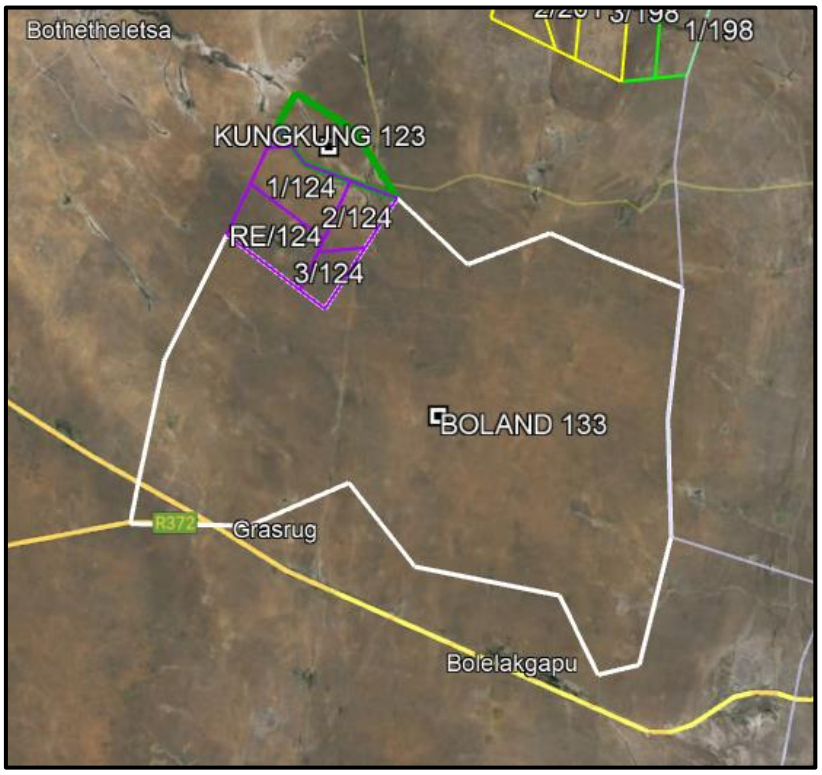


Figure 90: Satellite view of the farm boundaries where the green polygons indicate the boundaries of the farm Kungkung No 123, the purple shows Seduall No 124 and the white polygon indicate the boundaries of Boland No 133 (image obtained from Google Earth).

The following images show the land capability of the farms Kungkung No 123, Seduall No 124, and Boland No 133 as presented in the DFFE Screening Report.

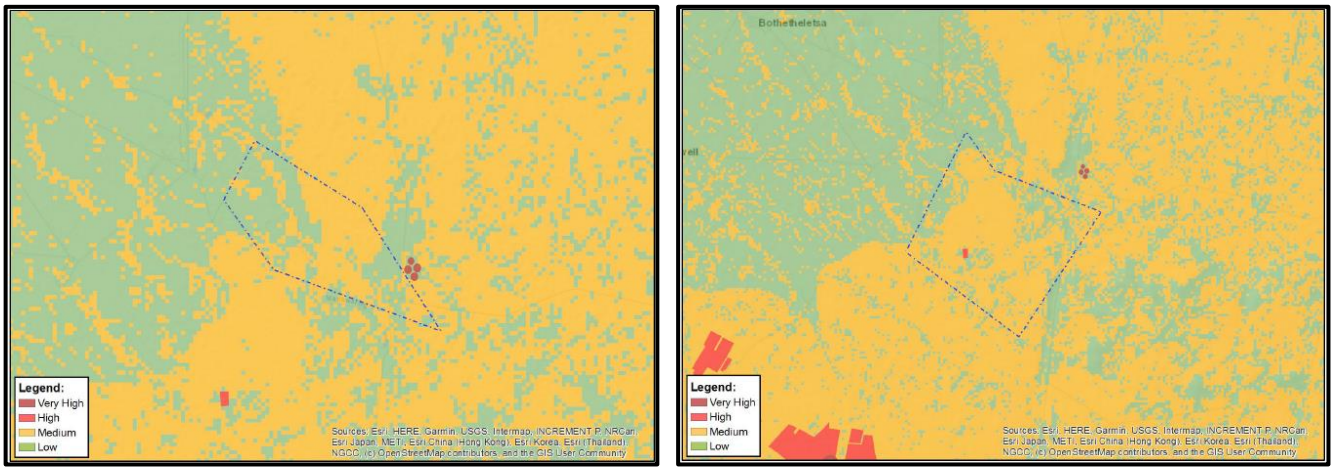


Figure 91: Agricultural Theme Sensitivity of the farm Kungkung No 123 (left pane)and Seduall No 124 (right pane) according to the DFFE screening report.

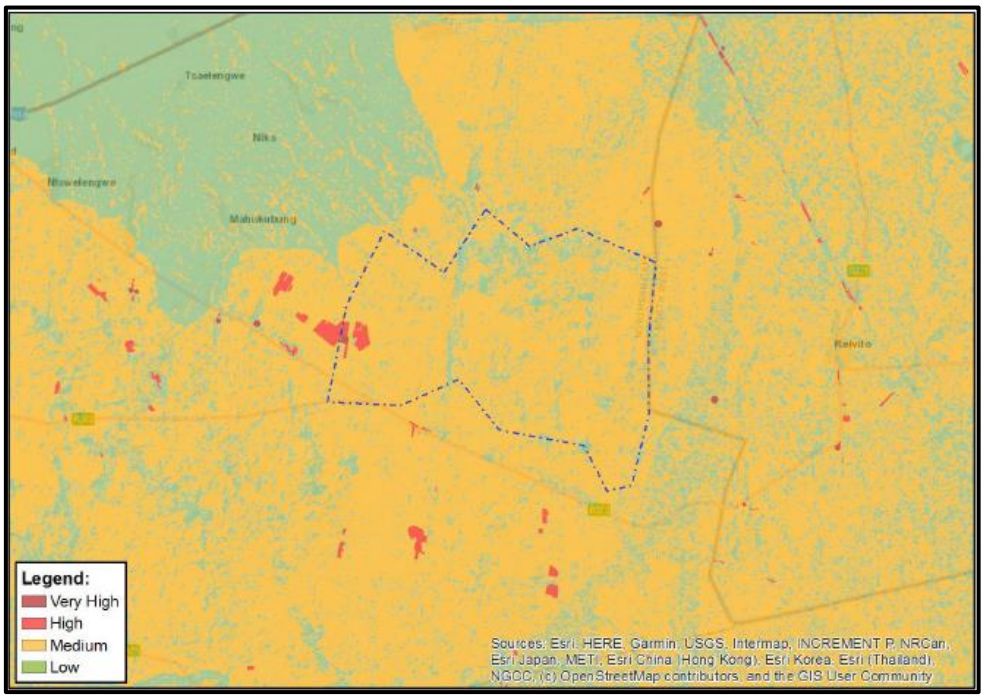


Figure 92: Agricultural Theme Sensitivity of the farm Boland No 133 according to the DFFE screening report.

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 Kungkung No 123, Seduall No 124, and Boland No 133.

Table 15: Land uses and/or prominent features that occur within/within 500 m radius of Kungkung No 123, Seduall No 124, and Boland No 133.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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	-	**NO**	-
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
Hospital/medical centre	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
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**	The R372 passes through the western corner of the application area.
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	-
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 a historical building unless otherwise authorised by the specialist and SAHRA.		
Protected Area	-	**NO**	-
Graveyard	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.		
Archaeological site			
Other land uses (describe)	-	**NO**	-

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124 & FARM NO 123 (TOEKOMS)

An unknown stream crosses through Helvetia No 126 and Brandziekfontein No 124 passing Farm No 123 (Toekoms) to the north. The main land use is livestock grazing with a few residences established along the riverbank. Various private farm roads pass through the farms. The farm Annex Helvetia No 125 connects the farms Helvetia No 126 and Brandziekfontein No 124.

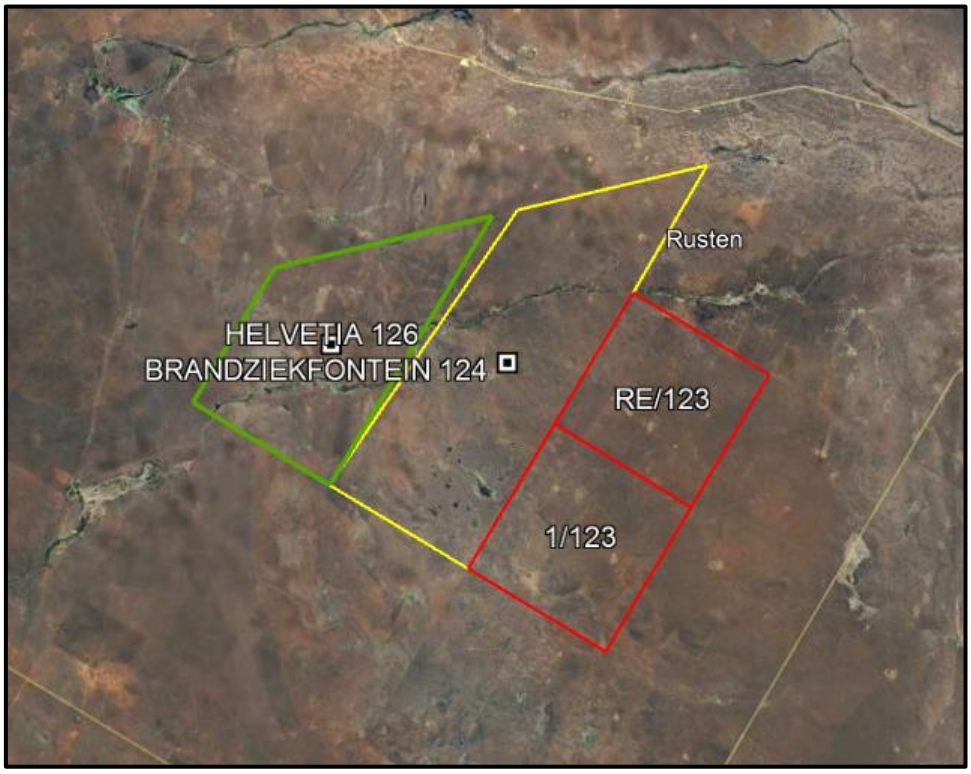


Figure 93: Satellite view of the farm boundaries where the green polygons indicate the boundaries of the farm Helvetia No 126, the yellow polygon shows Brandziekfontein No 124 and the red polygons indicate the boundaries of Farm No 123 (Toekoms) (image obtained from Google Earth).

The following images show the land capability of the farms Helvetia No 126, Brandziekfontein No 124 and Farm No 123 (Toekoms) as presented in the DFFE Screening Report.

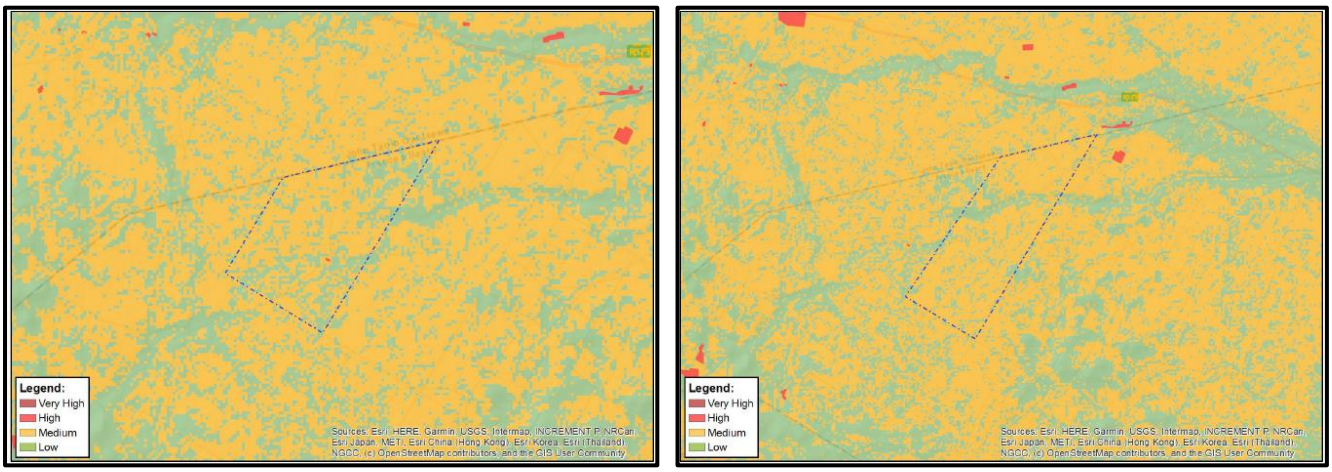


Figure 94: Agricultural Theme Sensitivity of the farm Helvetia No 126 (left pane) and Brandziekfontein No 124 (right pane) according to the DFFE screening report.

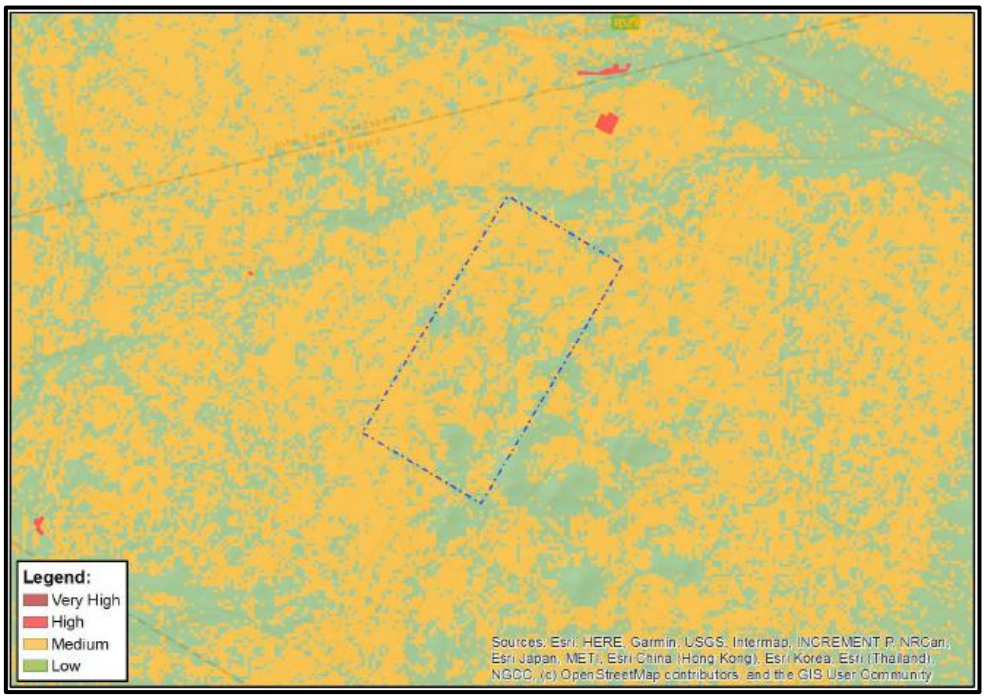


Figure 95: Agricultural Theme Sensitivity of the Farm No 123 (Toekoms) according to the DFFE screening report.

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 Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms).

Table 16: Land uses and/or prominent features that occur within/within 500 m radius of Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms).

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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	-	**NO**	**-**
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
Hospital/medical centre	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	-
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 a historical building unless otherwise authorised by the specialist and SAHRA. The historic Bosman Dwelling (connected with the Wonderwerk Cave) is more than 500 m from the application area.		
Protected Area	-	**NO**	-
Graveyard	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. The Wonderwerk Cave is more than 11 km from the application area, and the Boesmansgat Sinkhole is >8 km to the south-west.		
Archaeological site			
Other land uses (describe)	-	**NO**	-

HARTEBEESTDALE NO 564 & KOGGELBEEN NO 44

Hartebeestdale No 564 borders Kogelbeen No 44 to the north-east. Kogelbeen Cave is present on Portion 1 of Kogelbeen No 44 and forms part of eight caves on the dolomitic Ghaap Plateau of the Northern Cape. It is the longest known cave in the

Northern Cape with a length of 788 m. Due to various factors the caves are inaccessible and do not have a tourism potential yet. The main land use is livestock farming, and various private farm roads pass through the farms.

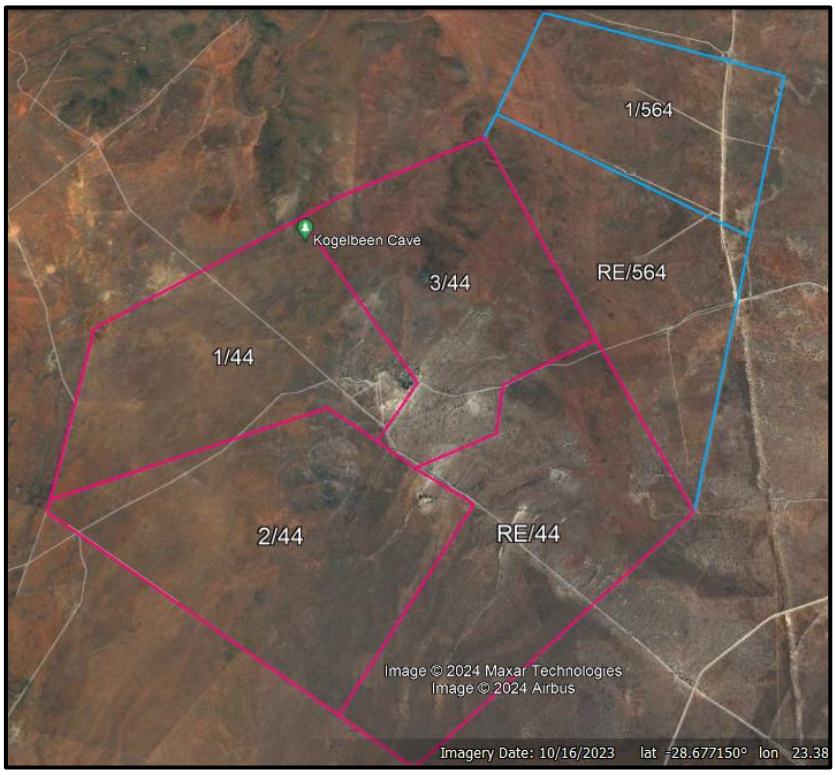


Figure 96: Satellite view of the farm boundaries where the blue polygons indicate the boundaries of the farm Hartebeestdale No 564, and the pink polygons indicate the boundaries of Kogelbeen No 44. Also note the position of the Kogelbeen Cave (image obtained from Google Earth).

The following images show the land capability of the farms Hartebeestdale No 564 and Kogelbeen No 44 as presented in the DFFE Screening Report.

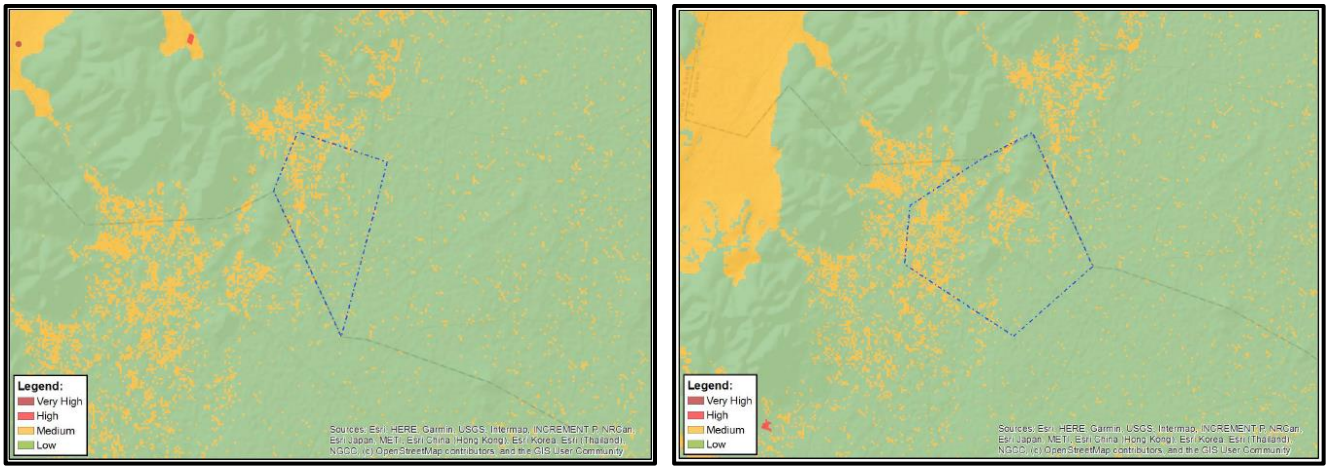


Figure 97: Agricultural Theme Sensitivity of the farm Hartebeestdale No 564 (left pane) and Kogelbeen No 44 (right pane) according to the DFFE screening report.

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 Hartebeestdale No 564 and Kogelbeen No 44.

Table 17: Land uses and/or prominent features that occur within/within 500 m radius of Hartebeestdale No 564 and Kogelbeen No 44.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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	-	**NO**	-
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint and surrounds.
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	-	**NO**	-
Nature conservation area	**YES**	-	Hartebeestdale No 564 is part of the Rockwood Nature Reserve.
Mountain, hill, or ridge	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
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	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 unless otherwise authorised by the specialist and SAHRA.		
Archaeological site	**YES**	-	Kogelbeen Cave is present on Portion 1 of Kogelbeen No 44.
Other land uses (describe)	-	**NO**	-

BANGHOEK NO 17

The farm Banghoek No 17 extends up to the southern bank of the Orange River. The farm is mainly used for livestock grazing and has numerous drainage lines crossing through it flowing towards the river.

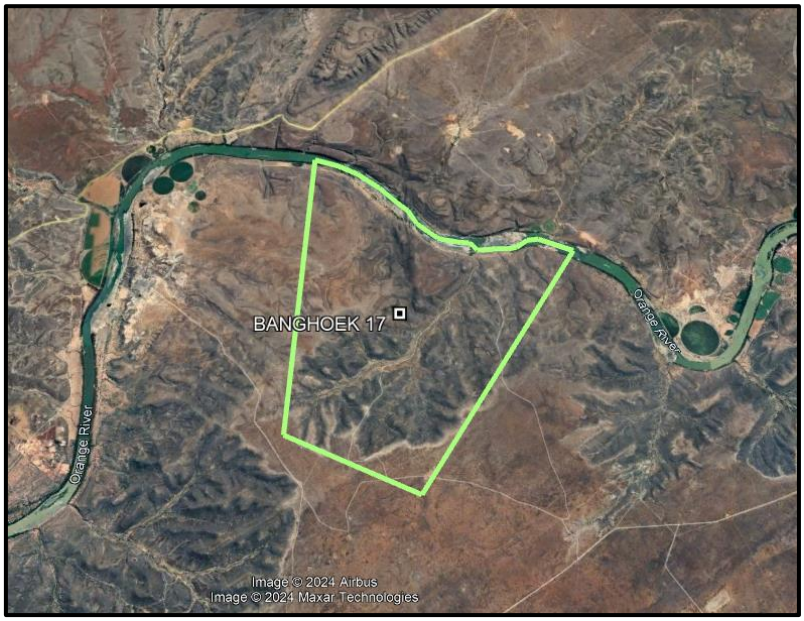


Figure 98: Satellite view of the farm boundaries (green polygon) joining the southern bank of the Orange River (image obtained from Google Earth).

The following images show the land capability of the farm Banghoek No 17 as presented in the DFFE Screening Report.

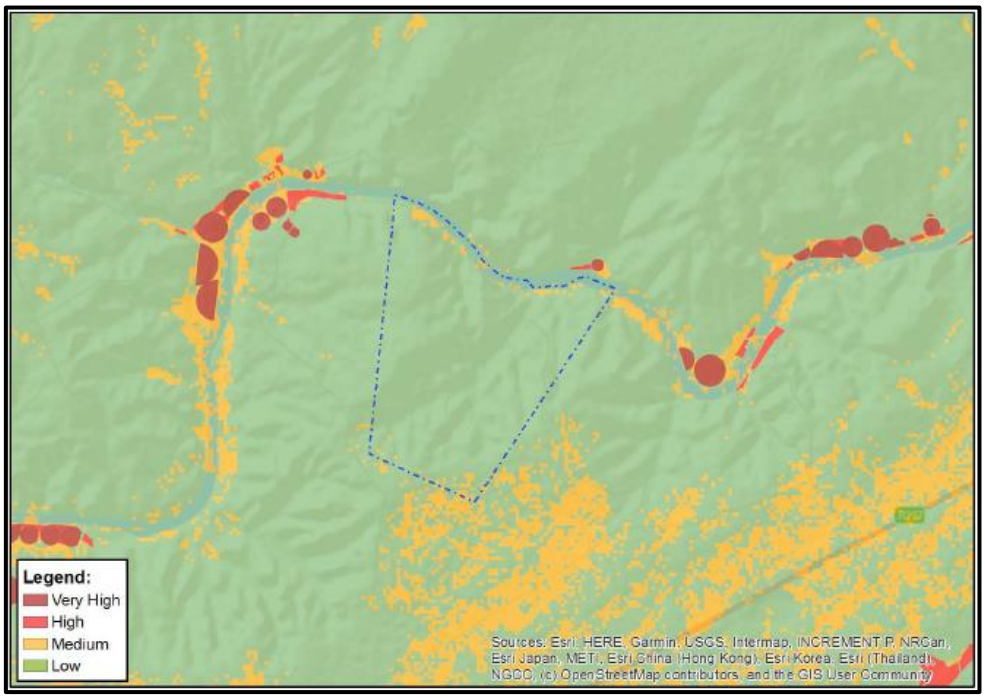


Figure 99: Agricultural Theme Sensitivity of the farm Banghoek No 17 according to the DFFE screening report.

The following table provides a list of the land uses and/or prominent features that were identified within a 500 m radius of the farm Banghoek No 17.

Table 18: Land uses and/or prominent features that occur within/within 500 m radius of Banghoek No 17.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area 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 diggings do occur within 500 m of the application area.
Dam or reservoir	**YES**	-	Various farm dams occur within the prospecting footprint.
Hospital/medical centre	-	**NO**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
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 study area is surrounded by natural areas used for agricultural purposes.
River, stream, or wetland	**YES**	-	The Orange River forms the northern boundary of the farm.
Nature conservation area	-	**NO**	-
Mountain, hill, or ridge	**YES**	-	Various hills are present on and adjoining the farm.
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	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.		
Archaeological site			
Other land uses (describe)	-	**NO**	-

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

SPECIFIC ENVIRONMENTAL FEATURES

SITE SPECIFIC TOPOGRAPHY

LOWER KURUMAN NATIVE RESERVE NO 219 (LKNR)

The site specific topography of the application area on LKNR No 219 rises from the most western corner (1 281 mamsl) up the mountain range (western part of the farm), from where the elevation drops towards the plains in the east (±1 207 mamsl). The

mean elevation of the farm between the most western and eastern corners ranges from 1 281 mamsl to 1 245 mamsl. As shown in the following figure the elevation loss of the area is 152 m over 11.8 km, the elevation profile shows a maximum slope of 9.6% with an average slope of 1.6%.

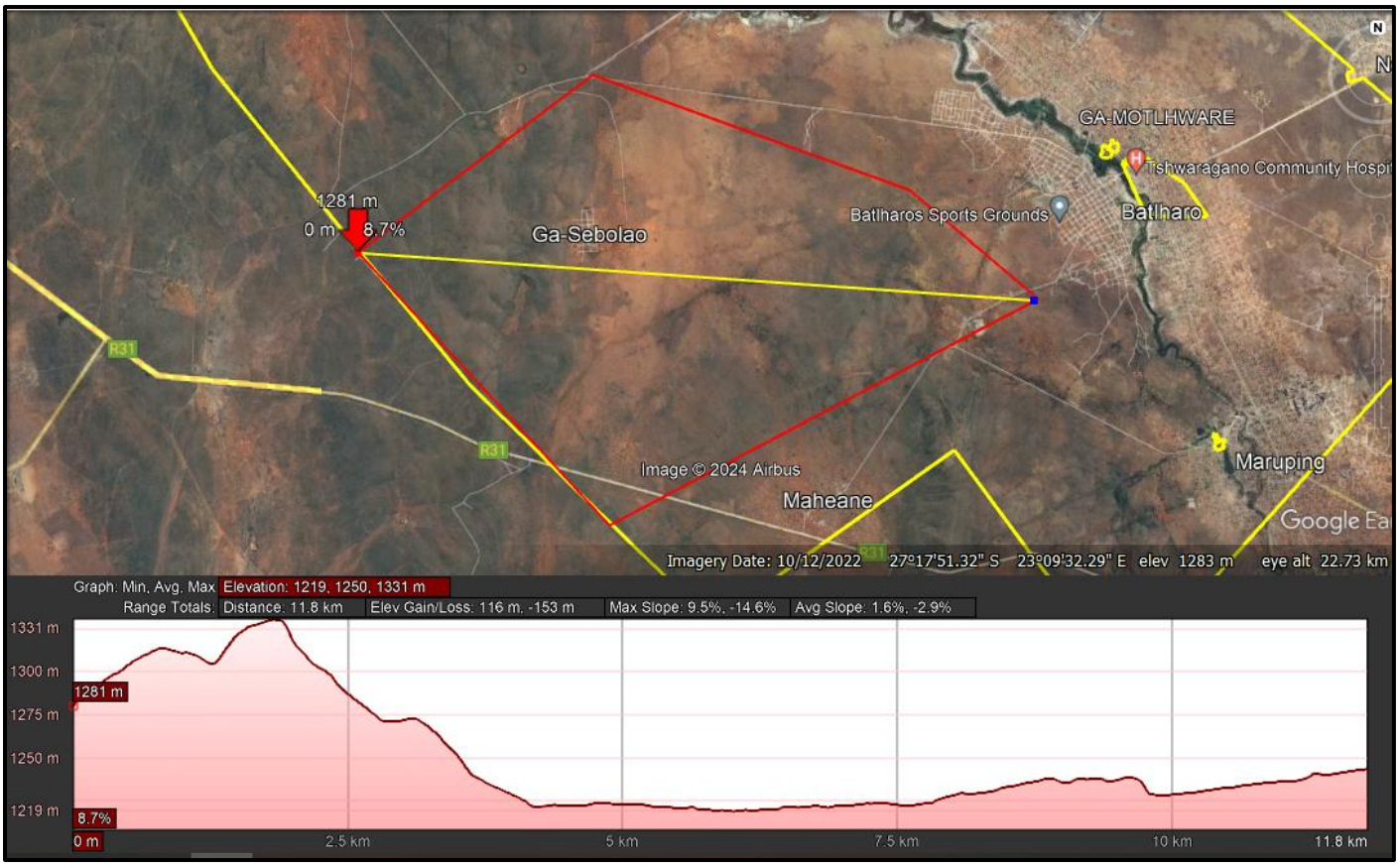


Figure 100: Elevation profile of the application area on the farm LKNR No 219 (image obtained from Google Earth).

EDGEHILL NO 194 & ALPHEN NO 442

The site specific topography of the farms Edgehill No 194 and Alphen No 442 is generally flat with a sharp rise in elevation up the Asbestos Hills in the south-west of Alphen No 442/2. The mean elevation of the farms range from ±1 769 mamsl to 1 367 mamsl. As shown in the following figure the elevation gain of the area is 422 m over 10.7 km, the following elevation profile shows a maximum slope of 4.7% with an average slope of 1.1%.

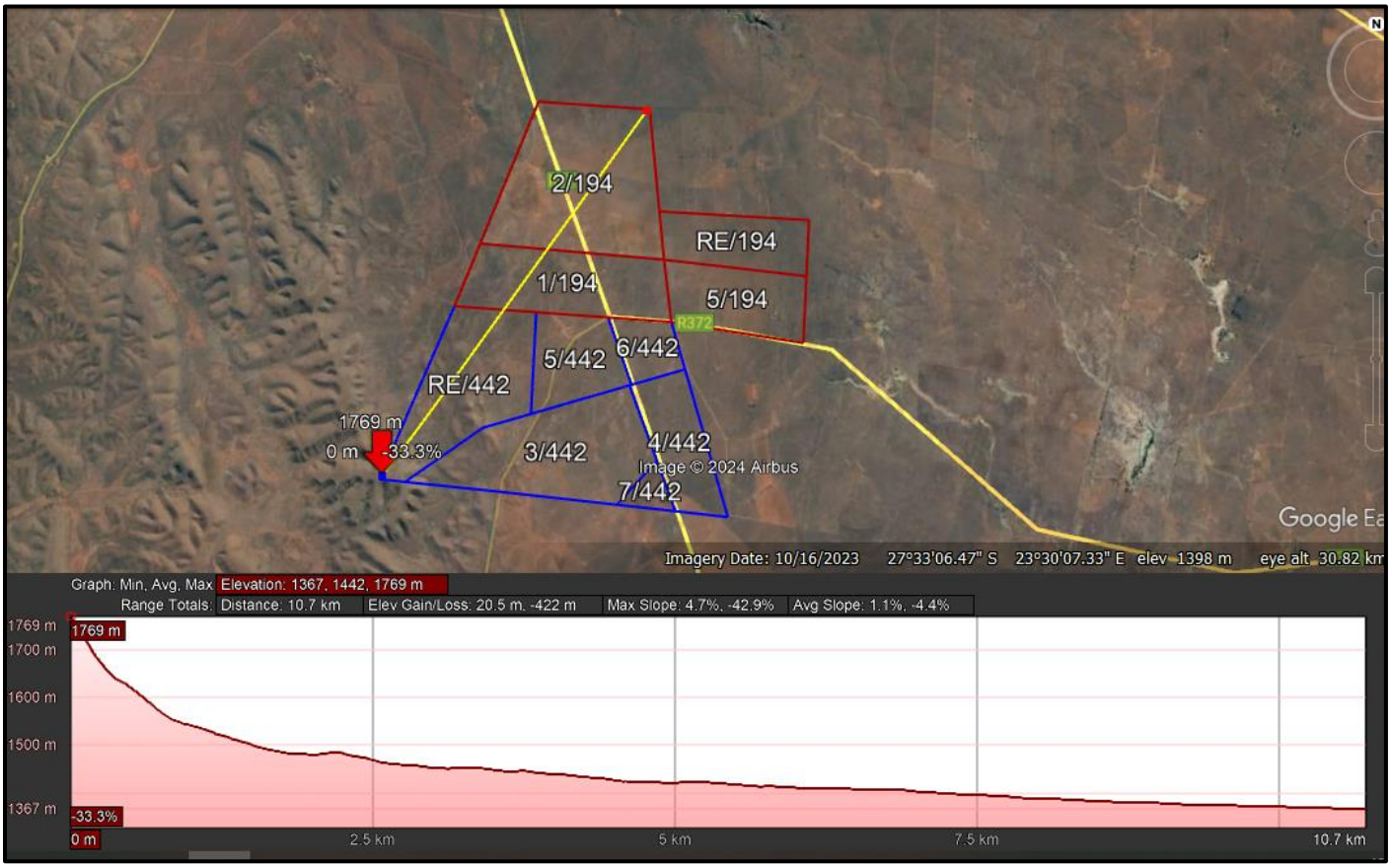


Figure 101: Elevation profile of the application area on the farm Edgehill No 194 & Alphen No 442 (image obtained from Google Earth).

MAHURA MUTHLA NO 198 & MORA SCHUBA NO 201

The site specific topography of the farms Mahura Muthla No 198 and Mora Schuba No 201 is generally flat with a slight rise in elevation towards the south-western corner. The mean elevation of the farms range from ±1 465 mamsl to 1 455 mamsl. As shown in the following figure the elevation gain of the area is 29.4 m over 12.5 km, the following elevation profile shows a maximum slope of 3.9% with an average slope of 0.3%.

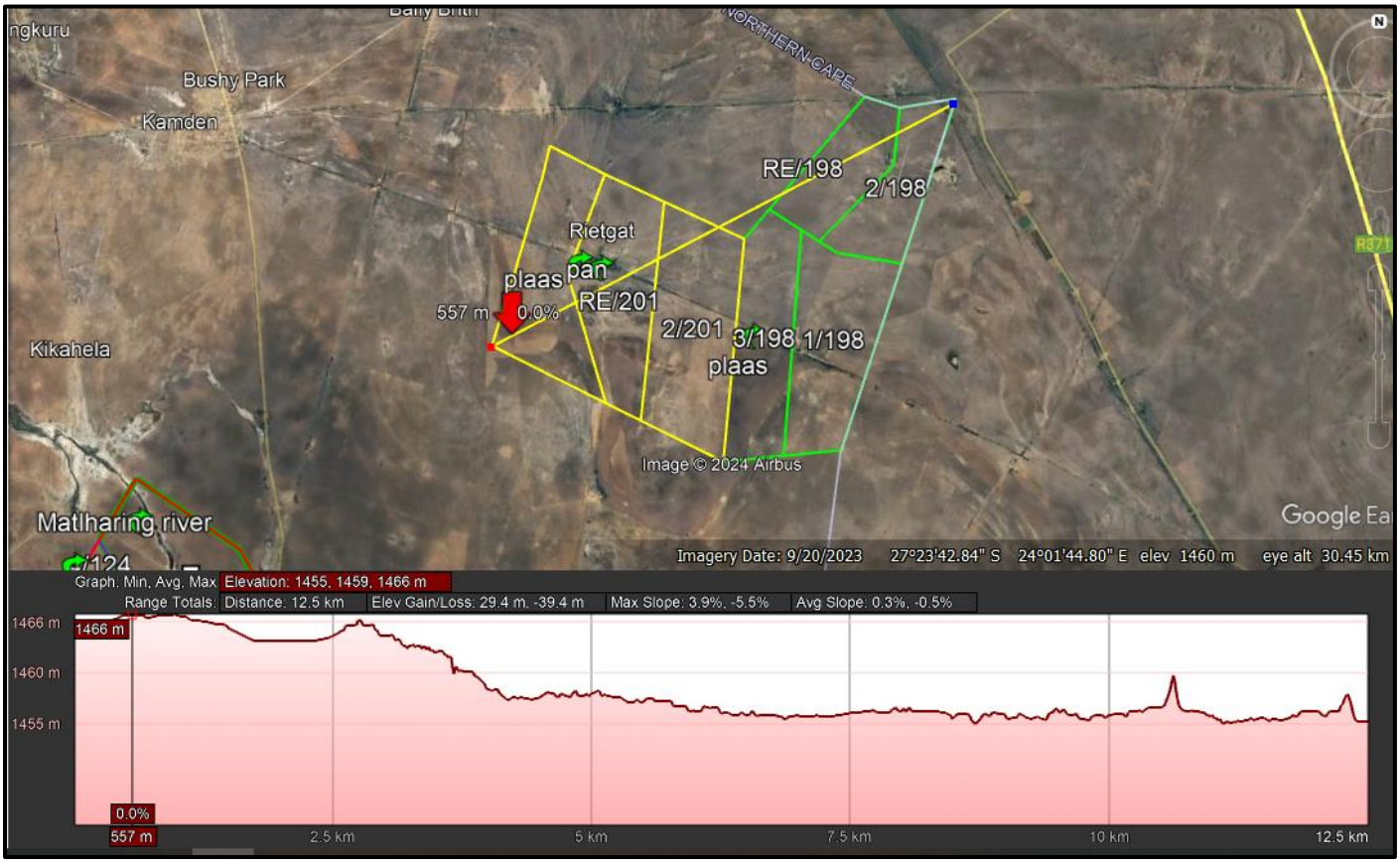


Figure 102: Elevation profile of the application area on the farms Mahura Muthla No 198 and Mora Schuba No 201 (image obtained from Google Earth).

KUNGKUNG NO 123, SEDUALL NO 124 & BOLAND NO 133

The site specific topography of the abovementioned farms are relatively flat with a gradual decrease in elevation towards the north. As presented below, when the elevation profile is measured from the northern corner of Kungkung No 123 to the southern corner of Boland No 133, there is a slight rise towards the middle of Boland No 133 before the elevation slants down again. The mean elevation of the farms range from ±1 507 mamsl to 1 450 mamsl. As shown in the following figure the elevation loss of the area is 174 m over 46.9 km, the following elevation profile shows a maximum slope of 4.0% with an average slope of 0.5%.

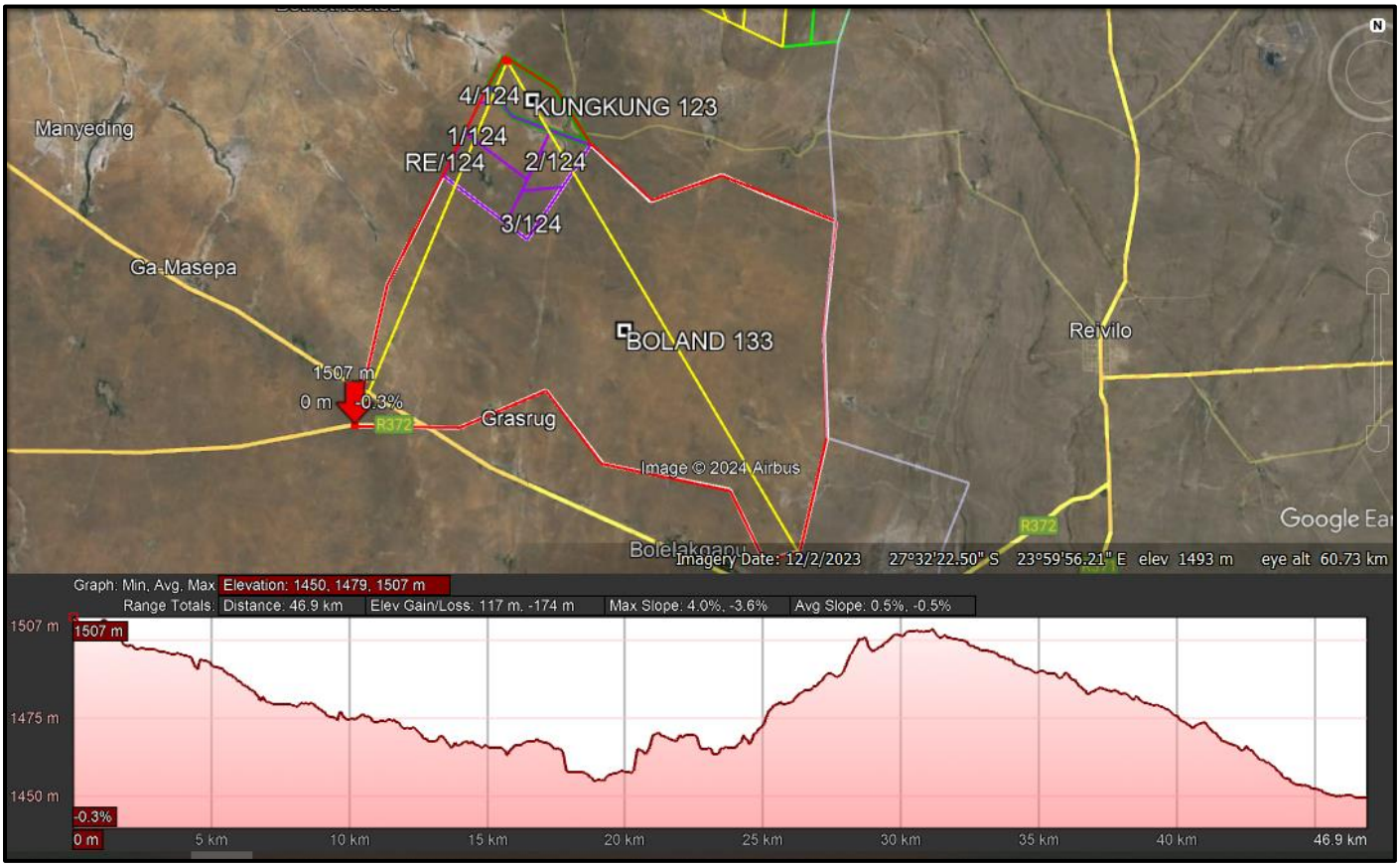


Figure 103: Elevation profile of the application area on the farms Kungkung No 123, Seduall No 124, and Boland No 133 (image obtained from Google Earth).

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124 & FARM NO 123 (TOEKOMS)

The site specific topography of the abovementioned farms are relatively flat with a slight decrease in elevation towards the east. The mean elevation of the farms range from ±1 532 mamsl to 1 487 mamsl. As shown in the following figure the elevation loss of the area is 66 m over 13.6 km, the following elevation profile shows a maximum slope of 2.4% with an average slope of 0.3%.

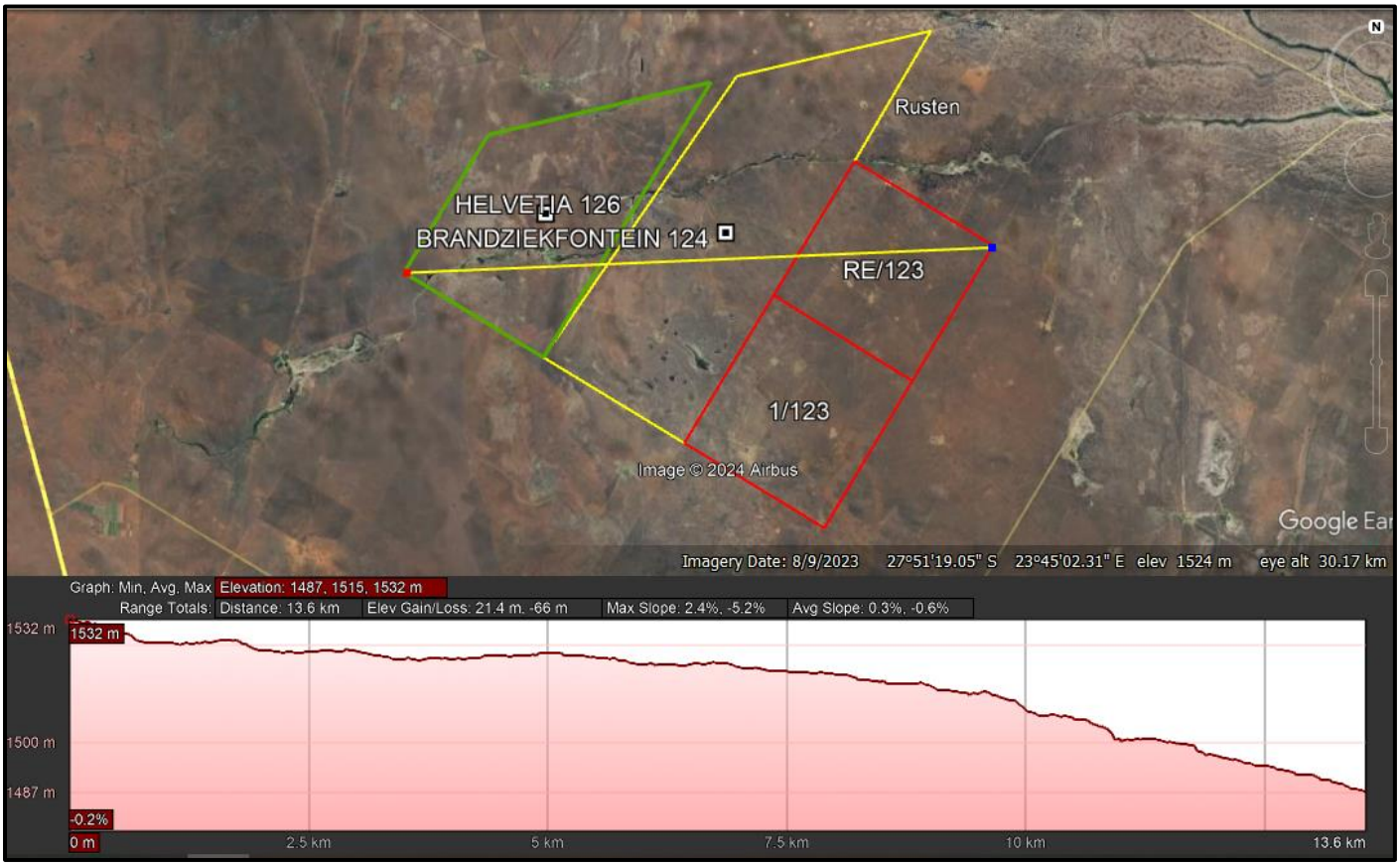


Figure 104: Elevation profile of the application area on the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (image obtained from Google Earth).

HARTEBEESTDALE NO 564 & KOGELBEEN NO 44

The site specific topography of the abovementioned farms are relatively flat with a sharp rise in elevation up the hills on Kogelbeen No 44/2 as presented below. The mean elevation of the farms range from ±1 443 mamsl to 1 383 mamsl. As shown in the following figure the elevation loss of the area is 146 m over 18.6 km, the following elevation profile shows a maximum slope of 13.6% with an average slope of 1.0%.

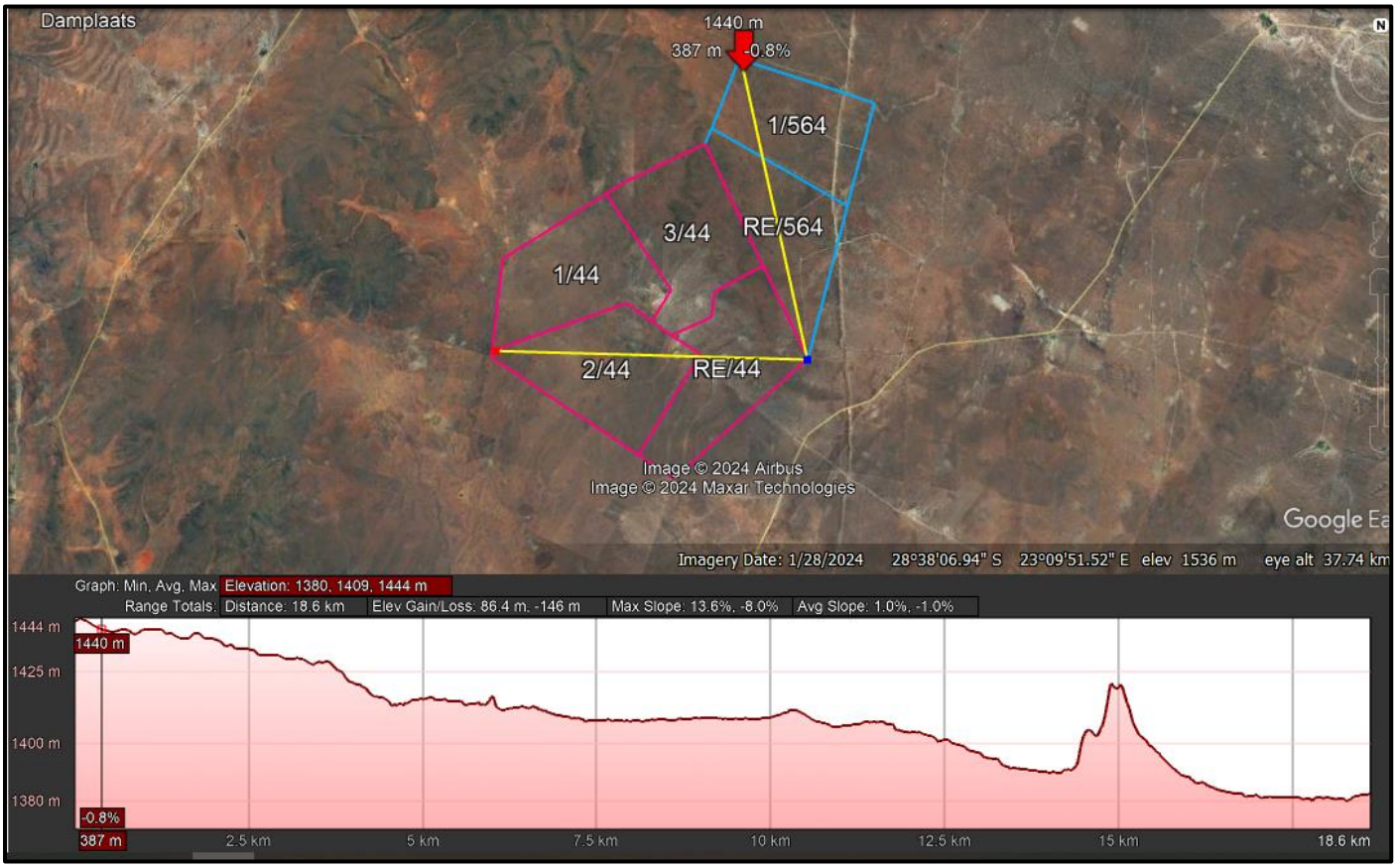


Figure 105: Elevation profile of the application area on the farms Hartebeestdale No 564 and Kogelbeen No 44 (image obtained from Google Earth).

BANGHOEK NO 17

The site specific topography of the abovementioned farm slopes towards the banks of the Orange River. As presented below the various hills create ridges and valleys throughout the farm. The mean elevation of the farms range from ±1 064 mamsl to 958 mamsl. As shown in the following figure the elevation loss of the area is 294 m over 7.75 km, the following elevation profile shows a maximum slope of 33.1% with an average slope of 6.5%.

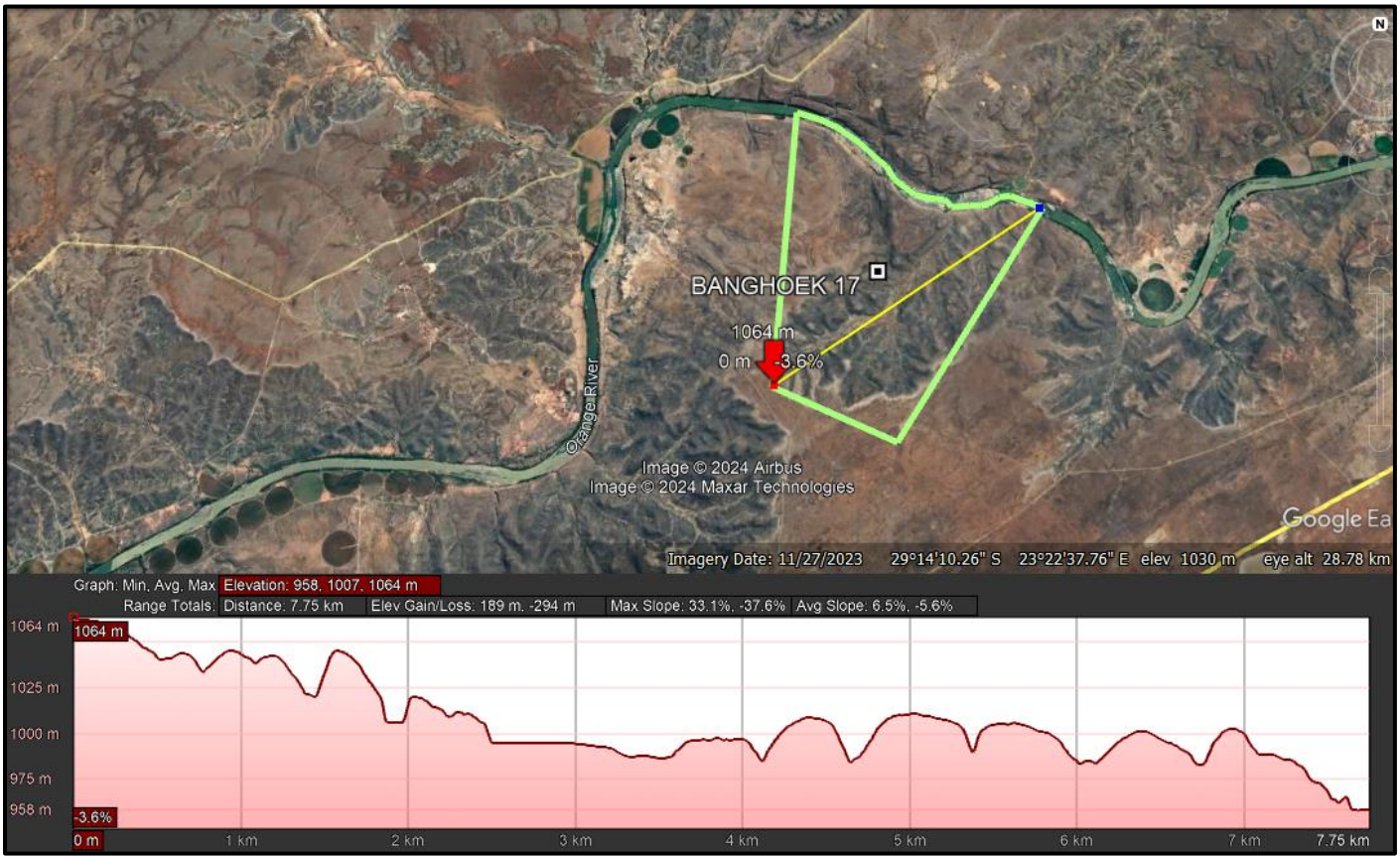


Figure 106: Elevation profile of the application area on the farm Banghoek No 17 (image obtained from Google Earth).

Conclusion

The prospecting activities will not impact the topography of the area as all boreholes will be capped and the trenches will be refilled after sampling. 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 environment upon closure of the PR.

SITE SPECIFIC VISUAL CHARACTERISTICS

This prospecting right application extends across 66 107.1283 ha and includes 61 farm portions and remaining extends. Most of the study area is scarcely populated, and as mentioned earlier, the area of disturbance is expected to be ±400 m² per drill site 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 without mitigation and low significance once the mitigation measures are implemented.

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 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 LKNR No 219 are impacted on by the nearby villages and traffic along the R31. The R31 also travel through the farms Edgehill No 194 and Alphen No 442 with the R372 joining the R31 along the shared boundary of the two farms. Apart from traffic passing through the farms, the area is rural in general and has very little dust/noise generators. The same applies to the remaining farms that are very scarcely populated and highly rural.

All 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 therefore have a low impact on the receiving environment.

SITE SPECIFIC GEOLOGY AND SOIL

(Information obtained from the Strata Africa Exploration – Northern Cape Licences Griekwastad – Kuruman Corridor, Northern Cape Province Literature Review & Remote Sensing Cu, Pb, Zn and Li Mineralisation Potential compiled by Minrom Consulting (Pty) Ltd in 2024)

Minrom Consulting (Pty) Ltd was commissioned to evaluate the mineralisation potential within the earmarked prospecting areas. The site specific geology of each earmarked area is discussed below. In short, all are within the larger Transvaal Supergroup. Also shown are the occurrences of Cu, Pb and Zn base metals and Li mineralisation relative to the application area.

LOWER KURUMAN NATIVE RESERVE NO 219, EDGEHILL NO 194, AND ALPHEN NO 442

These farms are dominated by rocks of the Danielskuil and Kuruman Formations of the Asbestos Hills Sub-group. The Danielskuil Formation consists of Iron-formation ("jaspilite"), mudrock (towards top), minor crocidolite, riebeckite and minnesotaite. The Kuruman Formation consists of Banded iron-formation (BIF), riebeckite-amphibolite, chert, minor minnesotaite and crocidolite. The remainder of the areas are dominated by dolomites and limestones of the Ghaap Group, with minor quartzite and shale locally. This is capped by a superficial cover layer of aeolian sand, soil, and rubble.

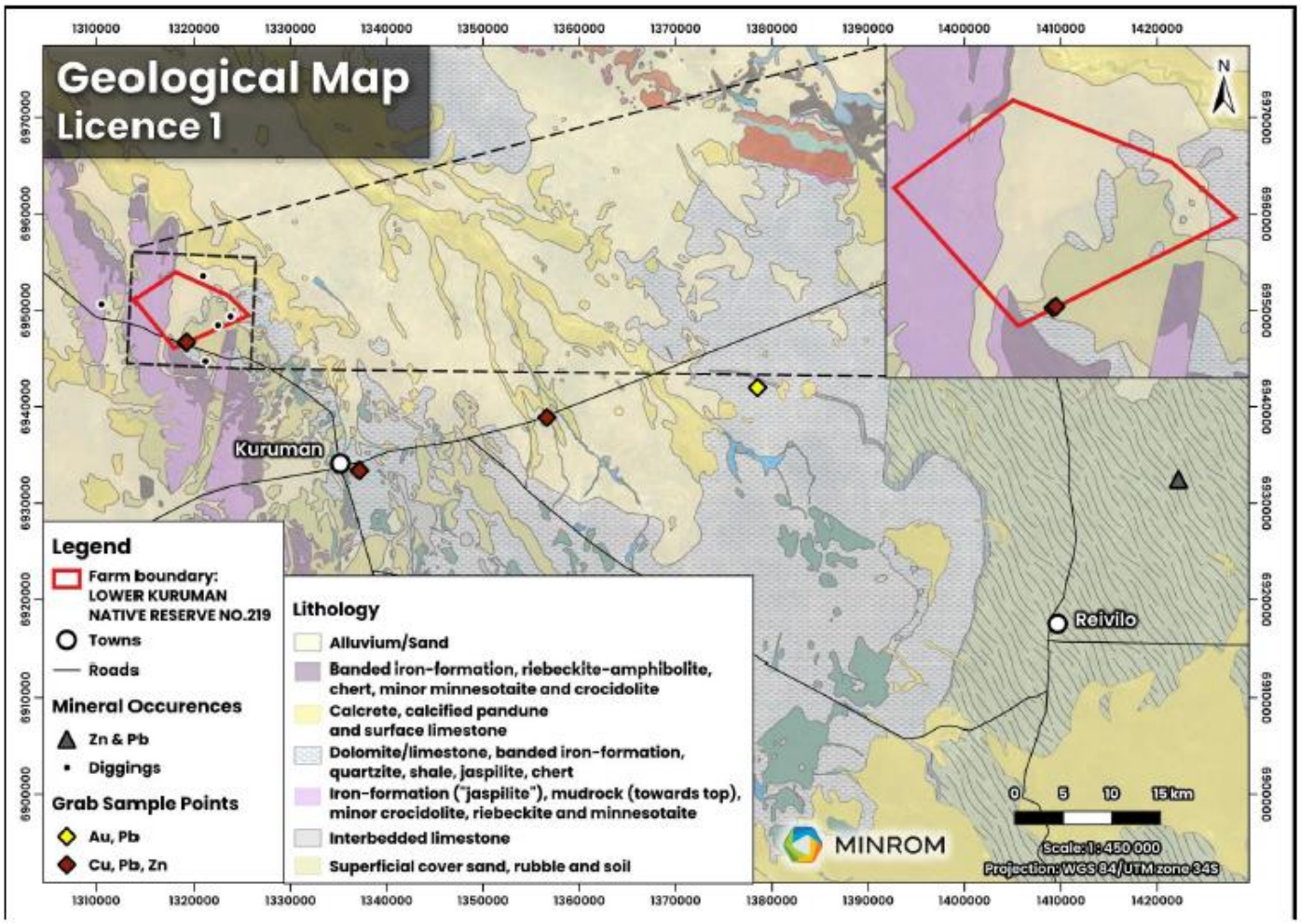


Figure 107: Site specific geological map of the earmarked area on the farm LKNR No 219 (image obtained from the Minrom Report)

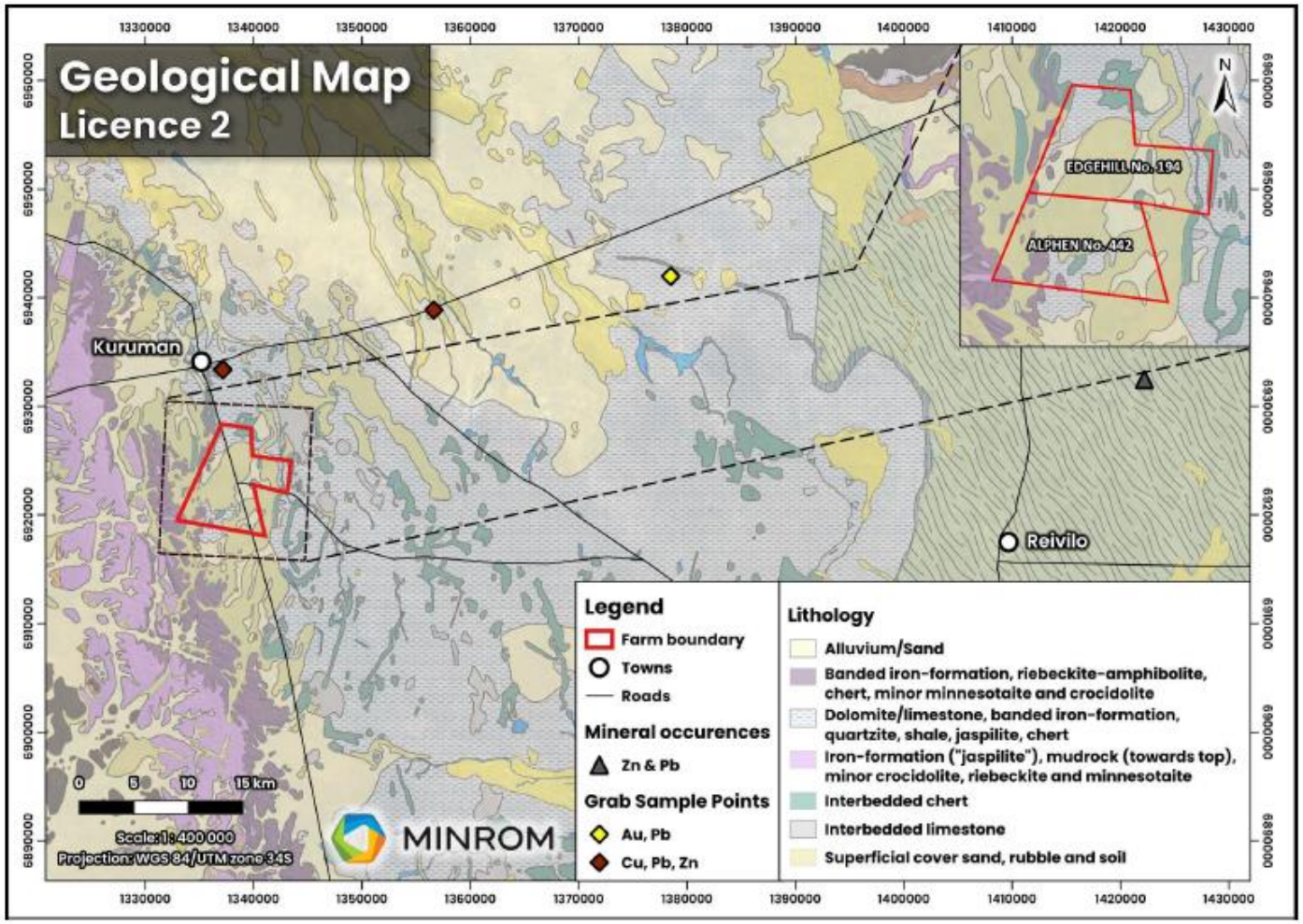


Figure 108: Site specific geological map of the farms Edgehill No 194 and Alphen No 442 (image obtained from the Minrom Report)

MAHURA MUTHLA NO 198, MORA SCHUBA NO 201, KUNGKUNG NO 123, SEDUALL NO 124, BOLAND NO 133, HARTEBEESTDALE NO 564, KOGELBEEN NO 44

These farms are dominated by dolomite/limestone, banded iron-formation, quartzite, shale, jaspilite, and cherts of the Ghaap Group. Locally, Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, and Boland No 133 may also contain laminated, iron-rich dolomite and ferruginous cherts, as well as chert-poor dolomite characterized by giant stromatolite domes (Reivilo Formation).

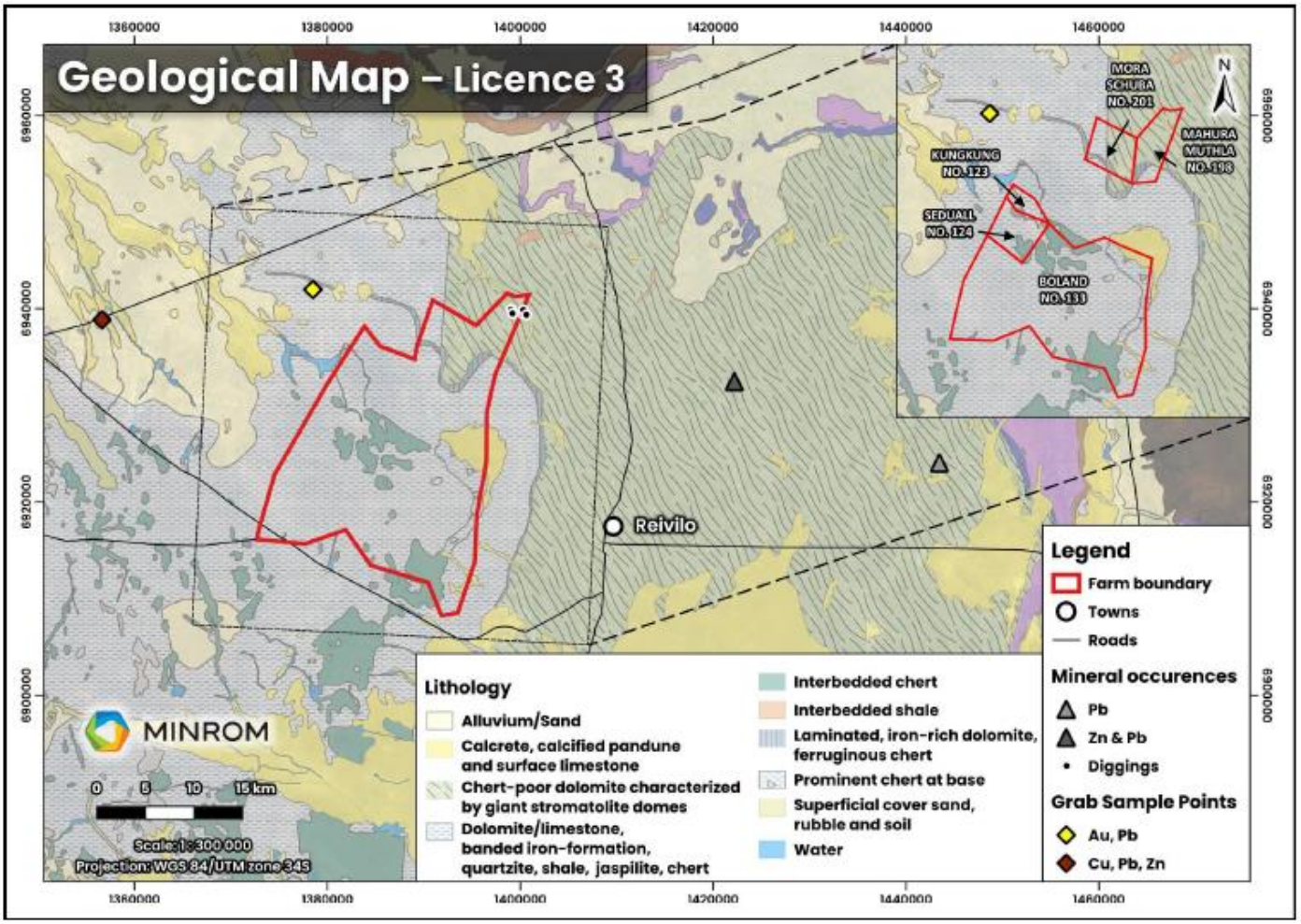


Figure 109: Site specific geological map of the farms Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, and Boland No 133 (image obtained from the Minrom Report)

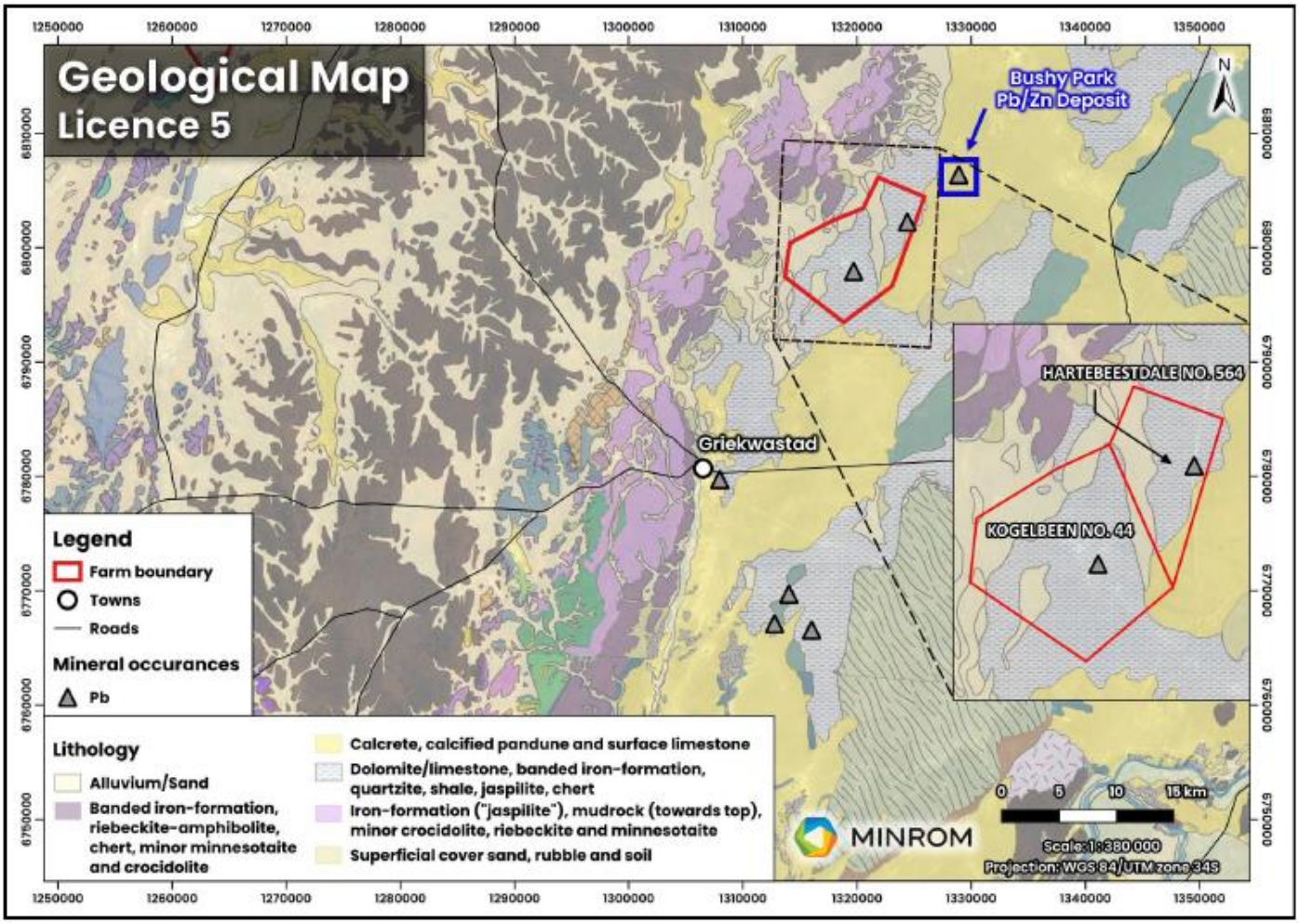


Figure 110: Site specific geological map of the farms Hartebeestdale No 564 and Kogelbeen No 44 (image obtained from the Minrom Report)

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124, AND FARM NO 123 (TOEKOMS)

These farms are dominated by andesitic and basaltic lavas with abundant pillow structures, and minor jasper, characteristic of the Ongeluk Formation of the Postmasburg Group. Locally there are also units of the Koegas Sub-Group, consisting of mudrock, quartzite (quartz wacke), jaspilite, dolomite and manganiferous iron-formations.

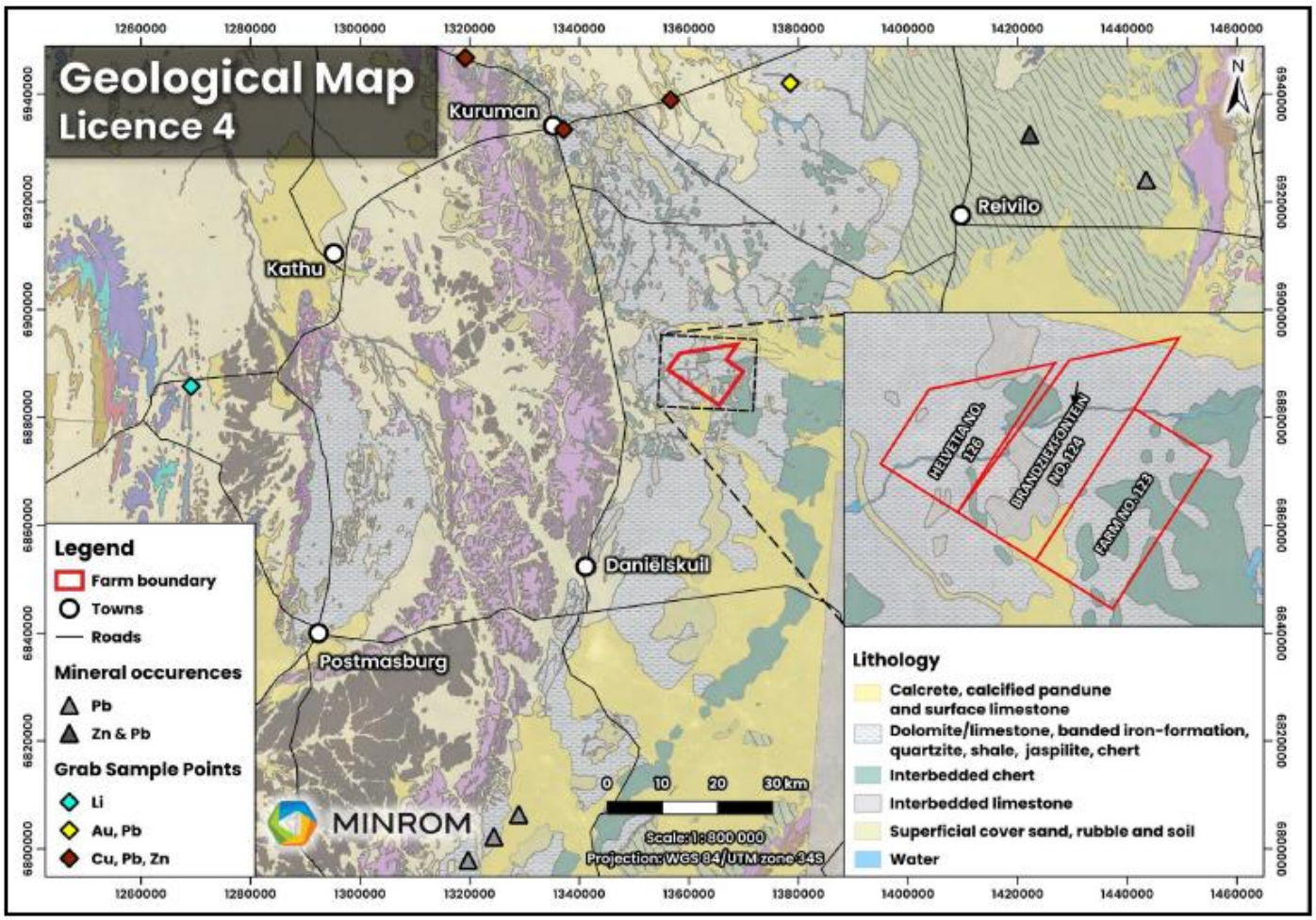


Figure 111: Site specific geological map of the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (image obtained from the Minrom Report)

BANGHOEK NO 17

Banghoek No 17 is dominated by diamictite, sandstone, siltstone and mudrock of the Mbizane Formation of the Dwyka Group (Karoo Supergroup). Dolomite/limestone and mudrocks of the Boomplaas Formation (Schmidtsdrif Sub-group) also occur in the north-west portion of the farm. Locally, quartzitic sandstone, mudrock, andesitic/basaltic lava, siltstone, clastic dolomite/limestone, minor conglomerate, tuff, and cherts of the Vryburg Formation may be found.

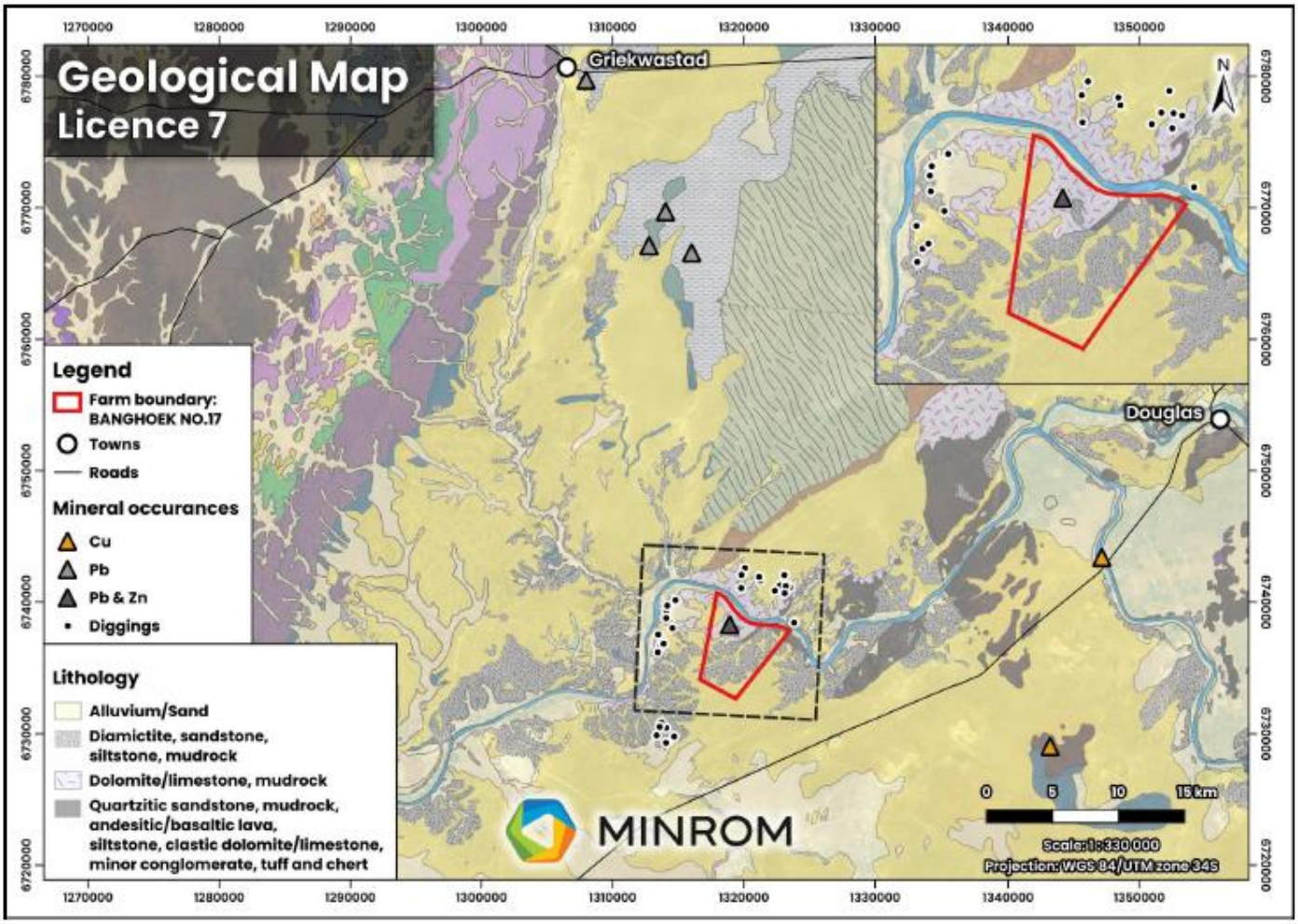


Figure 112: Site specific geological map of the farm Banghoek No 17 (image obtained from the Minrom Report)

Remote Sensing:

As a result of the size of the project area and noting that a large portion of the area consists of alluvial and aeolian cover sands, a remote sensing analysis was performed to identify exploration targets for ground truthing (geological site investigation). Minrom used a combination of remote sensing and geological interpretation to derive target areas for base metal exploration.

Landsat, Sentinel and ASTER image data were collected for the different licence areas in the application area. This image data was pre-processed and corrected for atmospheric “noise” in the images, such as cloud cover. The processed images were then subject to a set of calculations to produce visual representations of specific band ratios that can emphasize certain vegetation and geological features. These features are then interpreted in conjunction with geological data to infer corelations between the produced colours and actual geological features. This is extremely important for

exploration, as ore-forming fluids are intimately associated with specific rock types and mobilise through faulted zones of weakness.

Target Generation:

A total of 22 target areas have been identified from the remote sensing. These targets were ranked as high priority (green), medium priority (orange) and low priority (blue). The targets were ranked based on:

- Potential geological structures and outcrops highlighted in geologic and remote sensing analysis,
- Correlation to known mineral occurrences and surrounding diggings, and
- Proximity to surrounding mines and mining activity (Cu, Pb, Zn, Li).

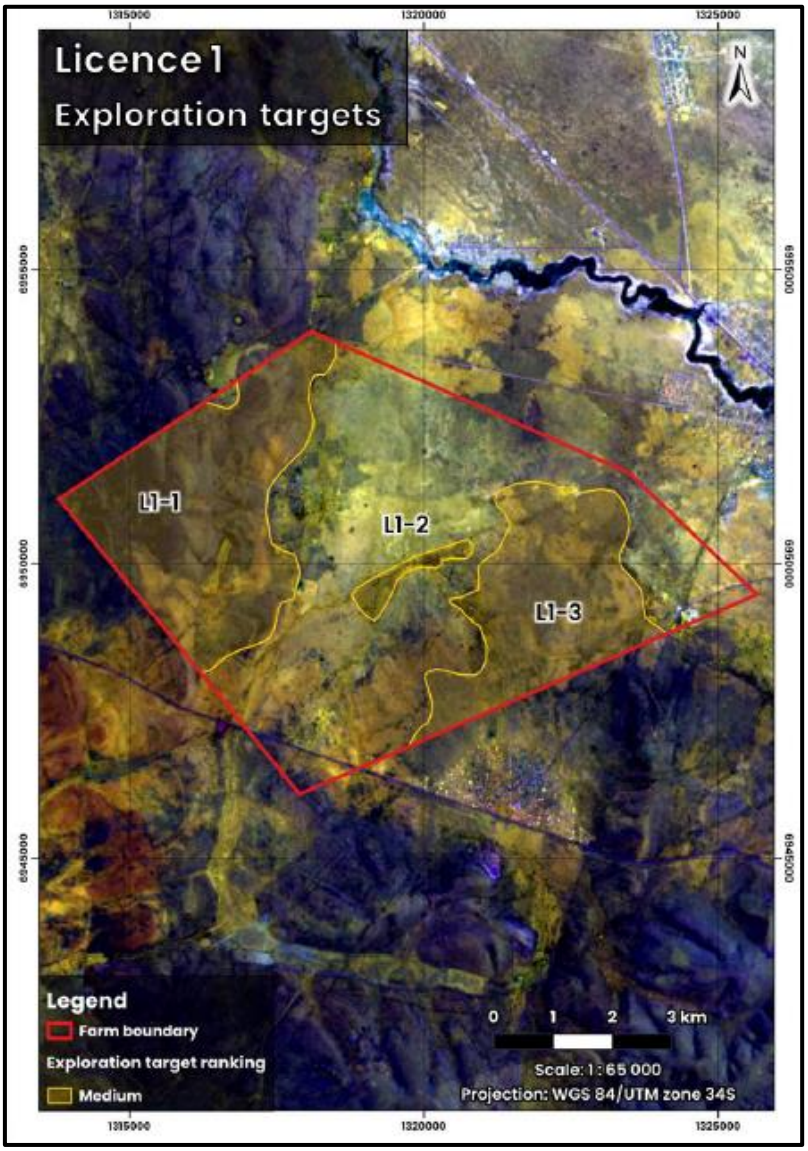


Figure 113: Remote sensing generated target ranking for the earmarked area on the farm LKNR No 219 (image obtained from the Minrom Report)

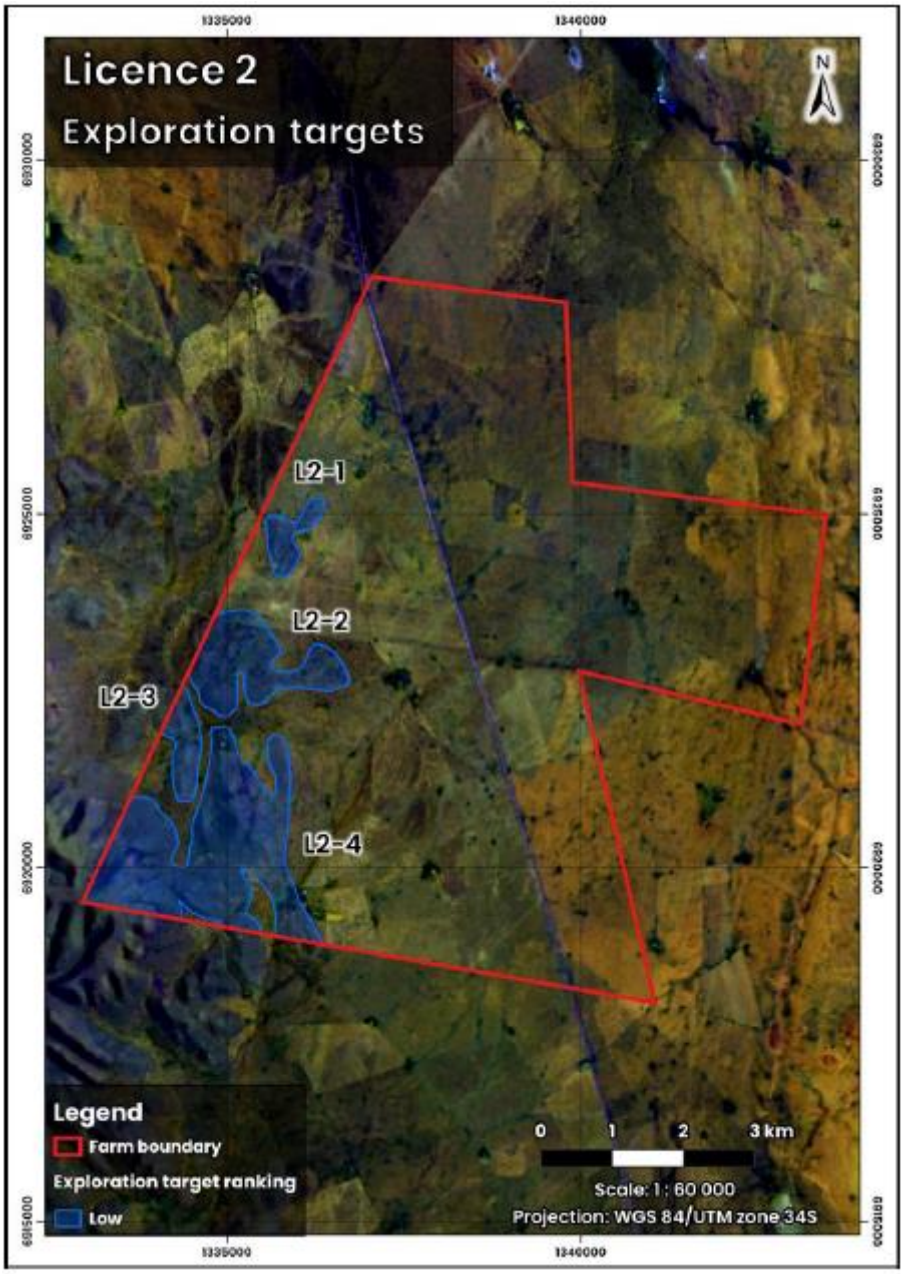


Figure 114: Remote sensing generated target ranking for the farms Edgehill No 194 and Alphen No 442 (image obtained from the Minrom Report)

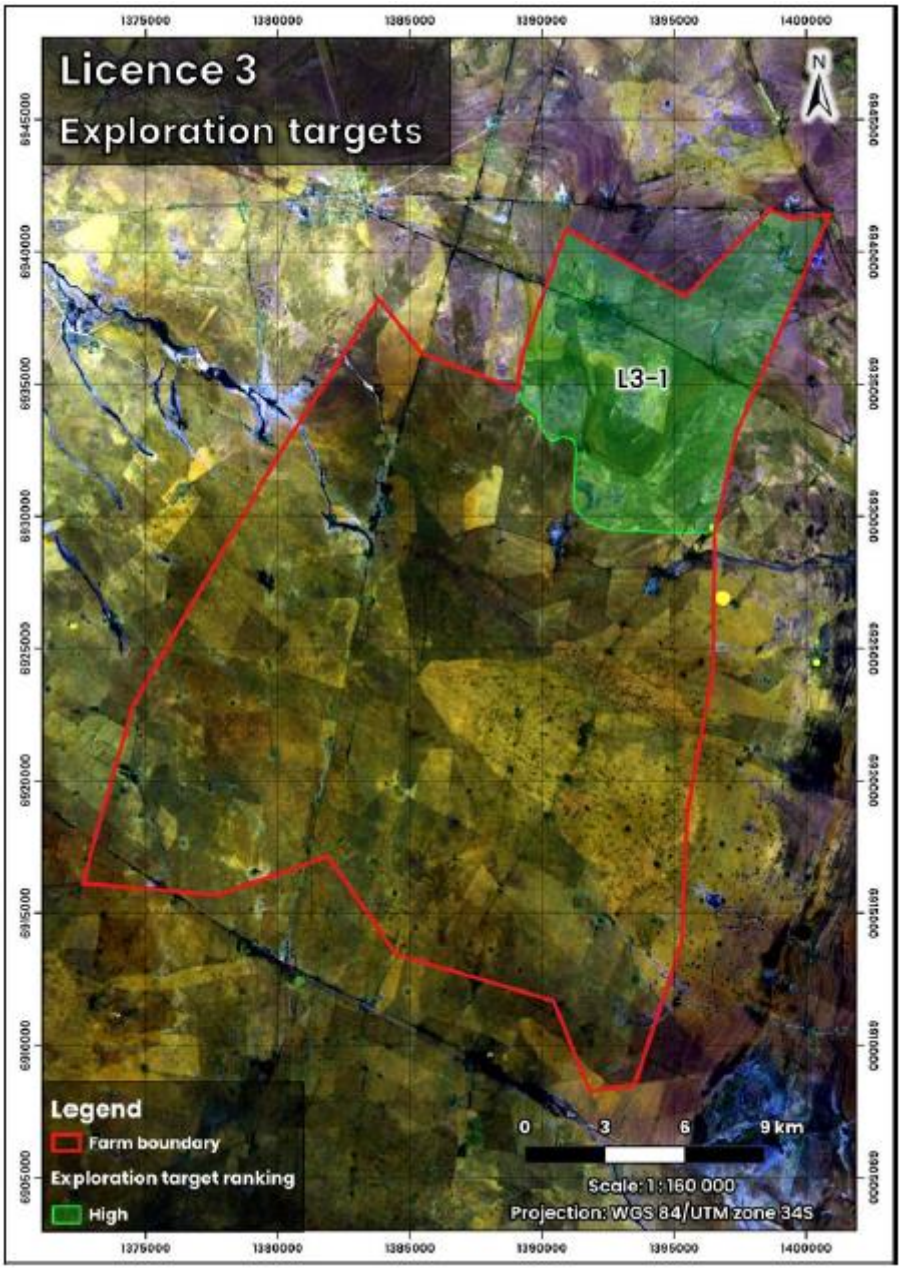


Figure 115: Remote sensing generated target ranking for the farms Mahura Muthla No 198, Mora Schuba No 201, Kungkung No 123, Seduall No 124, and Boland No 133 (image obtained from the Minrom Report)

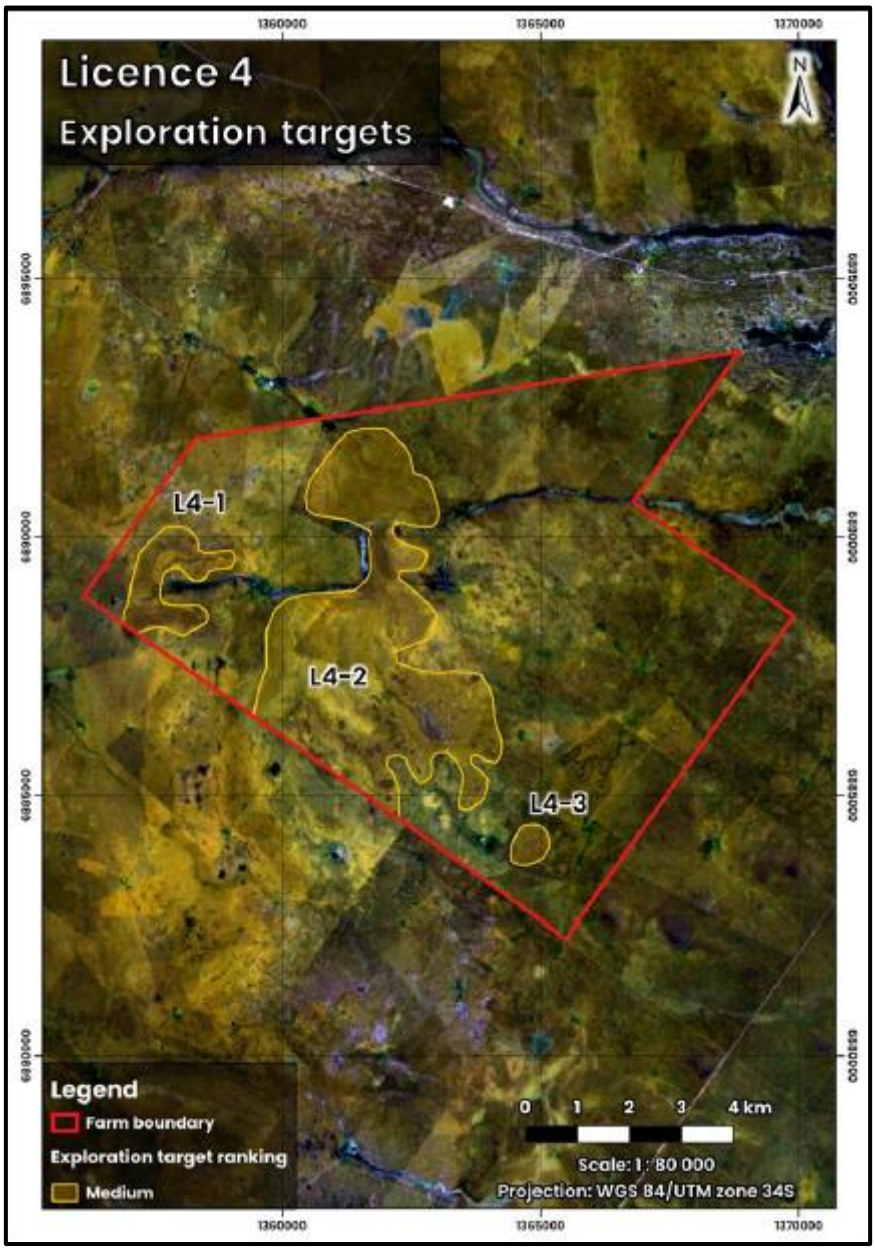


Figure 116: Remote sensing generated target ranking for the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (image obtained from the Minrom Report)

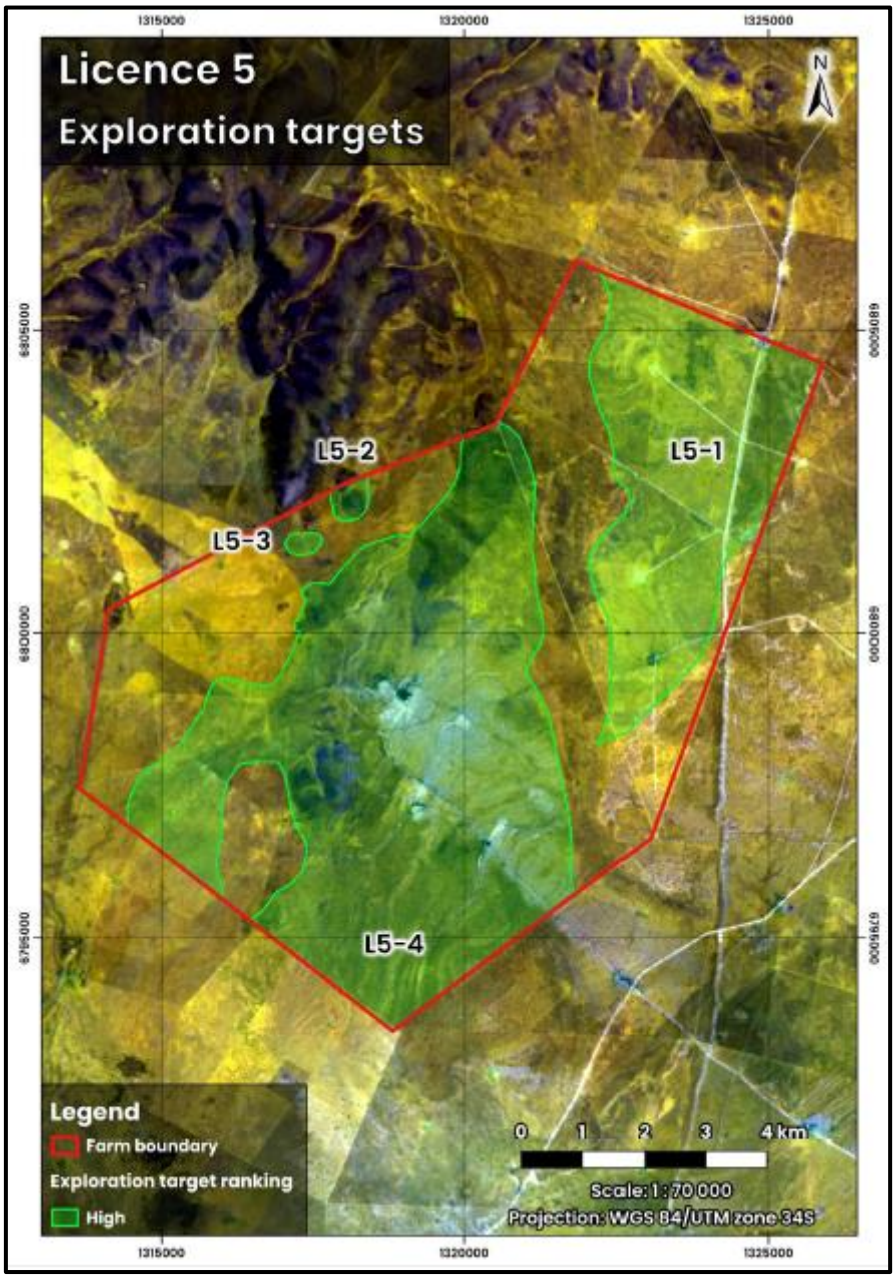


Figure 117: Remote sensing generated target ranking for the farms Hartebeestdale No 564, and Kogelbeen No 44 (image obtained from the Minrom Report)

Figure 118: Remote sensing generated target ranking for the farm Banghoek No 17 (image obtained from the Minrom Report)

The rankings generated suggest that the following farms hold the greatest potential for Pb, Zn and Cu base metal mineralisation.

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Hartebeestdale No 564;
- Kogelbeen No 44; and
- Banghoek No 17

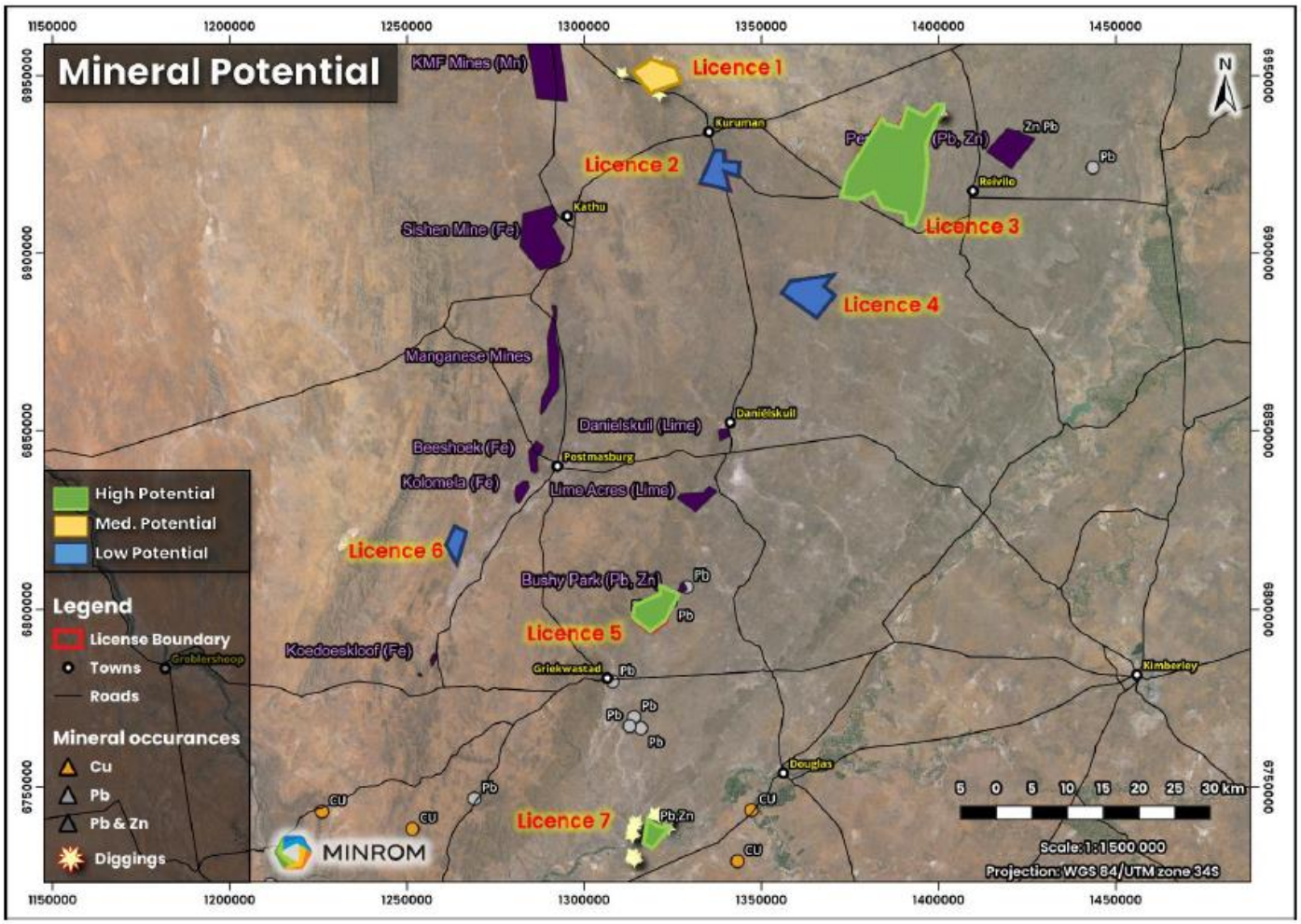


Figure 119: Mineral potential map (image obtained from the Minrom Report)

Exploration Strategy:

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

Phase 1 – Ground Truthing & Mapping:

- Site visits should be performed on the above listed farms to confirm and ground truth the presence of base metal mineralisation. Representative samples should be extracted for XRF Analysis.
- If mineralisation is confirmed, the study area should be geologically mapped in detail to determine the extents of the mineralisation and provide a basis for additional exploration to quantify the mineralisation.

Phase 2 – Drilling (dependant on Phase 1 results)

- If the chemical assay results are promising for the samples collected during Phase 1, a drilling programme (preliminary estimate of 1 500 – 2 000 m) should be planned to investigate the depth extent and grade of the mineralisation along the strike mapped out in Phase 1.
- A geological and block model can be constructed for each of the earmarked properties, and an updated Range Analysis or Resource can be provided, depending on the geological confidence afforded by the drilling budget. This will be packaged into a detailed geological report.

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)(h)(iv)(1)(a) *Type of environment affected by the proposed activity)*. 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 areas as depicted in the following figures.

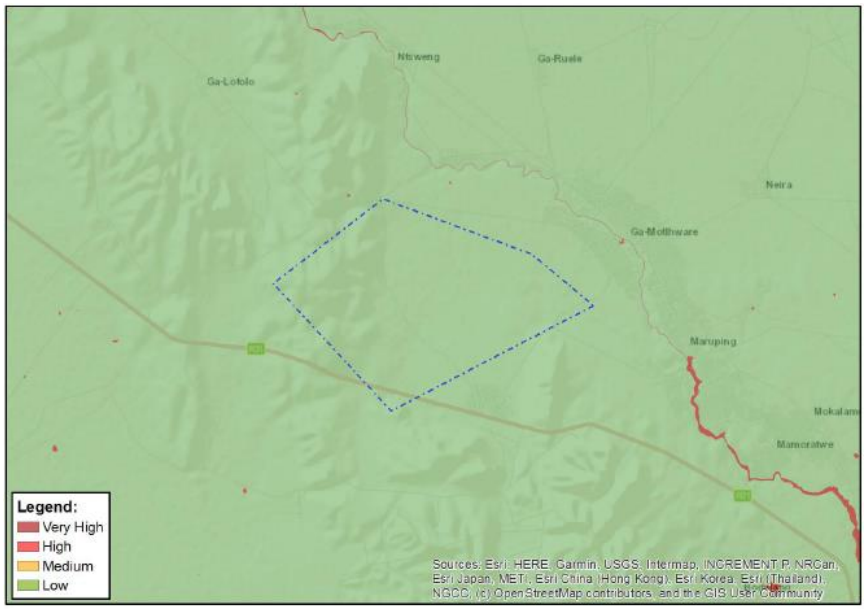


Figure 120: Aquatic biodiversity theme sensitivity of the application area on LKNR No 219.

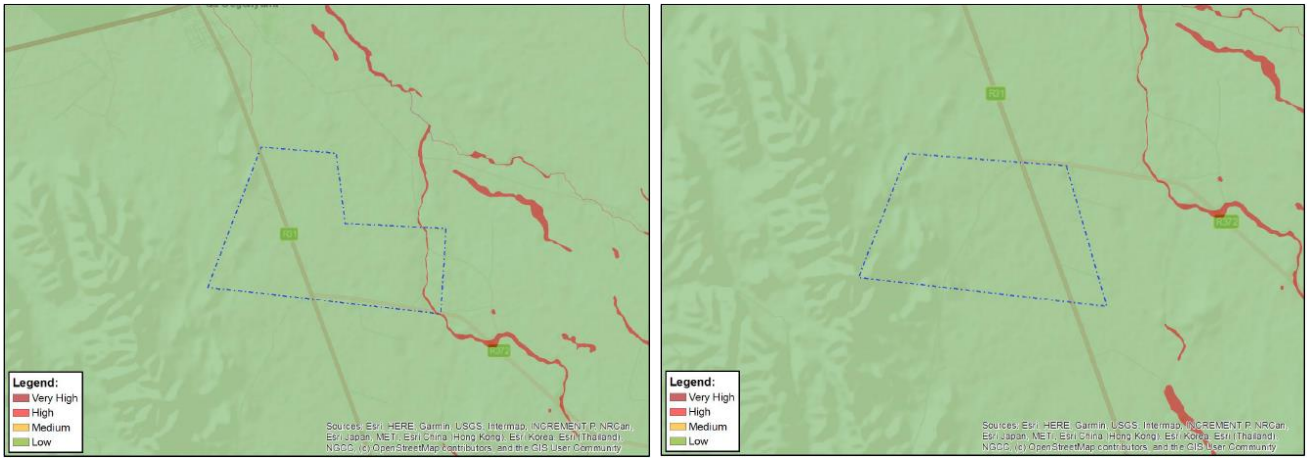


Figure 121: Aquatic biodiversity theme sensitivity of Edgehill No 194 (left pane), and Alphen No 442 (right pane) according to the DFFE screening report.

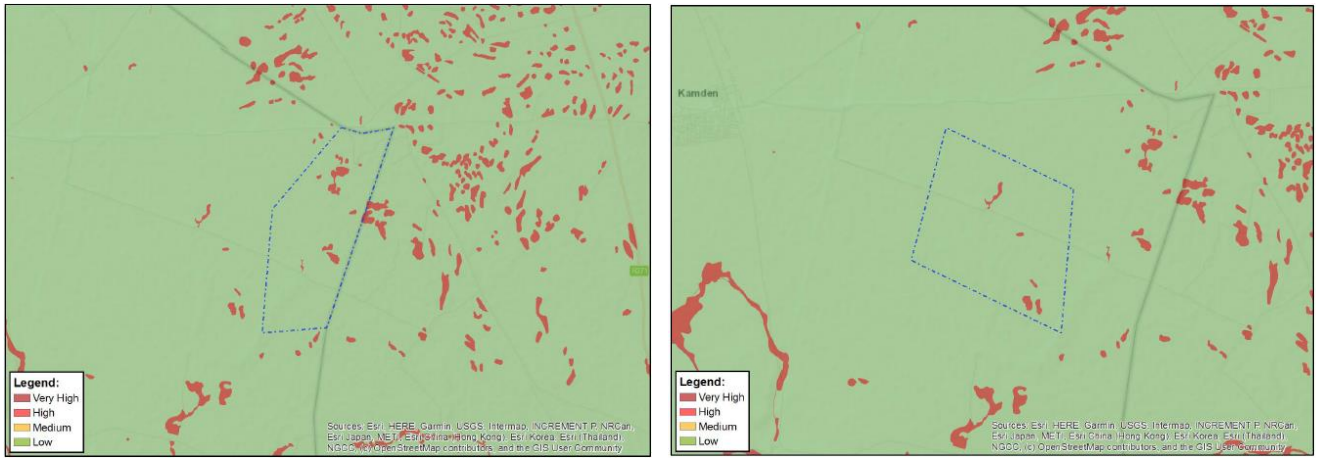


Figure 122: Aquatic biodiversity theme sensitivity of Mahura Muthla No 198 (left pane), and Mora Schuba No 201 (right pane) according to the DFFE screening report.

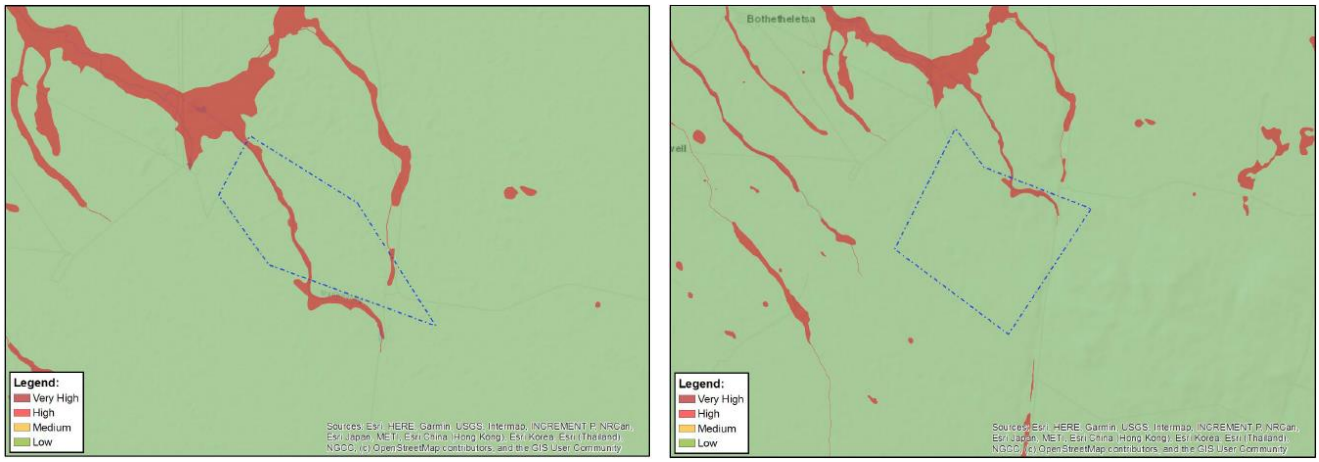


Figure 123: Aquatic biodiversity theme sensitivity of Kungkung No 123 (left pane), and Seduall No 124 (right pane) according to the DFFE screening report.

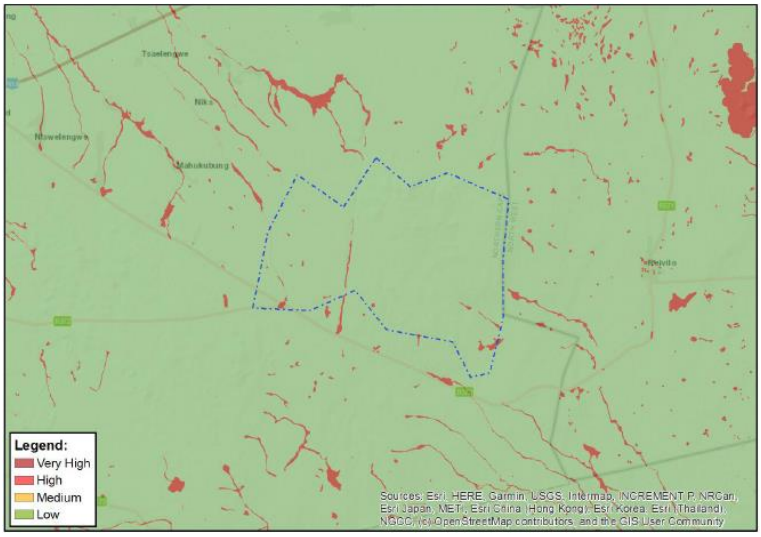


Figure 124: Aquatic biodiversity theme sensitivity of Boland No 133 according to the DFFE screening report.

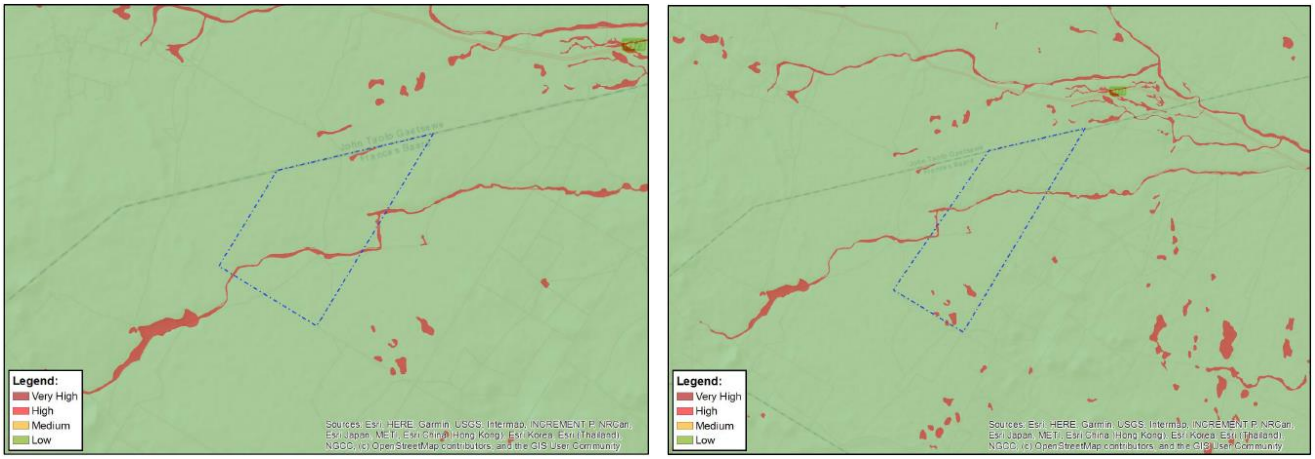


Figure 125: Helvetia No 126 (left pane) and Brandziekfontein No 124 (right pane) according to the DFFE screening report.

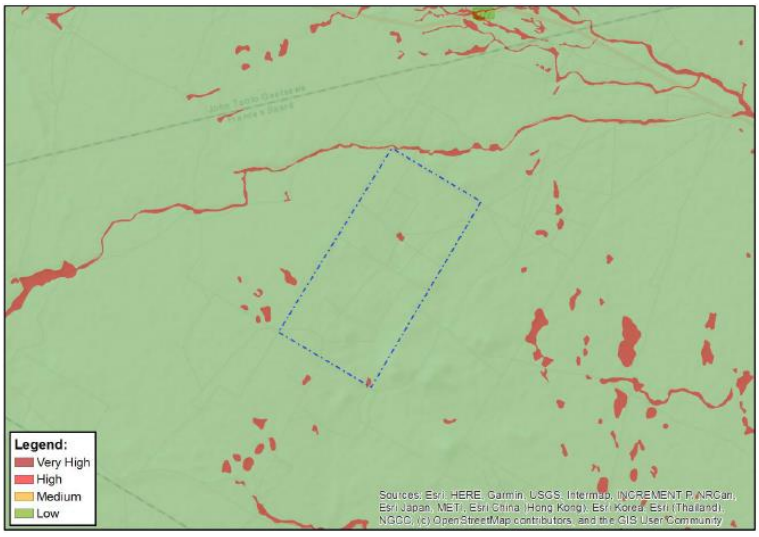


Figure 126: Aquatic biodiversity theme sensitivity of Farm No 123 (Toekoms) according to the DFFE screening report.

The farms Hartebeestdale No 564 and Kogelbeen No 44 are both within the Eastern Kalahari Bushveld Bioregion and therefore according to the DFFE screening report considered of very high sensitivity.

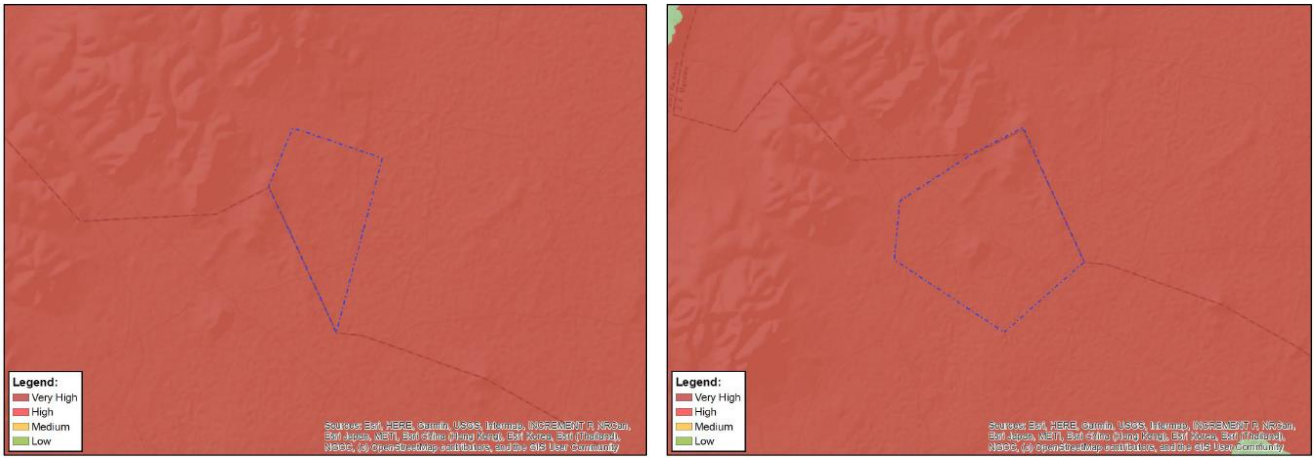


Figure 127: Aquatic biodiversity theme sensitivity of Hartebeestdale No 564 (left pane) and Kogelbeen No 44 (right pane) according to the DFFE screening report.

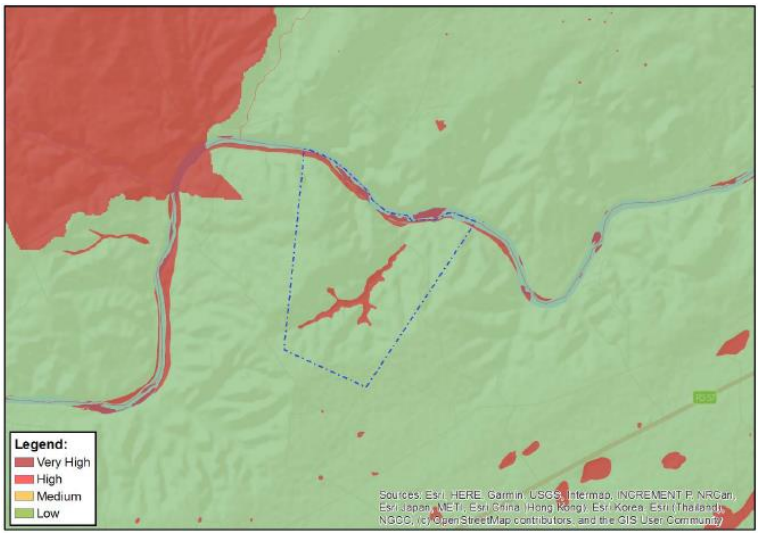


Figure 128: Aquatic biodiversity theme sensitivity of Banghoek No 17 according to the DFFE screening report.

Freshwater Ecosystem Sensitivity Mapping

As part of the initial planning phase, the Applicant aims 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 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 19: Variable buffer widths applied to establish river and stream polygon features (Eco-Pulse, 2024).

River/ stream class	Buffer width[3]	Active channel[4] width
1 – Ephemeral headwater drainage lines and 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 – Large perennial rivers	n/a – active channel digitized individually. This only applied to the Orange River in the study area.	

- 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 freshwater ecosystem sensitivity mapping results as compiled by Eco-Pulse.

LOWER KURUMAN NATIVE RESERVE NO 219 (LKNR)

As mentioned earlier, the earmarked portion does fall within an Upstream River FEPA (and human activities need to be managed to prevent degradation of downstream river FEPAs and Fish Support Areas). Eco-Pulse identified various drainage lines (following image) within the earmarked footprint that carries a high sensitivity rating. The 40 m buffer surrounding the drainage lines received a moderate sensitivity rating.

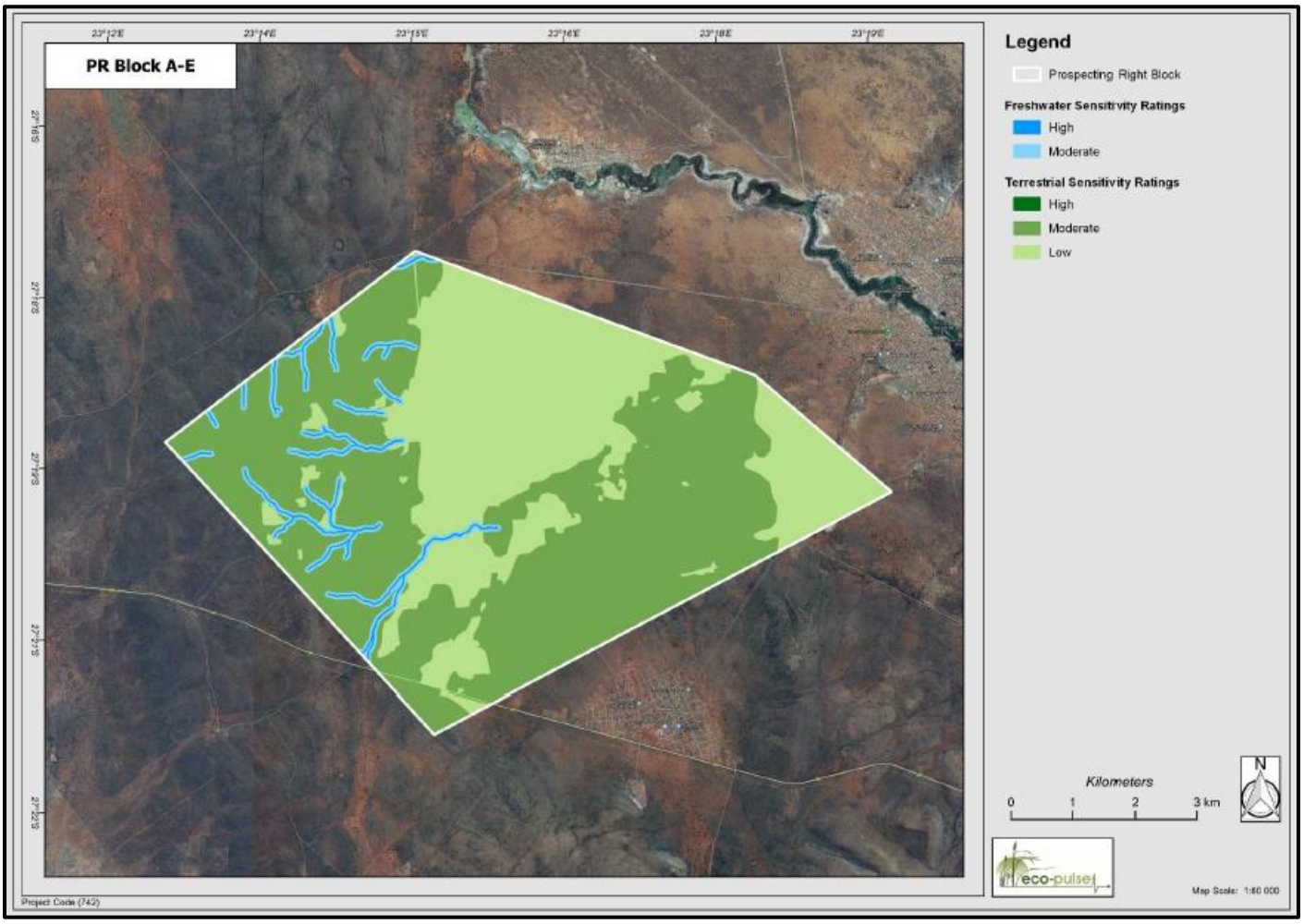


Figure 129: Desktop sensitivity map for the earmarked portion on the farm LKNR No 219 (Eco-Pulse, 2024).

EDGEHILL NO 194 AND ALPHEN NO 442

As mentioned earlier, an unnamed stream passes through Portion 5 and the RE of Edgehill No 194. The BGIS Mapviewer also indicates three wetlands on Portions 1 and 2 of Edgehill No 194. The earmarked farms are within the same Upstream River FEPA mentioned previously. In addition to the above, Eco-Pulse identified a few additional drainage lines on the farm Alphen No 442 (following image).

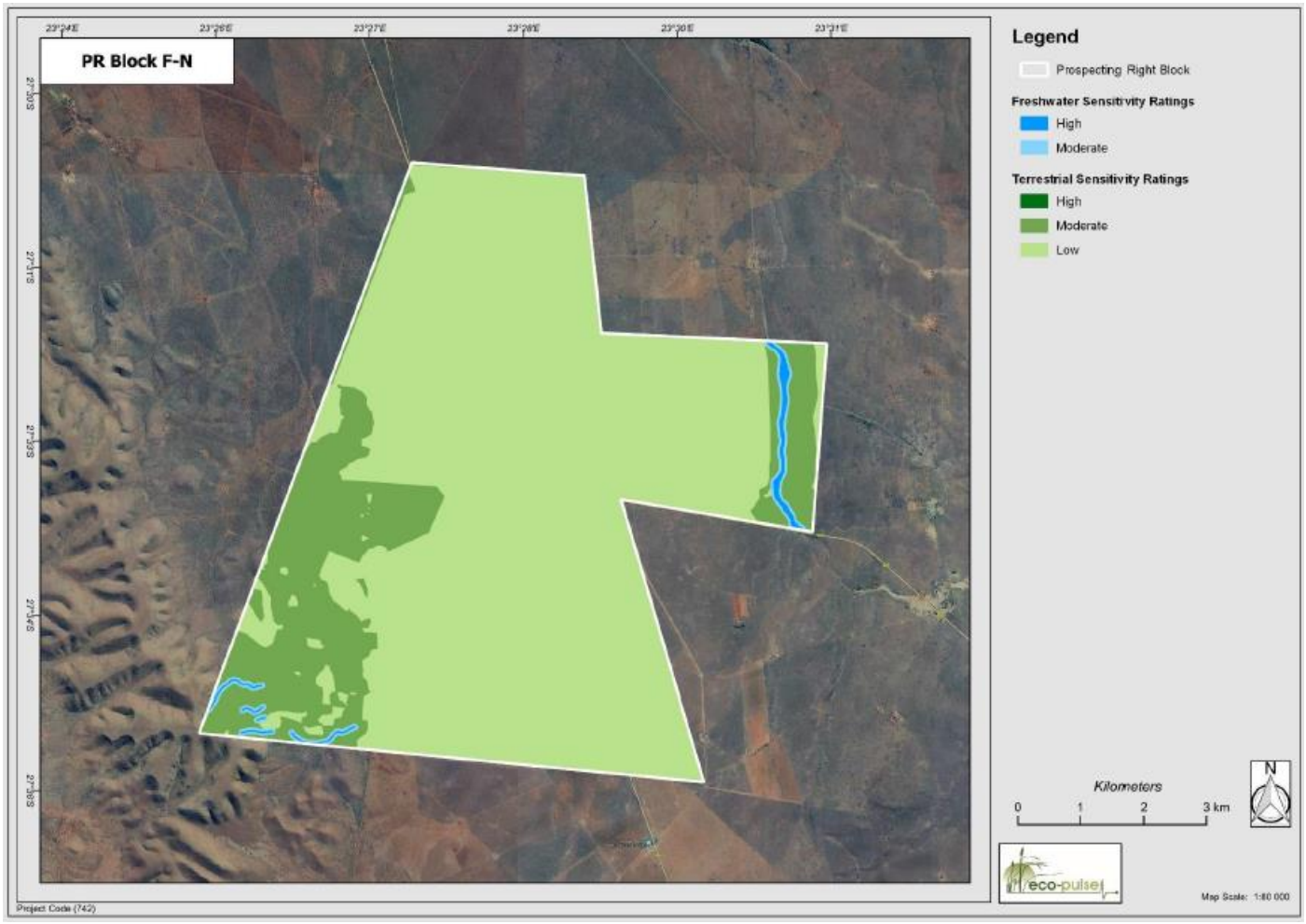


Figure 130: Desktop sensitivity map for the farms Edgehill No 194 and Alphen No 442 (Eco-Pulse, 2024).

MAHURA MUTHLA NO 198 AND MORA SCHUBA NO 201

As mentioned earlier, the SANBI BGIS Mapviewer indicates various wetlands on the farms Mahura Muthla No 198 and Mora Schuba No 201 and both farms are within an Upstream River FEPA. In addition to the above, Eco-Pulse identified various additional drainage lines/wetlands on the farms (following image).

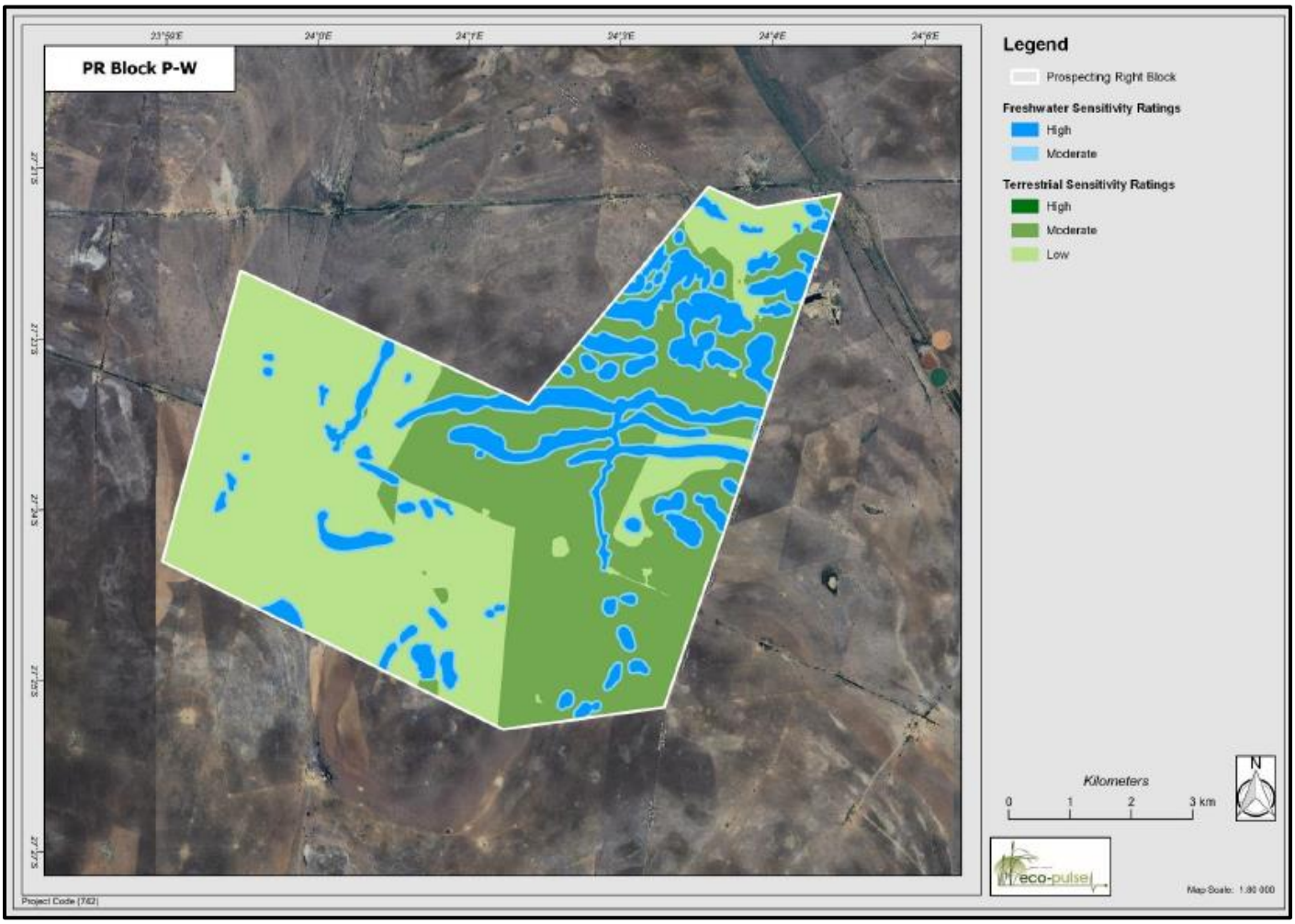


Figure 131: Desktop sensitivity map for the farms Mahura Muthla No 198 and Mora Schuba No 201 (Eco-Pulse, 2024).

KUNGKUNG NO 123, SEDUALL NO 124, AND BOLAND NO 133

Kungkung No 123, Seduall No 124, and a portion of Boland No 133 are within the Molopo SWMA that is also classified as an Upstream River FEPA. The eastern part of Boland No 133 is within the Harts SWMA. The mapviewer indicates various wetlands within the earmarked area with the Matlhwaring River crossing into Kungkung No 123 as well as Portions 1, 2 of Seduall No 124. An unnamed stream crosses through the south-western corner of Boland No 133. This was confirmed by Eco-Pulse (following image).

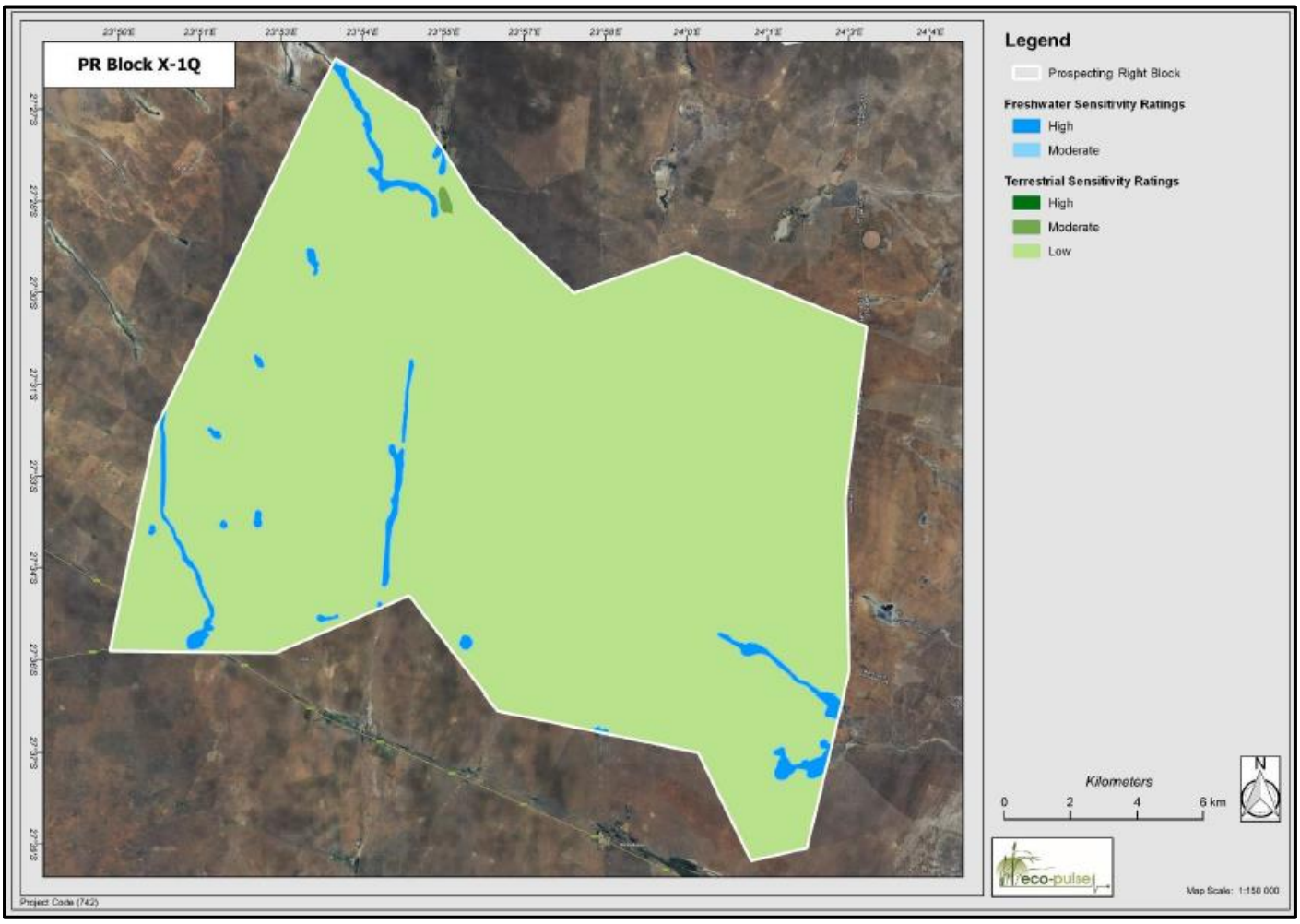


Figure 132: Desktop sensitivity map for the farms Kungkung No 123, Seduall No 124 and Boland No 133 (Eco-Pulse, 2024).

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124, AND FARM NO 123 (TOEKOMS)

As mentioned earlier, Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) are within the Harts SWMA. An unnamed tributary passes through the farms Helvetia No 126 and Brandziekfontein No 124. Various wetlands are indicated on the study area, and the south-eastern corner of Farm No 123 (Toekoms) extends into an Upstream River FEPA. This was confirmed by Eco-Pulse and additional wetlands/watercourses were identified as shown in the following image.

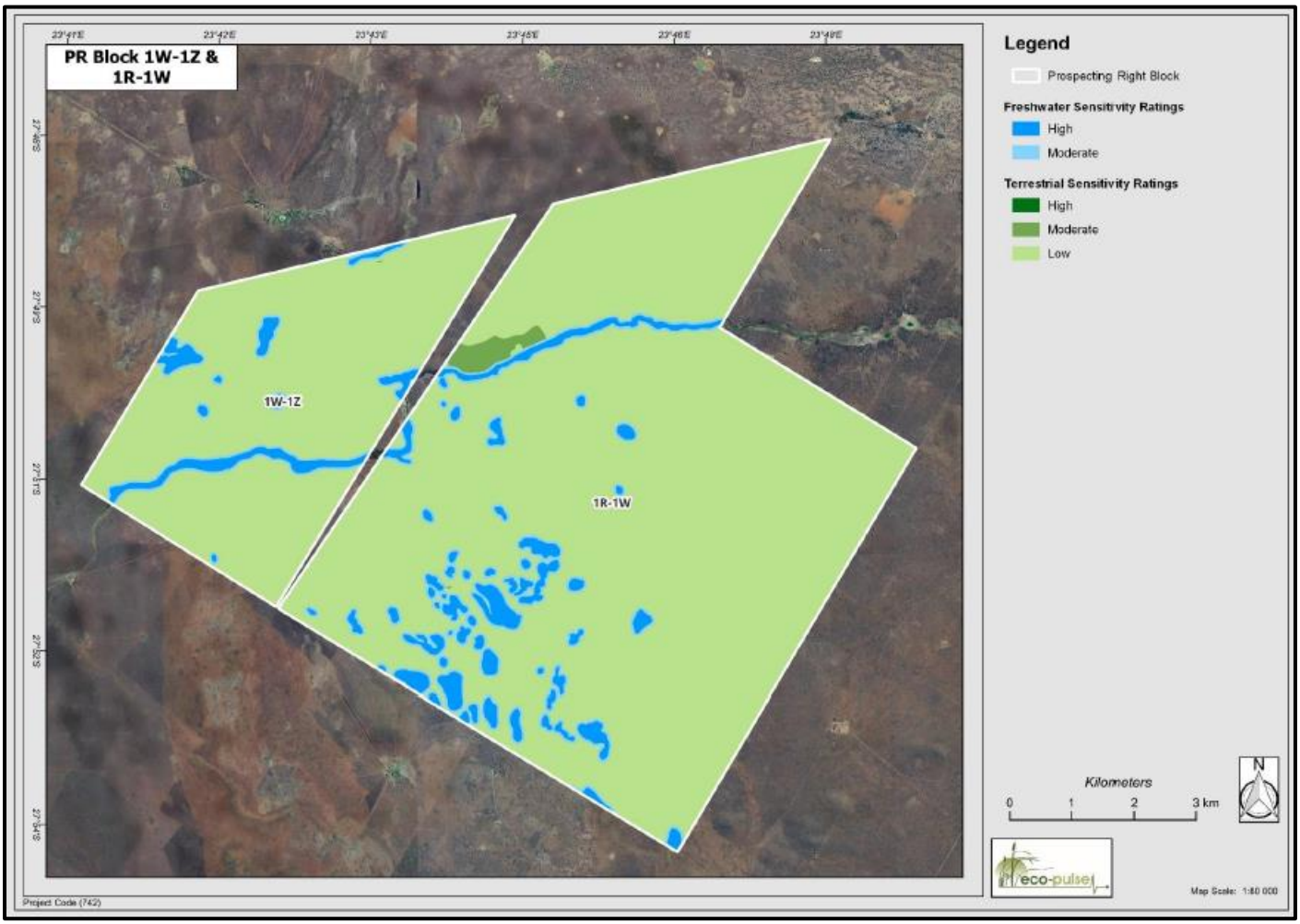


Figure 133: Desktop sensitivity map for the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) (Eco-Pulse, 2024).

HARTEBEESTDALE NO 564 AND KOGELBEEN NO 44

As mentioned earlier, Hartebeestdale No 564 and Kogelbeen No 44 are within the Orange SWMA. The entire footprint is within a river FEPA (indicating that it should remain in a good condition to contribute to national biodiversity goals and support sustainable use of water resources). An unnamed stream crosses into the study area to the east. Eco-Pulse identified various watercourses on especially the farm Kogelbeen No 44 as shown in the following image.

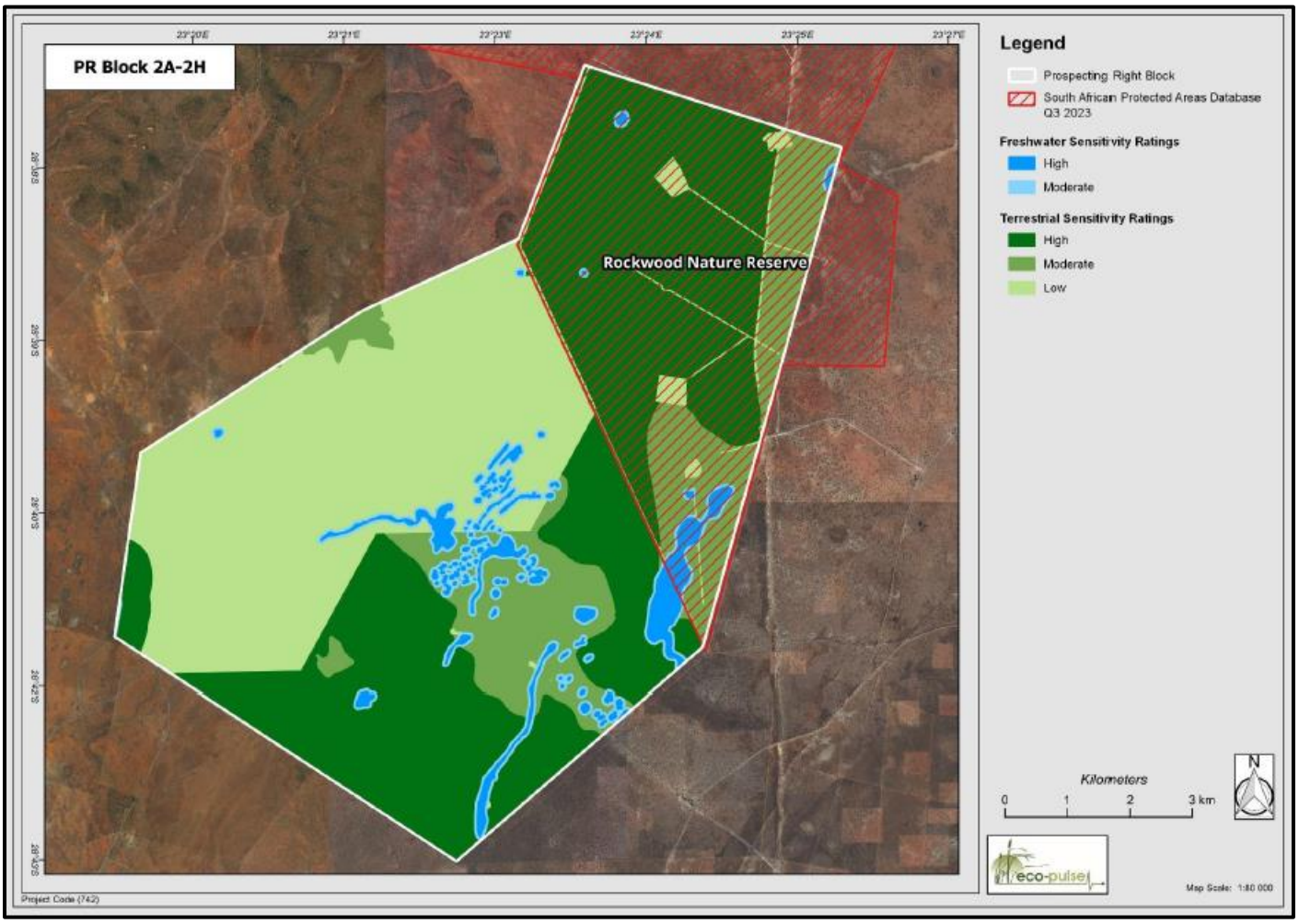


Figure 134: Desktop sensitivity map for the farms Hartebeestdale No 564 and Kogelbeen No 44 (Eco-Pulse, 2024).

BANGHOEK NO 17

As mentioned earlier, Banghoek No 17 borders the Orange River to the north. The farm is within the Orange SWMA and the area is classified as an FSA (that include sub-quaternary catchments that are important for migration of threatened or near threatened fish species) and sub-quaternary catchment of a fish sanctuary. Eco-Pulse identified numerous drainage lines on this farm (following image).

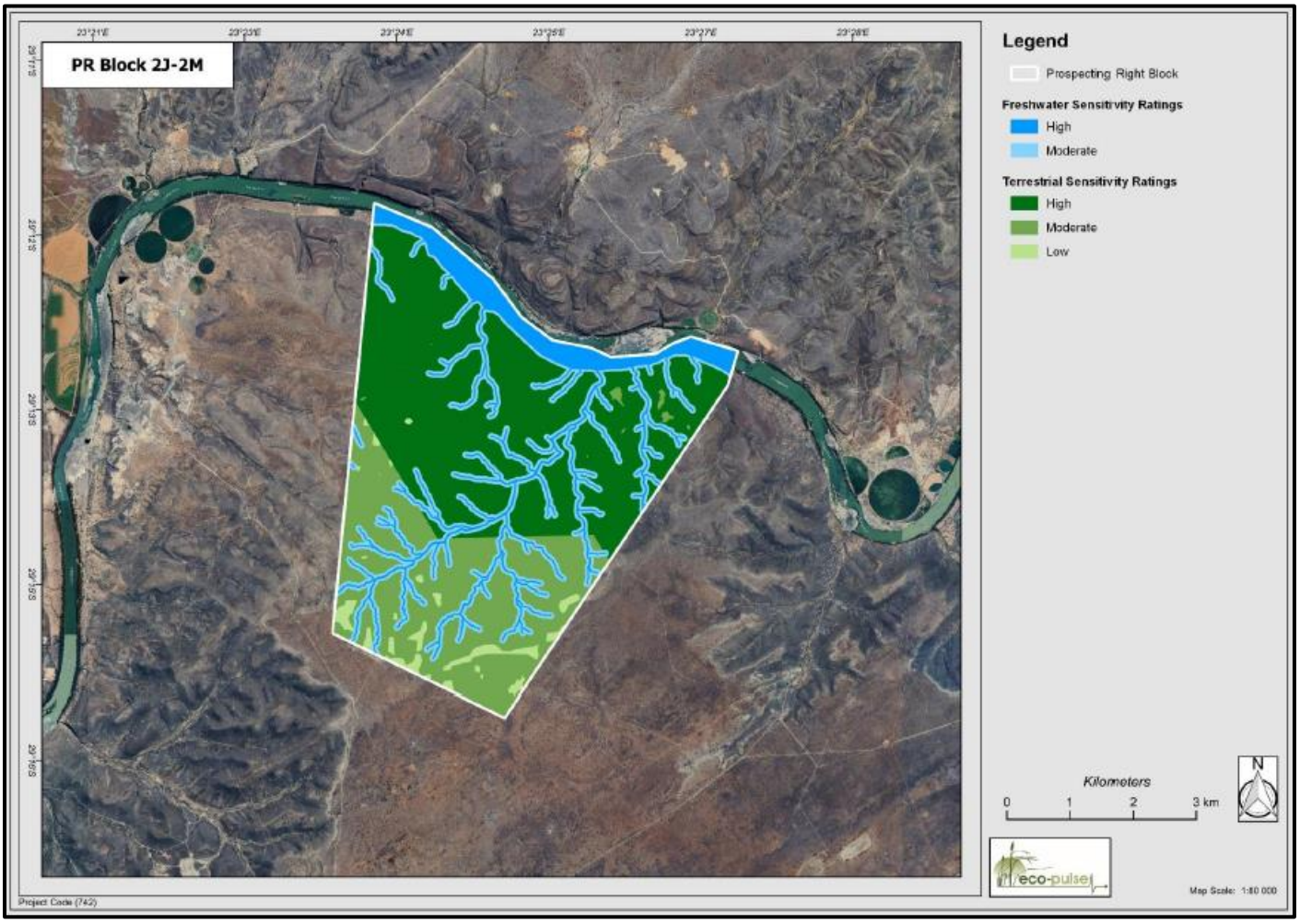


Figure 135: Desktop sensitivity map for the farm Banghoek No 17 (Eco-Pulse, 2024).

Planning Recommendations for Freshwater Ecosystems

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 recommended that freshwater ecosystems should be avoided irrespective of their sensitivity and ecosystem threat status. As such, all freshwater ecosystem boundaries should be considered highly sensitivity and avoided.

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. It is imperative to avoid sensitive areas, particularly those classified as 'High' sensitivity, to protect the environment and minimize project risks.

SITE SPECIFIC GROUNDCOVER, FAUNA, AND BIODIVERSITY CONSERVATION

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 20: 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.

LOWER KURUMAN NATIVE RESERVE NO 219 (LKNR)

As mentioned earlier, the earmarked portion extends into an ESA. The Kuruman Mountain Bushveld (SVk10) and Kuruman Thornveld (SVk9) are prevalent in the earmarked area. Both are Least Threatened. The animal species theme sensitivity rating of the earmarked area ranges between Low and Medium.

As presented in Figure 129, Eco-Pulse identified terrestrial areas of Moderate – Low sensitivity within the earmarked footprint of LKNR No 219.

EDGEHILL NO 194 AND ALPHEN NO 442

As mentioned earlier, parts of both farms extend into an ESA. The Kuruman Mountain Bushveld (SVk10) and Kuruman Thornveld (SVk9) are prevalent on the farms. The eastern section of Edgehill No 194 also extends into the Kuruman Vaalbosveld (SVk8). All are Least Threatened. The animal species theme sensitivity rating of the farms is mainly Low.

As presented in Figure 130, Eco-Pulse identified a few terrestrial areas of Moderate sensitivity mainly along the eastern and western boundaries of the farms.

MAHURA MUTHLA NO 198 AND MORA SCHUBA NO 201

As mentioned earlier, parts of both farms extend into an ESA. The prevalent vegetation type on the farms is the Kuruman Vaalbosveld (SVk8). The animal species theme sensitivity rating of the farms is Low.

As presented in Figure 131, Eco-Pulse identified terrestrial areas of Moderate – Low sensitivity within the farms that mainly correspond with the freshwater sensitive areas.

KUNGKUNG NO 123, SEDUALL NO 124 AND BOLAND NO 133

As mentioned earlier, the ESA associated with the farms Kungkung No 123 and Seduall No 124 follows the route of the watercourses crossing into it. Only a small portion, that corresponds with the unnamed stream passing through Boland No 133 to the west is classified as ESA. The rest of the farm is deemed to be of low sensitivity. The Kuruman Vaalbosveld (SVk8) and the Ghaap Plateau Vaalbosveld (SVk7) are the prevalent vegetation types of the area. All are Least Threatened. The animal species theme sensitivity rating of the farms is Low.

As presented in Figure 132, the Eco-Pulse sensitivity map shows most of the study area as Low.

HELVETIA NO 126, BRANDZIEKFONTEIN NO 124, AND FARM NO 123 (TOEKOMS)

As mentioned earlier, the ESA associated with the farms Helvetia No 126, Brandziekfontein No 124, and Farm No 123 (Toekoms) follows the route of the watercourse crossing into it. The Kuruman Vaalbosveld (SVk8) and the Ghaap Plateau Vaalbosveld (SVk7) are the prevalent vegetation types of the area. All are Least

Threatened. The upper part of Helvetia No 126 has a high animal species theme sensitivity that also extends into the western boundary of Brandziekfontein No 124.

As presented in Figure 133, the Eco-Pulse sensitivity map shows most of the study area as Low. According to Eco-Pulse the POC of the Burchell's Courser (*Cursorius rufus*) is Medium: Possible.

HARTEBEESTDALE NO 564 AND KOGELBEEN NO 44

As mentioned earlier, Hartebeestdale No 564 and Kogelbeen No 44 lay within a NPAES, CBA, ESA, and the Rockwood Nature Reserve was declared over Hartebeestdale No 564. The Olifantshoek Plains Thornveld (SVk13) as well as the Ghaap Plateau Vaalbosveld (SVk7) are the dominant vegetation types on these farms. All are Least Threatened. The animal species theme sensitivity rating of the farms is mostly Low with a few occurrences marked as Medium.

Hartebeestdale No 564 also forms part of the Siyanda District Municipality Environmental Management Framework (EMF). According to the EMF the farm extends across areas with an environmental sensitivity index rating of 0 (pink colour in following image) and 2 (light green) respectively. 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.

The farm is also within EMF environmental control zones 1 and 4, where 1 refers to potential sensitive groundwater resources and 4 indicates potential sensitive groundwater resources and potential wind erosion areas. The EMF proposes the following management parameters for the zone:

Zone 1:

- Mining and quarry are some of the land uses and activities that may be considered in this zone after an appropriate level of impact assessment has been conducted. The EMF does not mention prospecting, but it is assumed that prospecting is also listed under these parameters.

Zone 4 (summarised from the EMF):

- Mining and quarry are some of the land uses and activities that may be considered in this zone after an appropriate level of impact assessment has been conducted. The EMF does not mention prospecting, but it is assumed that prospecting is also listed under these parameters.
- The creation of unnecessary bare earth areas should be avoided at all costs.
- New roads and tracks should be kept to the minimum necessary.
- Exposed bare areas should be paved or be rehabilitated with vegetation cover whenever feasible.

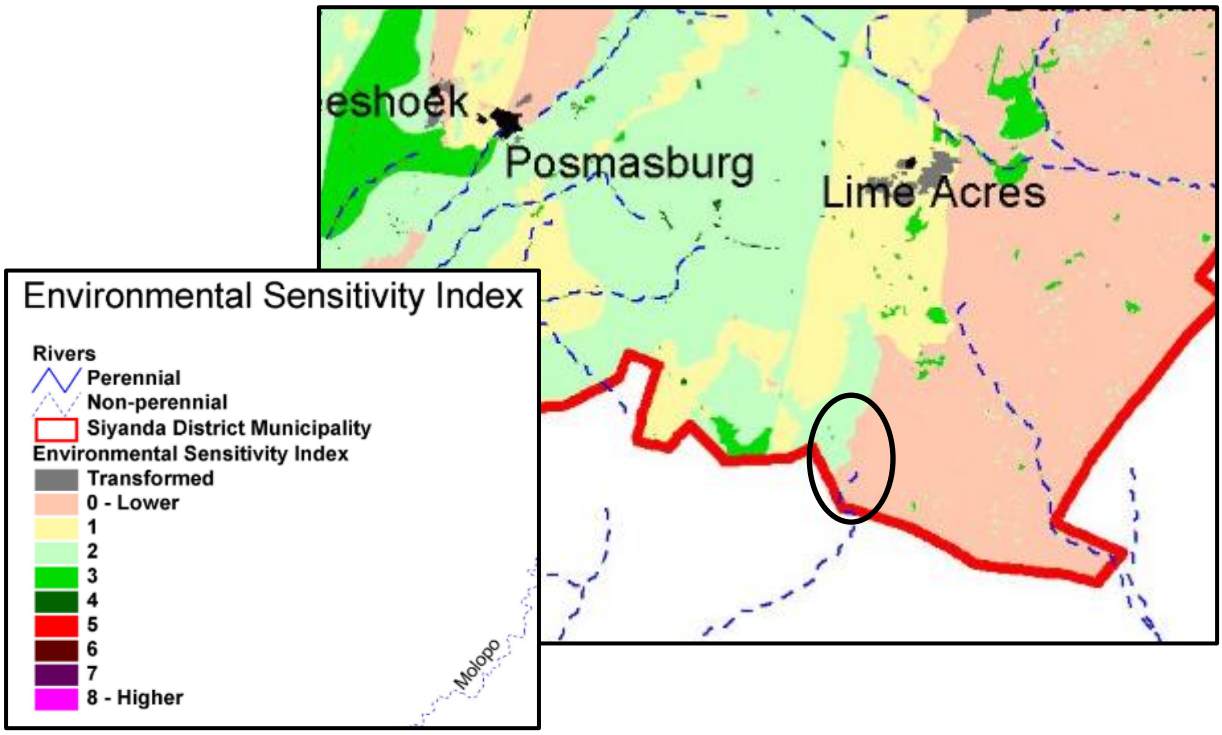


Figure 136: Environmental sensitivity index according to the Siyanda District Municipality EMF (2008) where the black circle indicates the farm location.

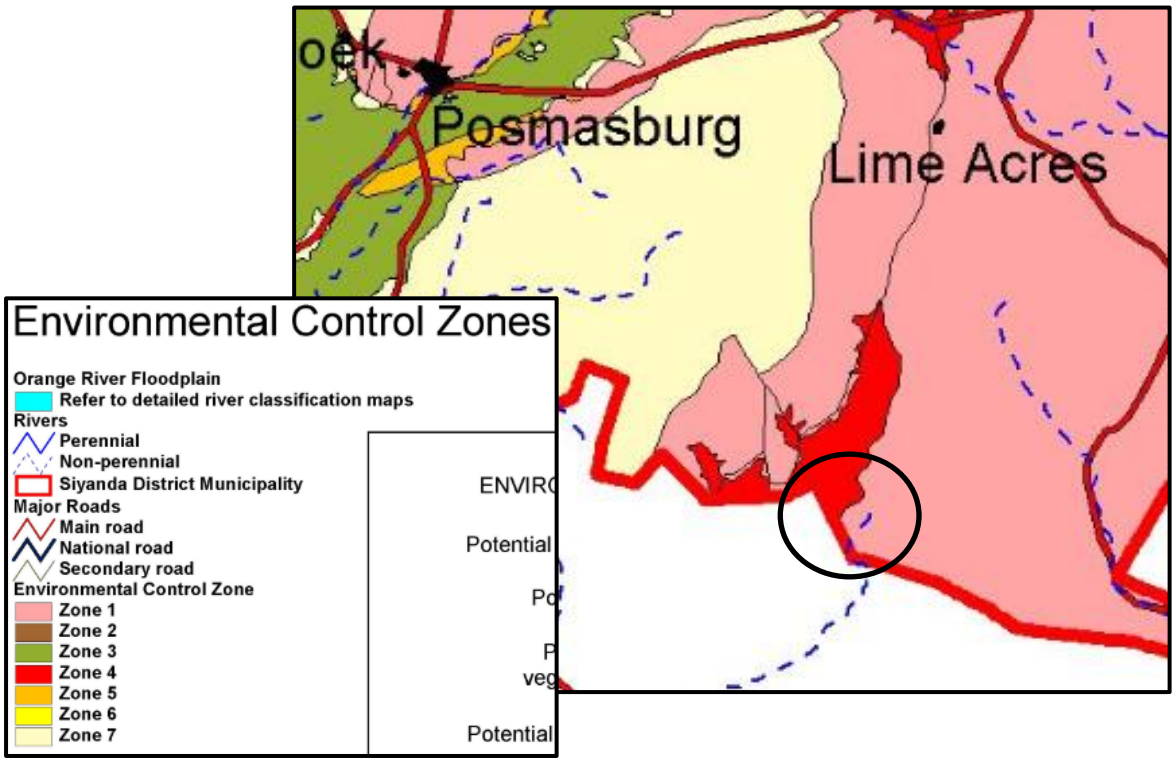


Figure 137: Environmental control zones according to the Siyanda District Municipality EMF (2008) where the black circle indicates the farm location.

In terms of section 48(1) of the NEM:PAA, 2004: *"Despite other legislation, no person may conduct commercial prospecting or mining activities a) in a special nature reserve or nature reserve; b) in a protected environment without the written permission of the Minster and the Cabinet member responsible for minerals and energy affairs; or c) in a protected area referred to in section 9(b) or (d)*". Section 48(4) continues that *"When applying this section, the Minister must take into account the interests of local communities and the environmental principles referred to in section 2 of the NEMA, 1998.*" Government Notice 125 of 30 June 2023 brought Section 40 of the National Environmental Management Laws Amendment Act, 2022 (Act No 2 of 2022) (NEM:LAA) into effect. This section amends Section 48 of NEM:PAA, which now requires the written permission of only the Minister (Forestry, Fisheries, and the Environment) to prospect in a protected environment.

Considering the above, the Applicant will need to apply for permission to prospecting in the Rockwood Nature Reserve immediately on receipt of an environmental authorisation (EA) in terms of NEMA, to the Minister (DFFE) together with all information, reports, studies conducted, or consultation done for the EIA process in respect of the activities under consideration in terms of Chapter 5 of the NEMA; and any appeal lodged in respect of the EA.

The Kogelbeen Cave (Kogelbeen No 44/1) has a diverse fauna with over 39 species living within the cave.

As presented in Figure 134, Eco-Pulse identified areas of High, Moderate and Low sensitivity on the earmarked farms. According to Eco-Pulse the POC of the Caspian Tern (*Hydropogne caspia*) is Medium: Possible, while it is Highly Probable that the Ludwig's Bustard (*Neotis ludwigii*) may occur in the area.

BANGHOEK NO 17

As mentioned earlier, Banghoek No 17 falls entirely within a CBA and ESA. The Upper Gariep Alluvial Vegetation (AZa4) and the Northern Upper Karoo (NKu3) are the prevalent vegetation types of the area. NKu3 is classified as Least Threatened while AZa4 is Vulnerable. The animal species theme sensitivity rating of Banghoek No 17 is Medium.

As presented in Figure 135, the Eco-Pulse sensitivity map shows most of the study area range between High and Moderate.

Planning Recommendations for Terrestrial Ecosystems

Terrestrial ecosystems were categorized into sensitivity classes and Eco-Pulse consequently recommends that areas categorized as 'High' and '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 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 at selected prospecting sites. This fieldwork will help refine ecological sensitivity assessments and provide essential data for phase two of the assessment process.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT

(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Application on 66 107 ha in the Northern Cape Province, 2024 – Appendix F)

Beyond Heritage was appointed to conduct 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 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. Low density scatters relating to the ESA, MSA, and MSA can also be expected in flat plains. The northern farms which will be prospected are situated closer to Kuruman, Kathu Townlands, and the Kathu Complex and significant sites could be more prominent and expected within these farms. Known sites include Grade IIIC Stone Age scatters recorded around topographical focal points, only on the Lower Kuruman Native Reserve 219 (following figures).

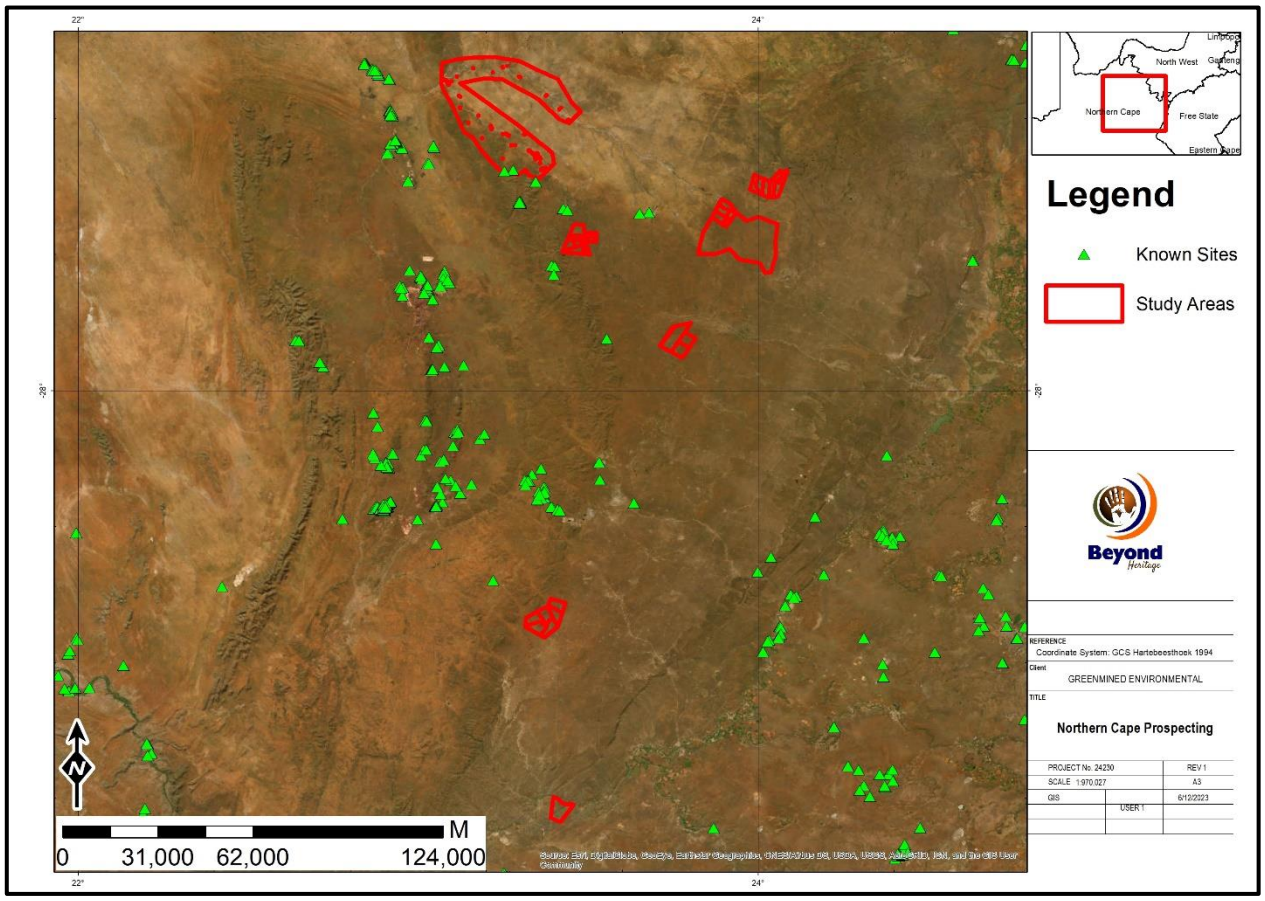


Figure 138: Known site distribution in relation to the study area (Beyond Heritage).

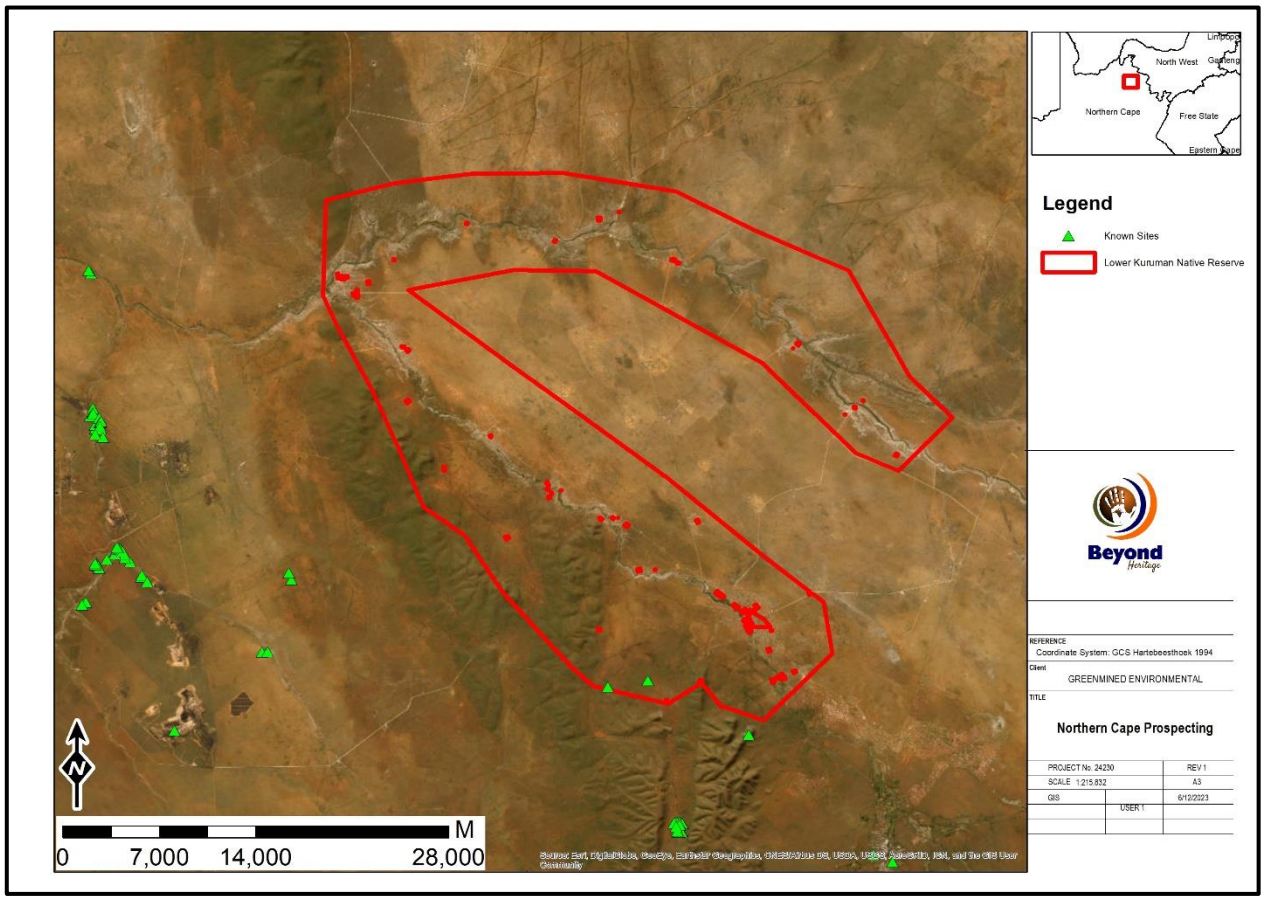


Figure 139: Stone age scatters recorded in relation to the LKNR No 219 (Beyond Heritage).

Burial sites can occur anywhere on the landscape. A memorial site occurs at 27˚33'32.4"S; 23˚29'39.3"E on Edgehill 194/5.

Figure 140: Memorial site at Edgehill 194/5.

Figure 141: Satellite view of the important archaeological sites (green pins) noted in the HIA in relation to the northern part of the application area (red polygons). (Image generated on Google Earth).

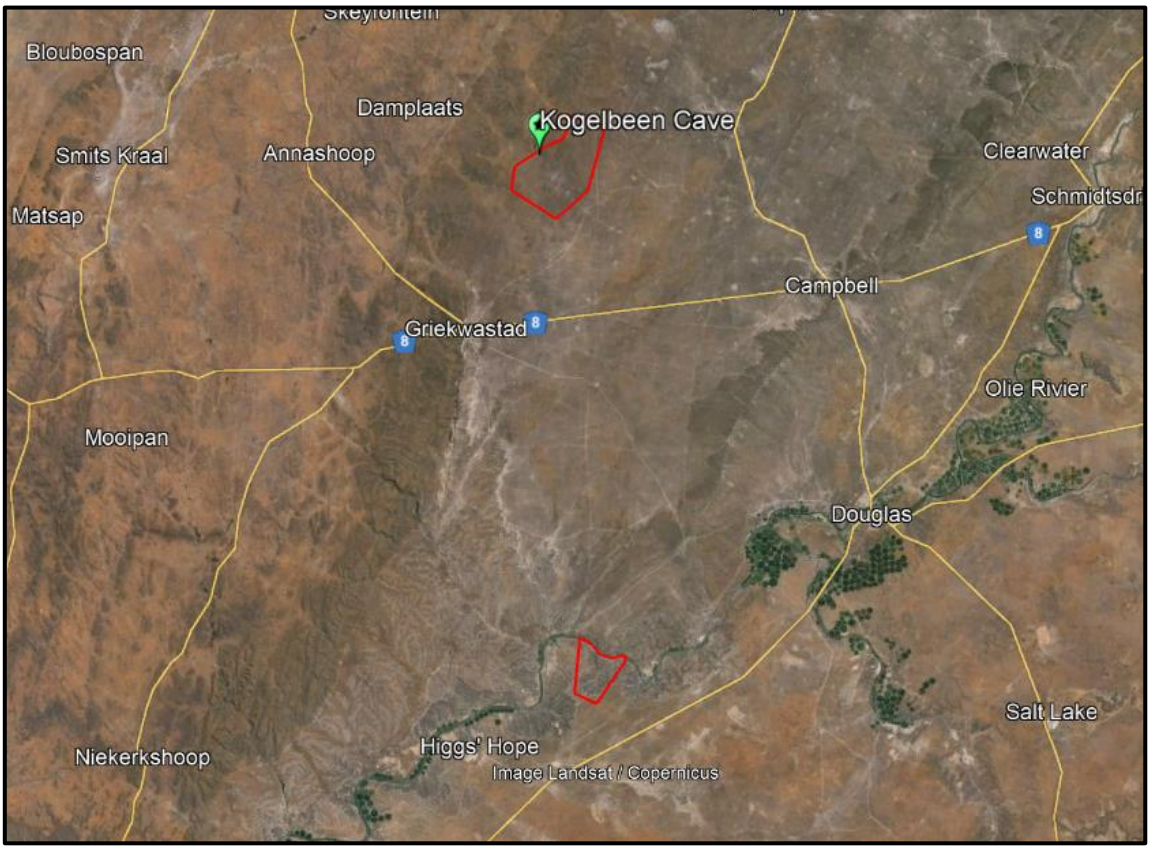


Figure 142: Satellite view of the Kogelbeen Cave in relation to the southern part of the application area (red polygons). (Image generated on Google Earth).

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 rich in minerals, and mining is a great driving force of the local economy. 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.

Conclusion

Due to the geographical size of the prospecting application and the fact that no intrusive activities will occur at this point of the application, the heritage specialists did not deem it 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, 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 an

overview of potential heritage resources that could be affected in the area by the proposed prospecting activity.

National Heritage sites of Kathu Townlands and Wonderwerk Cave in the Kuruman Hills are situated near farms which will undergo prospecting and the Kogelbeen Caves are in the study area (see Figure 142). The Kathu Complex comprised of 11 Stone Age sites of great significance are also situated in the landscape (Beaumont 1990). 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 considerable 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.

According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study areas are of varying sensitivities of low, moderate, high, and very high palaeontological sensitivity an independent study was commissioned for this aspect (Bamford 2024).

No intrusive activities will occur at this point of the application and the potential impact on heritage resources is expected to be very low.

The impact to heritage resources is expected to be low provided that the recommendations (refer to *Part A(1)(h)(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.

SITE SPECIFIC 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:

- Cell phone and/or Radio Masts;
- Family graveyards;
- Fencing;
- Housing and supporting structures;
- Power and telephone lines;
- Pipeline servitude;
- Roads (public as well as private);
- Stock pens;
- Water abstraction and storage infrastructure.

The application area on the farm LKNR No 219 extends across the Ga-Sebolao Village as well as small holdings/allotted land to the east.

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 negatively impact or necessitate the removal of any existing infrastructure.

(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 – B5.

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 4 & 6): 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			**Final Project Proposal**		**Degree of Mitigation: Partial**		
1	3	1	1.6	1	4	2.5	**4**

Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Medium-High			**Final Project Proposal**		**Degree of Mitigation: Full**		
4	4	5	4.3	3	5	4	**17.2**

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

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

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

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Low-Medium			**Final Project Proposal**		**Degree of Mitigation: N/A**		
1	4	4	3	4	2	3	**9**

INVASIVE PROSPECTING (PHASE 4 & 6): OPERATIONAL PHASE

Temporary loss of some agricultural land earmarked for invasive prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Medium			**Final Project Proposal**		**Degree of Mitigation: Partial**		
1	4	1	2	5	5	5	**10**

Visual intrusion because of invasive prospecting.

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

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

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

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

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

Increase in sediment inputs and turbidity due to invasive prospecting.

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

Increase in toxic heavy metal contaminants.

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

Dust nuisance because of invasive prospecting.

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

Noise nuisance because of invasive prospecting.

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

Potential impact on sensitive/protected flora within the footprint area.

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

Potential impact on fauna within the footprint area.

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

Infestation of the prospecting areas with invader plant species.

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

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

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

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

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

Erosion of denuded areas.

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

Deterioration of access roads due to prospecting activities.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	4	2	2.6	4	3	3.5	**9**

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

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

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

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

Increased fire risk during operational phase.

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

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

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

INVASIVE PROSPECTING (PHASE 4 & 6): DECOMMISSIONING (MEDIUM- & LONG TERM)

Safety risk due to uncapped boreholes.

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

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

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

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

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

Infestation of the reinstated areas with invader plant species.

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

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

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

CUMULATIVE IMPACTS

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

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

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

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

Fragmentation of ecosystems affecting safe movement of faunal species.

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

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

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

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

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

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 recognised from the various interpretations:

- Environmental significance is a value judgement.
- 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 particular consequences being realised (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 organisation 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:

Environmental Significance = Overall Consequence X 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 the purpose of 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 table below will be used to obtain an overall rating for severity, taking into consideration the various criteria.

Table 21: 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 22: 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 23: 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 24: Example of calculating overall consequence.

Consequence	Rating
Severity	Example 4
Duration	Example 2
Extent	Example 4
SUBTOTAL	**10**
TOTAL CONSEQUENCE: (Subtotal divided by 3)	**3.3**

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 25: 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 26: 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 summarised below, and then dividing the sum by 2.

Table 27: Example of calculating overall likelihood.

Consequence	Rating
Frequency	Example 4
Probability	Example 2
SUBTOTAL	**6**
TOTAL LIKELIHOOD (Subtotal divided by 2)	**3**

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 28: 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 prioritisations and decision making process associated with this event, aspect, or impact.

Table 29: 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	Implement monitoring. Investigate mitigation measures and improve	Improve management measures to reduce risk.	Implement significant mitigation measures or implement alternatives.

Significance	Low	Low-Medium	Medium	Medium-High	High
		determine potential increase in risk. Where possible improve	management measures to reduce risk, where possible.		

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 fairly 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 of 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 a number of 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 lithium, lead, copper, zinc, and sulphide sources within the earmarked areas.
- Work opportunities for 15 - 20 community members including associated growth development opportunities.
- Compensation of landowners during operational phase.
- Invasive prospecting does not require bulk sampling.
- 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 30: List of potential negative impacts associated with the present project proposal.

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
➢ Site establishment. ➢ Operational phase.	➢ Temporary loss of agricultural land earmarked for site camp establishment. ➢ Temporary loss of some agricultural land earmarked for invasive prospecting.	➢ Low-Medium ➢ Medium	➢ Low-Medium ➢ Low-Medium
➢ Site establishment. ➢ Operational phase.	➢ Visual intrusion because of site camp. ➢ Visual intrusion because of invasive prospecting.	➢ Low ➢ Medium	➢ Low ➢ Low
➢ Site Establishment.	➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	➢ Medium-High	➢ Medium-High
➢ Operational phase. ➢ Cumulative impacts.	➢ Potential negative impact on the identified CBA and/or ESA areas.	➢ Medium-High ➢ Medium	➢ Low ➢ Low-Medium

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
	➢ Potential impact on sensitive/protected flora within the footprint area. ➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.	➢ Medium-High ➢ Medium	➢ Low ➢ Low
➢ 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.	➢ Medium-High ➢ Medium ➢ Low-Medium	➢ Low ➢ Low ➢ Low
➢ Operational phase.	➢ Dust nuisance because of invasive prospecting.	➢ Medium	➢ Low
➢ Operational phase	➢ Noise nuisance because of invasive prospecting.	➢ Medium	➢ Low
➢ Operational phase. ➢ Cumulative impacts.	➢ Potential impact on fauna within the footprint area. ➢ Fragmentation of ecosystems afecting 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.	➢ Low	➢ Low

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
➢ 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.	➢ Low-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.	➢ 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 mitigation 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 impact of the prospecting activity on the receiving/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 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.
- 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 low should the following mitigation measures be implemented:

- Once the invasive prospecting programme is available additional fieldwork must be done by a qualified hydrologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from impacting watercourses/pans/wetlands.
- The findings of the hydrologist, with the drill plan, 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.
- Should a water use authorisation be applicable to the project, the Applicant must always adhere to the conditions thereof.
- Upon closure, the Applicant must remove all prospecting related equipment/machinery from the footprint.

Erosion Mitigation / Storm Water Control:

- An aquatic impact buffer of 40 m must be maintained around all watercourses.
- 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.

GROUNDCOVER, FAUNA, AND BIODIVERSITY CONSERVATION

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 should the following mitigation measures be implemented:

- No prospecting may take place on the farm Hartebeestdale No 564 without the Minister of DFFE's approval.
- 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 drill plan, 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.

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:

- An invasive plant species management plan 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 that germinate on 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 area 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.

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 drill 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.
- Drill 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 (Kogelbeen Cave), 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.
- 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:

- Storm water 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.
- 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.

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 even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped 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.

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)(h) *Full description of the process followed to reach the proposed preferred site* above, and Part A(1)(l)(i) *Summary of the key findings of the environmental impact assessment*.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.
-(Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures)

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 prospecting activity may have on the surrounding environment.

The significance rating was again determined for each impact 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.

INVASIVE PROSPECTING (PHASE 4 & 6): 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	3	1	1.6	4	5	4.5	**7.2**

Visual intrusion because of site camp

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: No mitigation**	
1	3	1	1.6	1	4	2.5	**4**

Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: -			**Final Project Proposal**		**Degree of Mitigation: -**		
Should the recommendation of this report be implemented, no invasive prospecting will be conducted on the farm Hartebeestdale No 564 without prior approval from the Minister of DFFE. The significance will therefore remain **Medium-High** until the said permission is received.							

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

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

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

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

INVASIVE PROSPECTING (PHASE 4 & 6): OPERATIONAL PHASE

Temporary loss of some agricultural land earmarked for invasive prospecting.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Final Project Proposal**		**Degree of Mitigation: Partial**		
1	3	1	1.6	4	5	4.5	**7.2**

Visual intrusion because of invasive prospecting

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Partial**		
1	2	1	1.3	2	5	3.5	**4.5**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	3	1	3	2	1	1.5	**4.5**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	3	1	2	2	1	1.5	**3**

Increase in sediment inputs and turbidity due to invasive prospecting.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	1	2	1.6	3	1	2	**3.2**

Increase in sediment inputs and turbidity due to invasive prospecting.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	1	2	1.6	3	1	2	**3.2**

Dust nuisance because of invasive prospecting.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

Noise nuisance because of invasive prospecting

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Partial**	
2	2	1	1.6	2	2	2	**3.2**

Potential impact on sensitive/protected flora within the footprint area.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	4	5	3.6	2	1	1.5	**5.4**

Potential impact on fauna within the footprint area.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

Infestation of the prospecting areas with invader plant species.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	1	1	1.3	2	2	2	**2.6**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

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

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

Erosion of denuded areas.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

Deterioration of access roads due to prospecting activities.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	2	1	1.6	2	2	2	**3.2**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
1	4	2	2.3	2	2	2	**4.6**

Increased fire risk during operational phase.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
1	3	1	1.6	2	2	2	**3.2**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low-Medium			**Final Project Proposal**		**Degree of Mitigation: Full**		
1	4	4	3	4	2	3	**9**

INVASIVE PROSPECTING (PHASE 4 & 6): DECOMMISSIONING (MEDIUM- & LONG TERM)

Safety risk due to uncapped boreholes.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	2	1	1.6	2	2	2	**3.2**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
1	2	1	1.3	2	2	2	**2.6**

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	2	1	1.6	2	2	2	**3.2**

Infestation of the reinstated areas with invader plant species.

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	2	1	1.6	2	2	2	**3.2**

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

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

CUMULATIVE IMPACTS

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

			Consequence			Likelihood	**Significance**
Severity	Duration	Extent		Probability	Frequency		
Rating: Low			**Final Project Proposal**		**Degree of Mitigation: Full**		
2	4	3	3	2	1	1.5	**4.5**

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

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	4	3	3	2	1	1.5	**4.5**

Fragmentation of ecosystems affecting safe movement of faunal species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Low			**Final Project Proposal**			**Degree of Mitigation: Full**	
2	4	1	2.6	2	1	1.5	**3.9**

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

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

j) Assessment of each identified potentially significant impact and risk.

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

Table 31: Assessment of each identified potentially significant impact and risk.

ACTIVITY Whether listed or not listed. (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)	POTENTIAL IMPACT (E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, air pollution, etc…etc…etc.)	ASPECTS AFFECTED	PHASE In which impact is anticipated. (E.g. Construction, commissioning, operational Decommissioning closure, post closure.)	SIGNIFICANCE If not mitigated.	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc etc) E.g. Modify through alternative method Control through noise control Control through management and monitoring through rehabilitation.	SIGNIFICANCE If not mitigated.
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment ➢ Operational Phase	➢ Temporary loss of agricutlral 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 area, 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 4 & 6): ➢ 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	<u>Control:</u> Implementing proper housekeeping.	➢ Low ➢ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment	➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	The conservation status of the nature reserve could be negatively affected.	Site Establishment- & Operational Phase	➢ Medium-High	Stop & Modify: Do not prospect the area without prior approval from the Minister of DFFE.	➢ Medium-High
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impacts	➢ Potential negative impact on the identified CBA and/or ESA areas. ➢ Potential impact on sensitive/protected flora within the footprint area. ➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.	Impact may affect the biodiversity richness of the area.	Operational Phase	➢ Medium-High ➢ Medium ➢ Medium-High ➢ Medium	Control: Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.	➢ Low ➢ Low-Medium ➢ Low ➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Potential negative impact on the watercourses/wetlands and FEPA's of the study area.	Impact may affect water resources in a water scarce area.	Operational Phase	➢ Medium-High ➢ Medium	Control & Stop: Implementing the proposed mitigation measures.	➢ Low ➢ Low ➢ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
	➢ Increase in sediment inputs and turbidity due to invasive prospecting. ➢ Increase in toxic heavy metal contaminants.			➢ Low-Medium		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Dust nuisance because of invasive prospecting.	Increased dust generation will impact on the air quality of the receiving environment.	Operational Phase	➢ Medium	Control: Dust suppression methods and proper housekeeping.	➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ 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	➢ Medium	Control: Noise suppression methods and proper housekeeping.	➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impact	➢ Potential impact on fauna within the footprint area. ➢ Fragmentation of ecosystems affecting safe movement of faunal species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	➢ Low-Medium ➢ Medium	Control & Stop: Implementing good management practices.	➢ Low ➢ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Infestation of the prospecting ara 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	Control: Implementing invader plant control measures.	➢ Low ➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Potential soil contamination associated with littering and/or hydrocarbon spillages. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospected areas.	Contamination of the footprint area 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	Control & Remedy: Proper housekeeping and implementation of an emergency response plan.	➢ Low ➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	➢ Low	Control & Stop: Implementing good management practices, as well as the chance-find protocol.	➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Erosion of denuded areas.	Erosion of prospected areas will affect the rehabilitation requirements and	Operational- & Decommissioning Phase	➢ Low-Medium ➢ Low-Medium	Control & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Deterioration of the access roads due to prospecting activities.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	➢ Low-Medium	Control & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Health and safety risk posed by invasive activities to prospecting employees.	The safety of the employees will be affected.	Operational Phase	➢ Medium	Control, Stop & Remedy: Prospecting according to the health and safety regulations of the country and rectifying any shortcomings.	➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Presence of prospector negatively affecting safety and security of the property. ➢ Safety risk due to uncapped boreholes.	The impact may affect the security of the area. Uncapped boreholes will pose a safety risk to the animals and humans of the area	Operational Phase	➢ Medium-High ➢ Medium	Control, Stop & Remedy: Implementing proper human resources practices, and progressive rehabilition. Closing boreholes at the end of each day.	➢ Low ➢ Low
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Increased fire risk during operational phase.	Uncontrolled fires may affect the biodiversity and	Operational Phase	➢ Medium	Control: Implementing good housekeeping and emergency risk procedures.	➢ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
		agricultural practices of the area.				

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

k) Summary of specialist reports.

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

Table 32: Summary of specialist reports

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
Heritage Impact Assessment For the proposed prospecting application on 66 107.1283 hectares in the Northern Cape. *(See Appendix F for a full copy of the document)*	**Recommendations:** ➢ Once the drill 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; ➢ Drill sites must be kept as close as possible to existing roads in order to minimise the impact on the landscape; ➢ Focal points on the landscape like rocky outcrops, caves (including the Kogelbeen caves) or pans must be avoided as far as possible as these areas could be sensitive from a heritage point of view;	This report supports all the recommendations proposed by the specialist.	Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Archaeological, Heritage and Palaeontological Aspects.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	➢ Burial sites, memorials and graves should be avoided with a 30 m buffer zone; ➢ Monitoring of the Project area by the ECO during the exploration phase for heritage and palaeontology chance finds, if chance finds are encountered to implement the Chance Find Procedure for the Project as outlined in Section 9. <u>Chance Find Procedure:</u> 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. 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		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	ensure they are fully aware of the procedures regarding chance finds as discussed below. ➢ 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. ➢ 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 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. <u>Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.</u> ➢ The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence. ➢ When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	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. ➢ 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. ➢ Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. ➢ 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. ➢ 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. ➢ If no good fossil material is recovered, then no site inspections by the palaeontologist will be necessary. A final report by the		

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	palaeontologist must be sent to SAHRA once the Project has been completed and only if there are fossils. ➢ If no fossils are found and the excavations have finished, then no further monitoring is required.		
Wetland/Aquatic and Terrestrial Desktop Sensitivity & Familiarisation Prospecting right application for targeted blocks within the Kuruman, Barkly West, Hay & Hopetown Magisterial Districts, Northern Cape Province, South Africa. *(See Appendix E for a full copy of the document)*	**<u>Planning Recommendations for Terrestrial Ecosystems:</u>** Terrestrial ecosystems were categorized into sensitivity classes following the guidelines in section 2.1.5, guiding the placement of prospecting pits. Consequently, areas categorized as 'High' and 'Moderate' sensitivity in terrestrial ecosystems should be avoided, while targeted prospecting activities are recommended within areas classified as 'Low' sensitivity. **<u>Planning Recommendations for Freshwater Ecosystems:</u>** Unlike the terrestrial ecosystem sensitivity map, which has several sensitivity classes to inform siting of prospecting pits, freshwater ecosystems should be avoided irrespective of their sensitivity and ecosystem threat status. As such, all freshwater ecosystem boundaries should be considered high sensitivity and avoided. 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.	This report includes the initial recommendations of the specialist, however, proposes that a second phase investigation be conducted (by ecologist & hydrologist) once the invasive prospecting programme (drill pattern) is available to refine the identified sensitivities. The findings of the second phase investigation/s must be approved, with the drill plan, by the DMRE prior to commencement.	Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Groundcover, Fauna, Biodiversity Conservation. Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Groundcover, Fauna, Biodiversity Conservation.

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with X if applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED
	According to the buffer model, the key risk associated with prospecting are sediment and turbidity impacts and water quality impacts from heavy metals (Table 2). 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.		

l) 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 Summary

The Applicant applied for a PR (without bulk sampling) for lithium, lead, copper, zinc, and sulphides over ±66 107 ha of the properties listed in Table 1. Should the PR be issued, the proposed project will comprise of seven phases that can be divided into non-invasive- and invasive prospecting (Table 4). The targeting of all drilling 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 8 for a summary of the Final Project Proposal (regarding alternatives that where considered).

Land Use

The land capability of the farms Mahura Muthla No 198, Mora Schuba No 201, Kogelbeen No 44 and Banghoek No 17 (earmarked for invasive prospecting) range between Low and Medium. The farms are mainly used for grazing. 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 drill sites will once again be available for agricultural use.

Topography

The prospecting activities will not impact the topography of the area as the project does not require bulk sampling. All boreholes will be capped, and the trenches will be refilled after sampling. Should the mitigation measures be implemented, the activity will have no residual impact on the environment.

Visual Characteristics

The area of disturbance is expected to be ±400 m² per drill site 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 significance once the mitigation measures are implemented.

Air and Noise Quality

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 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 and Soil

The remote sensing study suggests that the following farms hold the greatest potential for Pb, Zn and Cu base metal mineralisation.

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Hartebeestdale No 564;
- Kogelbeen No 44; and
- Banghoek No 17.

Hydrology

Eco-Pulse recommended that the identified freshwater ecosystems (Figure 129 – 135) be avoided irrespective of their sensitivity and ecosystem threat status. Presently, an aquatic impact buffer of 40 m is recommended. Once the invasive prospecting programme (drill 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 drill plan, by the DMRE prior to commencement.

Groundcover, Fauna, and Biodiversity Conservation

The initial sensitivity layers created for terrestrial ecosystems (Figure 129 – 135) are crucial for planning purposes. It is imperative to avoid sensitive 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 the ecologist) at selected prospecting sites to refine the identified sensitivities. The findings of the second phase investigation must be approved, with the drill plan, by the DMRE prior to commencement.

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, based on SAHRA's approval. Once the drill sites have been confirmed these areas have to 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.

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.

ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structure and infrastructure 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, 3, and 5. Presently it is expected that non-invasive prospecting will be conducted on all the farms applied for except for Hartebeestdale No 564 (unless approved by the DFFE Minister), and that invasive prospecting will be conducted on portions of the following farms:

- Mahura Muthla No 198;
- Mora Schuba No 201;
- Kogelbeen No 44; and
- Banghoek No 17

See Appendix D1 – 3 for maps showing the areas where invasive prospecting is expected. These maps will be updated once the drill plan is available and will be submitted to the DMRE for approval when available.

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

POSITIVE IMPACTS ASSOCIATED WITH THE PROJECT PROPOSAL

- If approved the prospecting activities will identify the lithium, lead, copper, zinc, and sulphide sources within the earmarked areas.
- Work opportunities for 15 - 20 community members including associated growth development opportunities.
- Compensation of landowners during operational phase.
- Invasive prospecting does not require bulk sampling.
- 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.

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 33: List of potential impacts deemed to have a low-medium or higher significance/risk.

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION	SIGNIFICANCE (AFTER MITIGATION)
➢ Site establishment ➢ Operational phase	➢ Temporary loss of agricultural land earmarked for site camp establishment. ➢ Temporary loss of some agricultural land earmarked for invasive prospecting.	➢ Low-Medium ➢ Medium	➢ Low-Medium ➢ Low-Medium
➢ Site Establishment.	➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	➢ Medium-High	➢ Medium-High
➢ Operational phase.	➢ Potential impact on sensitive/protected flora within the footprint area.	➢ Medium	➢ Low-Medium

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

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

Table 34: Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
TOPOGRAPHY Landscaping of Prospecting Area	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Implement progressive rehabilitation as prescribed in this report throughout the operational- and decommissioning phases of the project.	➢ Effectively restoring the prospected areas to prevent residual impacts and allow for the proposed agricultural end-use.
VISUAL CHARACTERISTICS Mitigating the visual impact.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Contain prospecting to the approved boundaries. ➢ Ensure the camp site and every borehole site has a neat appearance and is always kept in good condition. ➢ Limit vegetation removal and avoid the removal of large trees (>20 cm stem) or vegetation of significance (identified by ECO). ➢ Store prospecting equipment neatly in a dedicated area when not in use. ➢ Implement concurrent rehabilitation as prospecting progress to limit the visual impact on the aesthetic value of the area. ➢ Only strip topsoil immediately prior to the use of a specific area.	➢ 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.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		➢ Rehabilitate all sites to keep the visual impact on the aesthetic value of the area to a minimum.	
AIR QUALITY AND NOISE AMBIANCE Dust Mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ 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). ➢ Ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression. ➢ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust. ➢ Minimise areas devoid of vegetation. ➢ Consider weather conditions upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. ➢ 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). ➢ Implement best practice measures during the stripping of topsoil to minimize potential dust impacts.	➢ Dust prevention measures are applied to minimise the generation of dust.
AIR QUALITY AND NOISE AMBIANCE Noise mitigation.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	➢ Ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the site camp and/or prospecting areas. ➢ Ensure that all project related vehicles are equipped with silencers and maintained in a road worthy	➢ Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	condition in terms of the National Road Traffic Act, 1996. ➢ Implement best practice measures to minimise potential noise impacts.	
GEOLOGY AND SOIL Topsoil Handling	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Strip and stockpile the upper 300 mm of the soil before site camp establishment and/or prospecting. ➢ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. ➢ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time. ➢ Place the topsoil heaps on a levelled area within the mining footprint area. Do not stockpile topsoil in undisturbed areas. ➢ 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. ➢ Ensure that topsoil heaps do not exceed 2 m. ➢ Keep temporary topsoil stockpiles free of invasive plant species. ➢ Divert storm- and runoff water around the stockpile area to prevent erosion. ➢ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site. ➢ Strive to re-instate topsoil at a time of the year when vegetation cover can be established as quickly as	➢ Adequate fertile topsoil is available to rehabilitate the prospected areas.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		possible afterwards, to that erosion of returned topsoil is minimized. The best time of year is at the end of the rainy season. ➢ 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. ➢ Monitor the rehabilitated area for erosion, and appropriately stabilize if erosion do occur, for at least 12 months after reinstatement.	
HYDROLOGY Mitigating the potential impact on watercourse/wetlands and FEPA's.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Arrange additional fieldwork by a qualified hydrologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from impacting watercourses/pans/wetlands. ➢ Submit the findings of the hydrologist, with the drill plan, to the DMRE for approval prior to commencement. ➢ 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. ➢ Should a water use authorisation be applicable, always adhere to the conditions thereof. ➢ Upon closure, remove all prospecting related equipment/machinery from the footprint.	➢ Prospecting activities have no impact on the watercourses/wetlands and/or FEPA's of the area.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
HYDROLOGY Erosion Mitigation / Storm Water Control.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Maintain an aquatic impact buffer of 40 m around all watercourses. ➢ Divert storm water around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion. ➢ 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. ➢ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable). ➢ Collect dirty water and contain it in a system separate from the clean water system. ➢ Prevent dirty water from spilling or seeping into clean water systems.	➢ Impact to the environment caused by storm water discharge is avoided and erosion is managed.
GROUNDCOVER, FAUNA, AND BIODIVERSITY Impacts on floral species, and fragmentation of vegetation communities within the CBA and ESA ecosystems.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Do not conduct prospecting on the farm Hartebeestdale No 564 without the Minister of DFFE's approval. ➢ Arrange additional fieldwork by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants. ➢ Submit the findings of the ecologist, with the drill plan, to the DMRE for approval prior to commencement. ➢ Clearly demarcate the prospecting boundaries and contain all operations to the approved area.	➢ The Rockwood Nature Reserve is not prospected without prior approval of the Minister of DFFE. ➢ Vegetation clearing is restricted to the authorised development footprint.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		➢ Declare the area outside the boundaries a no-go area and educate all employees accordingly. ➢ Implement an invasive plant species management plan to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.	
GROUNDCOVER, FAUNA, AND BIODIVERSITY Management of Invasive Plant Species.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ 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. ➢ Keep all stockpiles free of invasive plant species. ➢ Control declared invader or exotic species on the rehabilitated areas.	➢ Prospecting areas are kept free of invasive plant species.
GROUNDCOVER, FAUNA, AND BIODIVERSITY Impact on faunal species, and fragmentation of ecosystems affecting safe movement of species.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Ensure no fauna is caught, killed, harmed, sold, or played with. ➢ Instruct workers to report any animals that may be trapped in the working area. ➢ Ensure no snares are set or nests raided for eggs or young.	➢ Disturbance to fauna is minimised.
CULTURE AND HERITAGE ENVIRONMENT	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	➢ Arrange a heritage walk down once the drill sites have been confirmed prior to the commencement of invasive prospecting activities. ➢ Keep drill sites as close as possible to existing roads to minimise the impact on the landscape.	➢ Impact to cultural/heritage resources is avoided or at least minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
Archaeological, Heritage and Palaeontological Aspects.	Compliance to be monitored by the Environmental Control Officer.	➢ Avoid focal points on the landscape like rocky outcrops, caves (Kogelbeen Cave), or pans as far as possible as these areas could be sensitive from a heritage point of view. ➢ Avoid burial sites, memorials, and graves with a 30 m buffer zone. ➢ Conduct further palaeontological studies once the impact areas are confirmed. ➢ 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. ➢ 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 will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		professional archaeologist for an assessment of the finds who will notify SAHRA. ➢ Work may only continue once the go-ahead was issued by SAHRA.	
SOCIO-ECONOMIC ENVIRONMENT / LAND USE Loss of agricultural land for duration of invasive prospecting.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised.	➢ Prospecting has the least possible impact on the operation of the property.
EXISTING INFRASTRUCTURE Access Road Mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Divert storm water around the access road to prevent erosion. ➢ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ➢ Repair rutting and erosion of the access road caused as a direct result of the prospecting activities. ➢ Prior to commencement, sign an agreement confirming responsibility towards the movement of employees. ➢ Repair/reinstate damages to fences (by prospecting employees). Compensate losses, due to gates left open by prospecting employees.	➢ 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.
GENERAL Waste management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	➢ 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	➢ Wastes are appropriately handled and safely disposed of at a recognised waste facility.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	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. ➢ Provide ablution facilities to all employees. Place the toilet outside the 1:100 year floodline of all watercourses. ➢ 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. ➢ 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. ➢ Clean drip trays after each use. Do not use dirty drip trays on site. ➢ 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. ➢ 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.	

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		➢ 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. ➢ Do not bury or burn waste on the site. ➢ 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.	
GENERAL Management of Health and Safety Risks.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Ensure there is adequate ablution facilities and water for human consumption available on site. ➢ Provide workers with the correct personal protection equipment (PPE) as required by law. ➢ Ensure all operations comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ➢ Daily cover drill-holes even if prospecting will continue the following day. Upon closure, seal and cap all boreholes as prescribed in the rehabilitation plan.	➢ The prospecting activities do not pose a health and safety risk to employees, land users and/or animals.
GENERAL Management of Safety Risks to Landowners.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ Screen employees to be appointed prior to inception of contract. ➢ Do not allow employees to reside within the prospecting area. ➢ Educate prospecting employees to report suspicious looking person/s and/or matters to site management. ➢ Maintain direct communication between the prospector and the landowners for the duration of the site establishment-, operational, and decommissioning phases.	➢ The prospecting activities do not cause a safety risk to landowners.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
GENERAL Fire Risk Management	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	➢ 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, ➢ Prevent employees from setting fires randomly outside designated areas. ➢ Do not store fuel or chemicals under trees. ➢ Do not store gas in the same storage area as liquid fuel. ➢ Designate smoking to specific 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. ➢ 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, ➢ Report any fires noted on site to the responsible SHE rep and/or fire officer. ➢ Implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases. ➢ 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	➢ Prospecting activities do not result in uncontrolled fires.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		watch of the fire to ensure that the fire is brought under control as soon as possible.	

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

The management objectives listed in this report under *Part A(1)(m) 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 authorised.

i) Reasons why the activity should be authorised 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 authorisation.

The management objectives listed in this report under *Part A(1)(m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR* should be considered for inclusion in the environmental authorisation.

q) Period for which the Environmental Authorisation 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 Basic Assessment Report and the Environmental Management Programme report.

s) Financial Provision

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

i) Explain how the aforesaid amount was derived.

The average annual amount required to manage and rehabilitate the environment was estimated to be ±R 141 048. The table below shows the proposed cost regarding site rehabilitation of the applicable phases of invasive prospecting.

Table 35: Proposed annual rehabilitation cost.

PHASE	YEAR	COST
Phase 4 (18-36 months)	2	R 36 000
Phase 4 (18-36 months)	3	R 36 000
Phase 6 (42-48 months)	4	R 69 048
Average annual rehabilitation cost		R 141 048

ii) Confirm that this amount can be provided 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 Strata Africa Exploration (Pty) Ltd underwritten by Scipion Capital. Strata Africa Exploration (Pty) Ltd secured sufficient funds that can be leveraged to fund the prospecting operation (as presented in the PWP).

t) Specific Information required by the competent Authority.

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

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

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

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:** *(Low-Medium Significance after Mitigation)*

  According to the DFFE screening report the land capability of the farms Mahura Muthla No 198, Mora Schuba No 201, Kogelbeen No 44 and Banghoek No 17 range between Low and Medium. The farms are mainly used for grazing. 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.

- **Visual intrusion associated with the prospecting activities:** *(Low Significance after Mitigation)*

  Most of the study area is scarcely populated, and as mentioned earlier, the area of disturbance is expected to be ±400 m² per drill site 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 without mitigation and low significance once the mitigation measures are implemented.

- **Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564:** *(Medium-High Significance)*

  The Applicant will need to apply for permission to prospect the Rockwood Nature Reserve from the DFFE Minister immediately upon receipt of an environmental authorisation (EA) (from DMRE). Based on the findings of this report it is proposed that the no-go option be implemented for the farm Hartebeestdale No 564 (unless prospecting is approved by the DFFE Minister).

- **Dust nuisance caused because of the prospecting activities:**
  (Low Significance after Mitigation)

  The prospecting activity will contribute the emissions of the prospecting equipment and vehicles 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:**
  (Low Significance after Mitigation)

  The prospecting activity requires ±1 000 l of water/day that will be bought in a controlled manner from legal sources. No prospecting will take place drainage lines or other water resources. Considering this, the potential of prospecting impact the water resources of the footprint area is deemed very low.

- **Access control and management of existing infrastructure:**
  (Low Significance after Mitigation)

  The drilling 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 affect upon appointment and will be held responsible for damages to fences or gates left ajar by prospecting personnel.

(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 the Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6 and 2.12 herein).

The prospecting areas are within an archaeologically rich landscape especially in relation to the Stone Age with significant sites such as the Kathu Complex and the national heritage sites of Wonderwerk Cave, Kathu Townlands, and the Kogelbeen Caves, found in this region.

The HIA concludes that 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 the HIA.

u) Other matters 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)(h)(x) *Statement motivating the alternative development location within the overall site*.

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME.

a) Details of the EAP,

(Confirm that the requirements 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* as well as Appendix J as required.

b) Description of the Aspects of the Activity

(Confirm that the requirements 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 has been described and included in Part A, section (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 any areas that should be avoided, including buffers)

As mentioned under Part A(1)(l)(ii) *Final Site Map* maps showing the areas where invasive prospecting is expected is attached as Appendix D1-3. 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 at minimum cost and 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.
- 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/invader plant species by intensive management of the mining 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 borehole sites;
- Sealing and capping of all the boreholes;
- 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 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 a reasonable assessment 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 mining 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) Volume and rate of water use required for the operation.

The drilling operation require ±1 000 l of water per day, and potable water will be brought to site daily by the employees.

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

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. Once the prospecting plan was finalised, and should such application be needed, the Applicant will enter discussions with the DWS to determine the relevant requirements.

iv) Impacts to be mitigated in their respective phases.

Table 36: Impact to be mitigated in their respective phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
(as listed in 2.11.1)	of operation in which activity will take place. State; Planning and design, Pre-Construction, Operational, Rehabilitation, Closure, Post closure	(volumes, tonnages and hectares or m^2)	(describe how each of the recommendations herein will remedy the cause of pollution or degradation and migration of pollutants)	(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)	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 4 & 6): ➢ Site Establishment ➢ Operational Phase	Site Establishment- & Operational Phase	Site Camp: ±3 ha Drilling: 400 m² per borehole site	**Loss of Agricultural Land for Duration of Prospecting:** ➢ 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.
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment	Site Establishment- & Operational Phase	Site Camp: ±3 ha Drilling: 400 m² per borehole site	**Visual Mitigation** ➢ Prospecting must be contained to the approved boundaries.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998	Throughout the site establishment- and operational phases.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Operational Phase			➢ 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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impacts	Operational Phase	Drilling: 400 m² per borehole site	**Management of the impact on floral species, and fragmentation of vegetation communities within the CBA and ESA ecosystems:** ➢ No prospecting may take place on the farm Hartebeestdale No 564 without the Minister of DFFE's approval.	Natural vegetated areas must be managed in accordance with the: ➢ NEM:BA 2004 ➢ NEM:PAA, 2003	Throughout the operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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 drill plan, 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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	<u>Drilling</u>: 400 m² per borehole site	**<u>Management of the impact on watercourse/wetlands and FEPA's of the study area:</u>** ➢ Once the invasive prospecting programme is available additional	All watercourses/wetlands and FEPA's must be managed in accordance with the: ➢ NWA, 1998	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			fieldwork must be done by a qualified hydrologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from impacting watercourses/pans/wetlands. ➢ The findings of the hydrologist, with the drill plan, 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. ➢ Should a water use authorisation be applicable to the project, the Applicant must always adhere to the conditions thereof. ➢ Upon closure, the Applicant must remove all prospecting related equipment/machinery from the footprint.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	<u>Drilling</u>: 400 m² per borehole site	**<u>Fugitive Dust Emission Mitigation:</u>** ➢ The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, straw, water spraying and/or	Dust generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1)	Throughout the operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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. ➢ 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.	➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)	

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	Drilling: 400 m² per borehole site	**Noise Handling:** ➢ 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.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996	Throughout the operational-, and decommissioning phase.
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impact	Operational Phase	Drilling: 400 m² per borehole site	**Protection of Fauna:** ➢ 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.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004	Throughout the and operational phase.
Invasive Prospecting (Phase 4 & 6):	Operational and Decommissioning Phase	Drilling:	**Management of Invader Plant Species:** ➢ An invasive plant species management plan must be implemented on site to	Invader plants must be managed in accordance with the:	Throughout the operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
➢ Operational Phase ➢ Decommissioning Phase		400 m² per borehole site	control weeds and invasive plants on denuded- and reinstated areas in terms of the NEM:BA, 2004 and CARA, 1983. ➢ Management must take responsibility to control declared invader or exotic species that germinate on 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.	➢ CARA, 1983 ➢ NEM:BA 2004	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	Operational and Decommissioning Phase	<u>Drilling</u>: 400 m² per borehole site	**<u>Waste Management:</u>** ➢ 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	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)	Throughout the site establishment-, operational- and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	Drilling: 400 m² per borehole site	**Archaeological, Heritage and Palaeontological Aspects:** ➢ Once the drill sites have been confirmed these areas have to be subjected to a heritage walk down, this should be conducted prior to the	Cultural/heritage aspects must be managed in accordance with the: ➢ NHRA, 1999	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			commencement of invasive prospecting activities. ➢ Drill 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 (Kogelbeen Cave), 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 should be conducted once the impact areas are confirmed. ➢ 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		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	Operational Phase	<u>Drilling</u>: 400 m² per borehole site	**<u>Erosion Control and Storm Water Management:</u>** ➢ An aquatic impact buffer of 40 m must be maintained around all watercourses. ➢ 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	Storm water must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NWA, 1998	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	Drilling: 400 m² per borehole site	**Access Road and Infrastructure Mitigation:** ➢ Storm water must be diverted around the access road to prevent erosion. ➢ Vehicular movement must be restricted to the existing access road 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. ➢ Prior to commencement, all contractors must sign an agreement confirming their responsibility towards the movement of their employees.	The site infrastructure must be managed in accordance with the: ➢ NRTA, 1996 ➢ MPRDA, 2002	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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.		
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational and Decomissioning Phase	N/A	**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 even if prospecting will continue the following day. Upon closure all boreholes must be sealed off and capped as prescribed in the rehabilitation plan.	Health and safety aspects must be managed in accordance with the: ➢ MHSA, 1996 ➢ OHSA, 1993 ➢ OHSAS, 18001	Throughout the operational-, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	N/A	**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.	All prospecting activities must be in accordance with the: ➢ MPRDA, 2002; ➢ NEMA, 1998	Throughout the operational phase.
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	Operational Phase	Drilling: 400 m² per borehole 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.	All prospecting activities must be in accordance with the: ➢ MPRDA, 2002; ➢ NEMA, 1998	Throughout the operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			➢ 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.		

e) Impact Management Outcomes

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

Table 37: Impact Management Outcomes

ACTIVITY whether listed or not listed (E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc..etc.)	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc...etc..)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc...etc..) E.g. • Modify through alternative method. • Control through noise control • Control through management and monitoring Remedy through rehabilitation.	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Invasive Prospecting (Phase 4 & 6):	➢ Temporary loss of agricutlral land	The impact may affect the agricultural	Site Establishment- & Operational Phase	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the	Use of agricultural land must be managed in accordance with the: ➢ CARA, 1983

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Site Establishment ➢ Operational Phase	earmarked for site camp establishment. ➢ Temporary loss of some agricultural land earmarked for invasive prospecting.	operations of the property.		footprint area, only to be reversed upon rehabilitation of the site camp and/or prospected areas. The impact can be controlled through progressive rehabilitation.	
Invasive Prospecting (Phase 4 & 6): ➢ 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	<u>Control:</u> Implementing proper housekeeping.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment	➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	The conservation status of the nature reserve could be negatively affected.	Site Establishment- & Operational Phase	<u>Stop & Modify:</u> Do not prospect the area without prior approval from the Minister of DFFE.	Protected areas are managed in accordance with the: ➢ NEM:PAA, 2003
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impacts	➢ Potential negative impact on the identified CBA and/or ESA areas. ➢ Potential impact on sensitive/protected flora within the footprint area.	Impact may affect the biodiversity richness of the area.	Operational Phase	<u>Control:</u> Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.	Natural vegetated areas must be managed in accordance with the: ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.				
Invasive Prospecting (Phase 4 & 6): ➢ 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 & 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 4 & 6):	➢ Dust nuisance because of invasive prospecting.	Increased dust generation will impact on the air	Operational Phase	<u>Control:</u> Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the:

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
➢ Operational Phase		quality of the receiving environment.			➢ NEM:AQA. 2004 Regulation 6(1) ➢ National Dust Control Regulations, GN No R827 ➢ ASTM D1739 (SANS 1137:2012)
Invasive Prospecting (Phase 4 & 6): ➢ 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	Control: Noise suppression methods and proper housekeeping.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impact	➢ Potential impact on fauna within the footprint area. ➢ Fragmentation of ecosystems affecting safe movement of faunal species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control & Stop: Implementing good management practices.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Infestation of the prospecting ara with invader plant species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	Control: Implementing invader plant control measures.	Invader plants must be managed in accordance with the: ➢ CARA, 1983 ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
	➢ Infestation of the reinstated areas with invader plant species.				
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Potential soil contamination associated with littering and/or hydrocarbon spillages. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospected areas.	Contamination of the footprint area will negatively impact the soil, surface runoff and potentially the groundwater. It will also incur additional costs to the Applicant.	Operational- and Decommissioning Phase	Control & Remedy: Proper housekeeping and implementation of an emergency response plan.	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 4 & 6): ➢ Operational Phase	➢ Potential impact on area/infrastructure of heritage or cultural concern.	This could impact on the cultural and heritage legacy of the receiving environment.	Operational Phase	Control & Stop: 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 4 & 6): ➢ 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	Control & Remedy: Proper housekeeping and storm water management.	Storm water must be managed in accordance with the: ➢ CARA, 1983 ➢ NEMA, 1998 ➢ NWA, 1998

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Deterioration of the access roads due to prospecting activities.	Collapse of the road infrastructure will affect the landowners.	Operational Phase	Control & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Health and safety risk posed by invasive activities to prospecting employees.	The safety of the employees will be affected.	Operational Phase	Control, Stop & Remedy: 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
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Presence of prospector negatively affecting safety and security of the property. ➢ Safety risk due to uncapped boreholes.	The impact may affect the security of the area. Uncapped boreholes will pose a safety risk to the animals and humans of the area	Operational Phase	Control, Stop & Remedy: Implementing proper human resources practices, and progressive rehabilition. Closing boreholes at the end of each day.	All prospecting activities must be in accordance with the: ➢ MPRDA, 2002; ➢ NEMA, 1998
Invasive Prospecting (Phase 4 & 6): Operational Phase	➢ Increased fire risk during operational phase.	Uncontrolled fires may affect the biodiversity and agricultural practices of the area.	Operational Phase	Control: 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 in paragraph (c) and (d) will be achieved)

Table 38: 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. • Modify through alternative method. • Control through noise control • Control through management and monitoring 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 4 & 6): ➢ Site Establishment Operational Phase	➢ Temporary loss of agricutlral land earmarked for site camp establishment. ➢ Temporary loss of some agricultural land earmarked for invasive prospecting.	Should the proposed project be approved, the operation will temporarily interrupt the agricultural activities of the footprint area, 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 establishment- and operational phase.	Use of agricultural land must be managed in accordance with the: ➢ CARA, 1983

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment ➢ Operational Phase	➢ Visual intrusion because of site camp. ➢ Visual intrusion because of invasive prospecting.	Control: Implementing proper housekeeping.	Throughout the site establishment- and operational phase.	Management of the prospecting area must be in accordance with the: ➢ MPRDA, 2008 ➢ NEMA, 1998
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment	➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	Stop & Modify: Do not prospect the area without prior approval from the Minister of DFFE.	Throughout the site establishment- and operational phase.	Protected areas are managed in accordance with the: ➢ NEM:PAA, 2003
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impacts	➢ Potential negative impact on the identified CBA and/or ESA areas. ➢ Potential impact on sensitive/protected flora within the footprint area. ➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA and ESA ecosystems.	Control: Implementing the proposed mitigation measures and preventing blanket clearing of vegetation.	Throughout the operational phase.	Natural vegetated areas must be managed in accordance with the: ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 4 & 6): ➢ 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.	Control & Stop: Implementing the proposed mitigation measures.	Throughout the operational, phase.	All watercourses/wetlands and FEPA's must be managed in accordance with the: ➢ NWA, 1998
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Dust nuisance because of invasive prospecting.	Control: Dust suppression methods and proper housekeeping.	Throughout the operational phase.	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 4 & 6): ➢ Operational Phase	➢ Noise nuisance because of invasive prospecting.	Control: Noise suppression methods and proper housekeeping.	Throughout the operational phase.	Noise generation must be managed in accordance with the: ➢ NEM:AQA. 2004 Regulation 6(1) ➢ NRTA, 1996
Invasive Prospecting (Phase 4 & 6):	➢ Potential impact on fauna within the footprint area.	Control & Stop: Implementing good management practices.	Throughout the operational phase.	Fauna must be managed in accordance with the: ➢ NEM:BA 2004

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
➢ Operational Phase Cumulative Impact	➢ Fragmentation of ecosystems affecting safe movement of faunal species.			
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Infestation of the prospecting ara with invader plant species. ➢ Infestation of the reinstated areas with invader plant species.	Control: 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 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Potential soil contamination associated with littering and/or hydrocarbon spillages. ➢ Potential impact assocaited with litter/hydrocarbon spills left in the prospected areas.	Control & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Potential impact on area/infrastructure of heritage or cultural concern.	Control & Stop: 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

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	➢ Erosion of denuded areas. ➢ Erosion of roads, vehicle tracks and/or denuded areas.	Control & Remedy: 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
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Deterioration of the access roads due to prospecting activities.	Control & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Health and safety risk posed by invasive activities to prospecting employees.	Control, Stop & Remedy: 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 4 & 6): ➢ Operational Phase	➢ Presence of prospector negatively affecting safety and security of the property. ➢ Safety risk due to uncapped boreholes.	Control, Stop & Remedy: Implementing proper human resources practices, and progressive rehabilition. 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

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Increased fire risk during operational phase.	Control: 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 the Regulation.

The closure objectives entail removing the drill rig and any foreign material from the site; sealing and capping of the drill holes 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 Basic Assessment Report, includes all the environmental objectives related to closure and will be made available for perusal by the landowners, registered I&AP's and stakeholders over a 30-days commenting period.

(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 requested 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 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 a reasonable assessment 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 mining 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.

Prospecting type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

Mineral type	➢ Lithium, ➢ Lead, ➢ Copper, ➢ Zinc, ➢ Sulphides
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 prospecting area

According to Table B.4

Environmental sensitivity of the mine area	Low

Level of information

According to Step 4.2:

Level of information available	Limited

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)	-	NO
2(A)	Demolition of steel buildings and structures	-	NO
2(B)	Demolition of reinforced concrete buildings and structures	-	NO
3	Rehabilitation of access roads	-	NO
4(A)	Demolition and rehabilitation of electrified railway lines	-	NO
4(B)	Demolition and rehabilitation of non-electrified railway lines	-	NO
5	Demolition of housing and facilities	-	NO
6	Opencast rehabilitation including final voids and ramps	-	NO
7	Sealing of shafts, adits and inclines	-	NO
8(A)	Rehabilitation of overburden and spoils	-	NO
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	NO
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	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	-	-
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	-	-
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) & 1.10 (Undulating)
Weighting factor 2: Proximity to urban area where goods and services are to be supplied	1.05

Calculation of closure costs

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision

Table 39: Calculation of closure cost

CALCULATION OF THE QUANTUM							
Site Name:	Strata Africa Exploration Prospecting Right			**Location:**	Kuruman, Barkly West, Hay, Hopetown		
Evaluators:	C Fouché			**Date:**	16 April 2024		
No	**Description**	**Unit**	**A Quantity**	**B Master rate**	**C Multiplication factor**	**D Weighting factor 1**	**E=A *B*C*D Amount (Rand)**
			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^2	0	22	1.00	1.10	R 0.00
2(A)	Demolition of steel buildings and structures	m^2	0	305	1.00	1.10	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m^2	0	449	1.00	1.10	R 0.00
3	Rehabilitation of access roads	m^2	0	55	1.00	1.10	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	529	1.00	1.10	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	289	1.00	1.10	R 0.00
5	Demolition of housing and/or administration facilities	m^2	0	609	1.00	1.10	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	319 431	0.04	1.10	R 0.00
7	Sealing of shaft, audits and inclines	m^3	0	164	1.00	1.10	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0	212 954	1.00	1.10	R 0.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	265 230	1.00	1.10	R 0.00

8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	770 354	0.51	1.10	R 0.00
9	Rehabilitation of subsided areas	ha	0	178 317	1.00	1.10	R 0.00
10	General surface rehabilitation	ha	5	168 695	1.00	1.10	R 927 822.50
11	River diversions	ha	0	168 695	1.00	1.10	R 0.00
12	Fencing	m	0	192	1.00	1.10	R 0.00
13	Water Management	ha	0	64 143	0.17	1.10	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	5	22 450	1.00	1.10	R 123 475.00
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 1 051 297.50
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 1 051 297.50		**Sub Total 1**	R 1 103 862.38

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00	R 66 231.74
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00	-
2	Contingency	10.0% of Subtotal 1	R 110 386.24
		Sub Total 2 (Subtotal 1 plus management and contingency)	R 1 280 480.36
		Vat (15%)	R 192 072.05
		GRAND TOTAL (Subtotal 3 plus VAT)	**R 1 472 552.41**

The 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 1 472 552.00**.

(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 Applicant 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 against the environmental management programme and reporting thereon, including

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

Table 40: 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
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment ➢ Operational Phase	**Socio-Economic Environment / Land Use:** ➢ Temporary loss of agricultural land earmarked for site camp establishment. ➢ Temporary loss of some agricultural land earmarked for invasive prospecting.	➢ Invasive prospecting plan and schedule approved by the DMRE. ➢ Discuss property access with the landowners.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
Invasive Prospecting (Phase 4 & 6):	**Visual Characteristics:**	➢ Parking areas for equipment.	Role:	Applicable throughout operational-, and decommissioning phases.

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
➢ Site Establishment ➢ Operational Phase	➢ Visual intrusion because of site camp. ➢ Visual intrusion because of invasive prospecting.	➢ Good housekeeping practices.	➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> ➢ Contain prospecting to the approved boundaries. ➢ Ensure the camp site and every borehole site has a neat appearance and is always kept in good condition. ➢ Limit vegetation removal and avoid the removal of large trees (>20 cm stem) or vegetation of significance (identified by ECO). ➢ Store prospecting equipment neatly in a dedicated area when not in use. ➢ Implement concurrent rehabilitation as prospecting progress to limit the visual impact on the aesthetic value of the area. ➢ Only strip topsoil immediately prior to the use of a specific area. ➢ Rehabilitate all sites to keep the visual impact on the aesthetic value of the area to a minimum.	➢ Daily compliance monitoring by site management. Annual compliance monitoring of site by an Environmental Control Officer.

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
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment	**Groundcover, Fauna, and Biodiversity Conservation:** ➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564.	➢ Approval by the Minister of DFFE.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Do not conduct prospecting on the farm Hartebeestdale No 564 without the Minister of DFFE's approval.	Applicable throughout site establishment- and operational phases. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impacts	**Groundcover, Fauna, and Biodiversity Conservation:** ➢ Potential negative impact on the identified CBA and/or ESA areas. ➢ Potential negative impact on sensitive/protected flora within the footprint area.	➢ Phase two assessment by qualified ecologist and approval of the drilling plan by the DMRE. ➢ Pre-clearance go-ahead from ECO. ➢ Employee induction meetings.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Arrange additional fieldwork by a qualified ecologist at the selected prospecting sites to refine ecological	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
	➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.		sensitivity and keep prospecting from sensitive areas/plants. ➢ Submit the findings of the ecologist, with the drill plan, to the DMRE for approval prior to commencement. ➢ Clearly demarcate the prospecting boundaries and contain all operations to the approved area. ➢ Declare the area outside the boundaries a no-go area and educate all employees accordingly. ➢ Implement an invasive plant species management plan to control weeds and invasive plants on denuded areas, topsoil heaps and reinstated areas.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**Hydrology:** ➢ 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.	➢ Phase two assessment by qualified hydrologist and approval of the drilling plan by the DMRE. ➢ Visible beacons indicating the boundary of the 40 m buffer areas.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Arrange additional fieldwork by a qualified hydrologist at the selected prospecting sites to refine ecological	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			sensitivity and keep prospecting from impacting watercourses/pans/wetlands. ➢ Submit the findings of the hydrologist, with the drill plan, to the DMRE for approval prior to commencement. ➢ 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. ➢ Should a water use authorisation be applicable, always adhere to the conditions thereof. ➢ Upon closure, remove all prospecting related equipment/machinery from the footprint.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**Air Quality and Noise Ambiance:** ➢ Dust nuisance because of invasive prospecting.	➢ Dust suppression equipment such as a water car (when needed). ➢ Signage that clearly reduce the speed on the access roads.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			Responsibility: ➢ 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). ➢ Ensure continuous assessment of the dust suppression equipment to confirm its effectiveness in addressing dust suppression. ➢ Limit speed on the access roads to 40 km/h to prevent the generation of excess dust. ➢ Minimise areas devoid of vegetation. ➢ Consider weather conditions upon commencement of daily operations. Limiting operations during very windy periods would reduce airborne dust and resulting impacts. ➢ 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). ➢ Implement best practice measures during the stripping of topsoil to minimize potential dust impacts.	

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
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**Noise Ambiance:** ➢ Noise nuisance because of invasive prospecting.	➢ 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.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Ensure that employees and staff conduct themselves in an acceptable manner while on site. ➢ No loud music may be permitted at the site camp and/or prospecting areas. ➢ 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. ➢ Implement best practice measures to minimise potential noise impacts.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Cumulative Impact	**Fauna:** ➢ Potential impact on fauna within the footprint area.	➢ Toolbox talks to educate employees how to handle fauna that enter the work areas.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management.

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
	➢ Fragmentation of ecosystems affecting safe movement of faunal species.		➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Ensure no fauna is caught, killed, harmed, sold, or played with. ➢ Instruct workers to report any animals that may be trapped in the working area. ➢ Ensure no snares are set or nests raided for eggs or young.	➢ Annual compliance monitoring of site by an Environmental Control Officer.
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	**Groundcover, Fauna, and Biodiversity Conservation:** ➢ Infestation of the prospecting areas with invader plant species. ➢ Infestation of the reinstated areas with invader plant species.	➢ Designated team to cut or pull out invasive plant species that germinated on site. ➢ Herbicide application equipment.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ 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	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. Annual compliance monitoring of site by an Environmental Control Officer.

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
			ongoing basis throughout the life of the prospecting activities. ➢ Keep all stockpiles free of invasive plant species. ➢ Control declared invader or exotic species on the rehabilitated areas.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	**Waste Management:** ➢ Potential soil contamination associated with littering and/or hydrocarbon spillages. ➢ Potential impact associated with litter/hdyrocabon spills left at the prospecting area.	➢ Oil spill kit. ➢ Sealed drip trays. ➢ Formal waste disposal system with waste registers.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ 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.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			➢ Provide ablution facilities to all employees. Place the toilet outside the 1:100 year floodline of all watercourses. ➢ 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. ➢ 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. ➢ Clean drip trays after each use. Do not use dirty drip trays on site. ➢ 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. ➢ 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	

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
			resale or for appropriate disposal at a recognized facility. File proof. ➢ 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. ➢ Do not bury or burn waste on the site. ➢ 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.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	➢ Potential impact on areas/infrastructure of heritage or cultural concern.	➢ Results of the heritage walk down prior to commencement. ➢ Visible beacons indicating the boundary of the 30 m buffer areas. ➢ Contact number of an archaeologist and palaeontologist that can be contacted	<u>Role:</u> ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> ➢ Arrange a heritage walk down once the drill sites have been confirmed prior to the commencement of invasive prospecting activities.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
		when a discovery is made on site.	➢ Keep drill sites as close as possible to existing roads to minimise the impact on the landscape. ➢ Avoid focal points on the landscape like rocky outcrops, caves (Kogelbeen Cave), or pans as far as possible as these areas could be sensitive from a heritage point of view. ➢ Avoid burial sites, memorials, and graves with a 30 m buffer zone. ➢ Conduct further palaeontological studies once the impact areas are confirmed. ➢ 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. ➢ 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	

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
			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 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. ➢ Work may only continue once the go-ahead was issued by SAHRA.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase ➢ Decommissioning Phase	**<u>Hydrology</u>** ➢ Erosion of denuded areas. ➢ Erosion of roads, vehicle tracks and/or denuded areas.	➢ Storm water management structures such as berms to direct storm- and runoff water around the work area (when needed).	<u>Role:</u> ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. <u>Responsibility:</u> ➢ Maintain an aquatic impact buffer of 40 m around all watercourses.	Applicable throughout site establishment-, operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			➢ Divert storm water around the topsoil heaps, prospecting areas, roads and/or tracks to prevent erosion. ➢ 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. ➢ Keep clean water clean, and route it to a natural watercourse by a system separate from the dirty water system (if applicable). ➢ Collect dirty water and contain it in a system separate from the clean water system. ➢ Prevent dirty water from spilling or seeping into clean water systems.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**Existing Infrastructure:** ➢ Deterioration of the access road due to prospecting activities.	➢ Grader to restore the road surface when needed.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.	Applicable throughout operational phases. ➢ Daily compliance monitoring by site management. Annual compliance monitoring of site by an Environmental Control Officer.

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
			Responsibility: ➢ Divert storm water around the access road to prevent erosion. ➢ Restrict vehicular movement to the existing access road to prevent crisscrossing of tracks through undisturbed areas. ➢ Repair rutting and erosion of the access road caused as a direct result of the prospecting activities. ➢ Prior to commencement, sign an agreement confirming responsibility towards the movement of employees. ➢ Repair/reinstate damages to fences (by prospecting employees). Compensate losses, due to gates left open by prospecting employees.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**General:** ➢ Health and safety risk posed by invasive activities to prospecting employees. ➢ Safety risk due to uncapped boreholes.	➢ Stocked first aid box. ➢ Level 1 certified first aider. ➢ All appointments in terms of the Mine Health and Safety Act, 1996.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			Responsibility: ➢ Ensure there is adequate ablution facilities and water for human consumption available on site. ➢ Provide workers with the correct personal protection equipment (PPE) as required by law. ➢ Ensure all operations comply with the Mine Health and Safety Act, 1996 (Act No 29 of 1996). ➢ Daily cover drill-holes even if prospecting will continue the following day. Upon closure, seal and cap all boreholes as prescribed in the rehabilitation plan.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**General:** ➢ Presence of prospector negatively affecting safety and security of the property.	➢ Signage restricting entry to the prospecting area. ➢ Toolbox talks regarding safety and security. ➢ Community based discussion forums such as Whatsapp groups.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Screen employees to be appointed prior to inception of contract. ➢ Do not allow employees to reside within the prospecting area.	Applicable throughout operational-, and decommissioning phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			➢ Educate prospecting employees to report suspicious looking person/s and/or matters to site management. ➢ Maintain direct communication between the prospector and the landowners for the duration of the site establishment-, operational, and decommissioning phases.	
Invasive Prospecting (Phase 4 & 6): ➢ Operational Phase	**General:** ➢ Increased fire risk during operational phase.	➢ Fire beaters and -extinguishers. ➢ Toolbox talks and emergency preparedness plan. ➢ Contact number of the fire association/-brigade.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ 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, ➢ Prevent employees from setting fires randomly outside designated areas. ➢ Do not store fuel or chemicals under trees.	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			➢ Do not store gas in the same storage area as liquid fuel. ➢ Designate smoking to specific 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. ➢ 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, ➢ Report any fires noted on site to the responsible SHE rep and/or fire officer. ➢ Implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases. ➢ In the event of large fires ensure that all personnel assemble at a safe assembly point to be transported from site. Inform	

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
			the fire department or local fire watch of the fire to ensure that the fire is brought under control as soon as possible.	
Invasive Prospecting (Phase 4 & 6): ➢ Site Establishment Phase ➢ Operational Phase	**Geology:** ➢ Topsoil Management.	➢ Earthmoving equipment to strip, stockpile and spread the topsoil. ➢ Stormwater control infrastructure. ➢ Designated team to control weeds/invader plant species that may germinate on the topsoil heaps. ➢ Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.	Role: ➢ Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR. ➢ Compliance to be monitored by the independent Environmental Control Officer during the annual environmental audit. Responsibility: ➢ Strip and stockpile the upper 300 mm of the soil before site camp establishment and/or prospecting. ➢ Carefully manage and conserve the topsoil throughout the stockpiling and rehabilitation process. ➢ Ensure topsoil stripping, stockpiling, and re-spreading is done in a systematic way. Plan mining in such a way that topsoil is stockpiled for the minimum possible time. ➢ Place the topsoil heaps on a levelled area within the mining footprint area. Do not stockpile topsoil in undisturbed areas.	Applicable throughout site establishment-, and operational phases. ➢ Daily compliance monitoring by site management. ➢ Annual compliance monitoring of site by an Environmental Control Officer.

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
			➢ 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. ➢ Ensure that topsoil heaps do not exceed 2 m. ➢ Keep temporary topsoil stockpiles free of invasive plant species. ➢ Divert storm- and runoff water around the stockpile area to prevent erosion. ➢ Spread the topsoil evenly, to a depth of 300 m, over the rehabilitated area upon closure of the site. ➢ 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. ➢ 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. ➢ Monitor the rehabilitated area for erosion, and appropriately stabilize if	

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
			erosion do occur, for at least 12 months after reinstatement.	

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

The 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 period 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 FBAR & 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 risk 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 EMPR document and its requirements 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 carrying out their tasks.

- **<u>Site Management:</u>**

  > 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.

- **<u>Water Management and Erosion:</u>**

  > 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.
  > 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.
    - ✓ 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.
> Do not smoke near gas, paints, or petrol.
> 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 **X**
b) the inclusion of comments and inputs from stakeholders and I&AP's **X**
c) the inclusion of inputs and recommendations from the specialist reports where relevant, and **X**
d) that the information provided by the EAP to interested and affected parties and any response by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein **X**

Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

06 May 2024

Date:

3. UNDERTAKING

I,…..*Lionel Koster*…….the undersigned and duly authorised thereto by……*Strata Africa Exploration (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

-END-

APPENDIX A1

REGULATION 42 PROJECT MAP

APPENDIX A2

REGULATION 2(2) PROJECT MAP

APPENDIX B1

LOCALITY AND LAND USE MAP OF APPLICATION AREAS A-E & F-N

APPENDIX B2

LOCALITY AND LAND USE MAP OF APPLICATION AREAS P-W & X-1Q

APPENDIX B3

LOCALITY AND LAND USE MAP OF APPLICATION AREAS 1R-1W & 1W-1Z

APPENDIX B4

LOCALITY AND LAND USE MAP OF APPLICATION AREAS 2A-2H

APPENDIX B5

LOCALITY AND LAND USE MAP OF APPLICATION AREAS 2J-2M

APPENDIX C

REHABILITATION PLAN

APPENDIX D1

PRELIMINARY SITE PLAN – MAHURA MUTHLA NO 198 & MORA SCHUBA NO 201

APPENDIX D2

PRELIMINARY SITE PLAN – KOGELBEEN NO 44

APPENDIX D3

PRELIMINARY SITE PLAN – BANGHOEK NO 17

APPENDIX E

WETLAND / AQUATIC AND TERRESTRIAL DESKTOP SENSITIVITY & FAMILIARISATION

APPENDIX F

HERITAGE DESKTOP ASSESSMENT

APPENDIX G
PROOF OF PUBLIC PARTICIPATION PROCESS

APPENDIX H

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 prospecting activity 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.

ENVIRONMENTAL IMPACT STATEMENT			
FINAL PROJECT PROPOSAL			
TYPE OF IMPACT	**DURATION**	**LIKELIHOOD**	**SIGNIFICANCE**
Site Establishment Phase: ➢ Temporary loss of agricultural land earmarked for site camp establishment. ➢ Visual intrusion because of site camp. ➢ Prospecting within the Rockwood Nature Reserve on the farm Hartebeestdale No 564. ➢ Work opportunities for 15 – 20 community members **(Positive Impact).** ➢ Upgrading of access roads during invasive prospecting **(Positive Impact).**	Duration of site establishment phase (±2-3 months)	**Definite** **Possible** **Low Possibility** **Definite** **Definite**	**Low-Medium Concern** **Low Concern** **Medium-High Concern** **Medium-High (+)** **Low-Medium (+)**
Operational Phase: ➢ Temporary loss of some agricultural land earmarked for invasive prospecting. ➢ Visual intrusion because of invasive prospecting. ➢ Potential negative impact on the identified CBA and/or ESA areas. ➢ 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. ➢ Dust nuisance because of invasive prospecting. ➢ Noise nuisance because of invasive prospecting. ➢ Potential impact on sensitive/protected flora within the footprint area.	Duration of operational phase (Phase 4 & 6)	**LIKELIHOOD** **Definite** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility**	**SIGNIFICANCE** **Low-Medium Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low-Medium Concern**

ENVIRONMENTAL IMPACT STATEMENT			
FINAL PROJECT PROPOSAL			
➢ Potential impact on fauna within the footprint area. ➢ Infestation of the prospecting areas with invader plant species. ➢ Potential soil contamination associated with littering and/or hydrocarbon spillages. ➢ Potential impact on areas/infrastructure of heritage or cultural concern. ➢ Erosion of denuded areas. ➢ Deterioration of access roads due to prospecting activities. ➢ Health and safety risk posed by invasive activities to prospecting employees. ➢ Presence of prospector negatively affecting safety and security of the property. ➢ Increased fire risk during operational phase. ➢ Upgrading of access roads during invasive prospecting **(Positive Impact).**		**Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Definite**	**Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Low-Medium (+)**
Decommissioning Phase: ➢ Safety risk due to uncapped boreholes. ➢ Potential impact associated with litter/hydrocarbon spillages left at the prospected areas. ➢ Erosion of roads, vehicle tracks and/or denuded areas. ➢ Infestation of the reinstated areas with invader plant species. ➢ Return of the site camp and prospected areas to agricultural use **(Positive Impact).**	Duration of decommissioning phase (±2 months)	**LIKELIHOOD** **Low Possibility** **Low Possibility** **Low Possibility** **Low Possibility** **Definite**	**SIGNIFICANCE** **Low Concern** **Low Concern** **Low Concern** **Low Concern** **Medium-High (+)**
Cumulative Impacts: ➢ Reduced ability to meet national conservation obligations and targets should CBA/ESA be affected. ➢ Loss and fragmentation of vegetation communities within the CBA/ESA ecosystems.	Duration of operational phase (Phase 4 & 6)	**LIKELIHOOD** **Low Possibility** **Low Possibility**	**SIGNIFICANCE** **Low Concern** **Low Concern**

ENVIRONMENTAL IMPACT STATEMENT			
FINAL PROJECT PROPOSAL			
➢ Fragmentation of ecosystems affecting safe movement of faunal species. ➢ Compensation of landowners during operational phase. **(Positive Impact)**		**Low Possibility** **Definite**	**Low Concern** **Medium-High (+)**

APPENDIX I
PHOTOGRAPHS OF THE SITE

PHOTOGRAPHS OF THE AREAS IN AND AROUND LOWER KURUMAN NATIVE RESERVE NO 219



MAHEANE VILLAGE NEAR THE APPLICATION AREA



PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND EDGEHILL NO 194






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND ALPHEN NO 442






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND MAHURA MUTHLA NO 198






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND MORA SCHUBA NO 201






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND KUNGKUNG NO 123






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS IN AND AROUND THE SOUTHERN PART OF BOLAND NO 133






PICTURES OF THE APPLICATION AREA

PHOTOGRAPHS OF THE AREAS NORTH OF FARM NO 123 (TOEKOMS)






PHOTOGRAPHS OF THE AREAS SOUTH OF HELVETIA NO 126 AND BRANDZIEKFONTEIN NO 124






PHOTOGRAPHS OF THE AREAS EAST OF HARTEBEESTDALE NO 564 AND KOGELBEEN NO 44

PHOTOGRAPHS OF THE AREAS SOUTH OF BANGHOEK NO 17

APPENDIX J

CV AND PROOF OF EXPERIENCE OF THE EAP