PROPOSED PROSPECTING RIGHT OVER VARIOUS PROPERTIES IN THE NAMAKWA ADMINISTRATIVE DISTRICT OF THE NORTHERN CAPE

FINAL BASIC ASSESSMENT REPORT

AUGUST 2025

DEPARTMENTAL REFERENCE NUMBER:
NC 30/5/1/1/2/14344 PR

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EXECUTIVE SUMMARY

Strata Energy Minerals & Resources (Pty) Ltd applied for a prospecting right and associated environmental authorisation over ±21 217 ha of land situated on the farms Tusschen-In No. 143, Aardvark No. 164, Steenbok No. 165, and Farm No. 166 (Gifkop) in the Namakwa District, Northern Cape. The application targets the prospecting of base and industrial minerals including Copper (Cu), Zinc (Zn), Lead (Pb), Silver (Ag), Lithium (Li), Baryte ($BaSO_4$), Sillimanite-corundum (Al_2SiO_5), Wolframite (W)/Tungsten, and Feldspar (Fsp).

Project Description

The proposed prospecting will be conducted in seven phases over a five-year period and includes both non-invasive (desktop studies, field mapping, geophysical surveys) and invasive (exploratory drilling) components. No bulk sampling will take place, and no permanent infrastructure is required. Temporary site camps will be established on landowner-approved areas using mobile containers and chemical ablutions, all of which will be fully rehabilitated.

Prospecting activities will only advance to invasive drilling upon confirmation of mineralisation during earlier phases. The design and layout of drill sites will depend on the findings of the non-invasive surveys and will be subject to ecological and hydrological review and approval.

Environmental and Social Context

The study area is characterised by grazing lands of rural nature, and sensitive terrestrial and freshwater ecosystems. Baseline studies, remote sensing, and specialist inputs have informed a conservative and environmentally responsible prospecting approach.

Key environmental considerations and mitigation include:

- **Land Use:** The land capability of the earmarked farms are classified as Low used for livestock grazing. The Applicant will engage the landowners regarding Surface Use Agreements in terms of the MPRDA 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 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 Impact:** The area of disturbance is expected to be ±300 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 & 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 have a low impact on the receiving environment.

- **Geology and Soil:** Minrom Consulting (Pty) Ltd (geological consultants) concluded that the proposed PR footprint has reasonable potential for industrial minerals, which are known to occur in the region and on adjacent properties. The Project does not have direct indications for copper or pegmatite mineralisation, as observed in the remote sensing and regional data analysed; however, based on the limitations of the desktop aspects of the study, it is recommended that reconnaissance geological mapping and sampling be performed to directly inspect the potential for industrial minerals and any indications of base or precious metals.

  The identified targets on the earmarked farms were ranked (in descending order of importance) as follows, although the rankings are subjective as most have similar prospectivity:
  1. Tusschen-In No 143;
  2. Steenbok No 165;
  3. Aardvark No 164/1;
  4. Farm No 166 (Gifkop).

- **Hydrology**: EcoFloristix (ecologist) noted that the target areas are outside SWSA's and that there are no wetlands of concern. An unnamed NFEPA river originates within the southwest part of target area 2 on Steenbok No 165, and the majority of Tusschen-In No 143 and a part of the southwestern corner of Steenbok No 165 extends across areas classified as a river FEPA.

  The specialist recommended that the identified drainage lines (Figure 4, 6 & 7) be avoided irrespective of their sensitivity and ecosystem threat status. Presently, an aquatic impact buffer of 32 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 DMPR prior to commencement of invasive activities.

- **Groundcover, Fauna and Biodiversity Conservation**: EcoFloristix notes that it is highly improbable that many of the SCC's would be present within the target areas. The identified ecosystems are listed as Least Concern, and despite the low levels of ecosystem protection, the current extents of these areas are such that they are unlikely to be impacted to any significant degree by prospecting activities.

  The report supports the preference of target areas 2, 3, and 5, since these contain optimum levels of overall sensitivity. The final sensitivity layer created for the terrestrial ecosystems are crucial for planning purposes. It is imperative to avoid sensitive areas wherever possible, particularly those classified as "Very High" sensitivity, to protect the environment and minimize project risks. These layers should be utilized alongside other informative data, such as geological surveys, to pinpoint potential prospecting locations. Furthermore, it's anticipated that additional fieldwork will be necessary at selected prospecting sites (upon approval). This fieldwork will provide essential data for refining ecological sensitivities.

- **Cultural and Heritage Environment (including Palaeontology):** The heritage impact assessment (HIA) concluded that the general landscape is archaeologically rich with a cultural layering dating back to the Stone Age. Due to the great archaeological significance of the landscape, especially relating to the Stone Age, rocky outcrops, hills, and watercourses such as drainage lines and pans should be avoided as significant Middle and Late Stone Age sites are more likely to be found within these topographical features. The adherence of the recommendations within the HIA will however ensure potential impacts to significant heritage resources are minimal. As the first stage of prospecting will consist of non-invasive activities, no impacts will occur at this point of the application and the potential impact on heritage resources is expected to be very low. In conclusion, 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.

  According to the SAHRA Paleontological sensitivity map the study areas are insignificant and of low palaeontological sensitivity and no further studies are required for this aspect however a protocol for finds is required.

- **Site Specific Infrastructure**: Existing farm roads will be used where possible. Any new jeep tracks will be temporary and removed or rehabilitated unless otherwise agreed with landowners. 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.

Alternatives Considered

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

Remote sensing results guided the selection of farm portions with high mineral potential. The entire application area spans five properties, but invasive prospecting will only follow positive confirmation of mineralisation. There are no alternative properties proposed, as the prospecting right is limited to specific cadastral units.

b) Type of activity to be undertaken.

The final project proposal is to prospect the area without bulk sampling using phases that include desktop studies, geological mapping, geophysical surveys, drilling (RC and DD), and (off-site) metallurgical testing.

c) Design and layout of the activity.

The project design is flexible and dependent on earlier phase results. Drill site layouts will be based on areas of high mineral potential as identified through remote sensing. Borehole positions will be reviewed by a qualified ecologist and hydrologist prior to commencement, and no prospecting will occur within sensitive freshwater ecosystems without prior DWS approval. The archaeologist will also comment on the final drill plan to ensure the conservation of areas of cultural and/or heritage importance.

d) Technology to be used in the activity.

The final proposal is that air drills, diamond drill rigs, and geophysical survey equipment (magnetic, gravity, EM) will be used. Laboratory testing will be conducted off-site.

e) Operational aspects of the activity.

The proposed activity is low-impact, temporary, and adaptable. It allows for the flexible use of existing roads and avoidance of sensitive areas. Impacts will be mitigated through rehabilitation, erosion control, and pollution prevention measures.

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 the earmarked areas have a high mineral potential. Therefore, should the no-go option be applied to this application, the areas will most likely see another application by another party within the near future. 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.

Public Participation

The relevant landowners, stakeholders and I&AP's were informed of the prospecting right application by means of an advertisement in the Plattelander, and on-site notices that were placed at conspicuous places. A notification letter inviting comments on the draft Basic Assessment Report (DBAR) (until 20 June 2025) was also distributed. The comments received on the DBAR were incorporated into this report, the final Basic Assessment Report (FBAR), to be submitted to the DMPR for consideration.

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 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 totals R 131 315.28. The Applicant proposes the payment schedule as presented in the following table regarding the financial provision amount:

PHASE	ACTIVITY	TIMEFRAME	PROPOSED REHABILITATION GUARANTEE AMOUNT (ANNUALLY CUMULATIVE)
1	Financial provision payment should the EA Application be approved.	Upon Departmental Request prior to the granting of the prospecting right.	R 65 657.64
2	Payment of Remainder	End Year 1	R 65 657.64
		Total Financial Provision	R 131 315.28

Conclusion

The proposed prospecting right application is supported by environmental and technical assessments. The anticipated impacts are low, site-specific, and manageable with mitigation. The project will not compromise the environmental integrity of the area and will support future land use post-closure. It is recommended that the prospecting right be authorised, subject to additional fieldwork by an archaeologist, ecologist and hydrologist once the final drill locations were determined and the strict implementation of the EMPR.

LIST OF ABBREVIATIONS

Ag	Silver
CARA	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Area
CGS	Council of Geoscience
Cu	Copper
DAEARDLR	Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
DALRRD	Department of Agriculture, Land Reform and Rural Development
DBAR	Draft Basic Assessment Report
DD	Diamond Drilling
DEDT	Department of Economic Development and Tourism
DFFE	Department of Forestry, Fisheries, and the Environment
DMPR	Department of Minerals and Petroleum Resources
DoL	Department of Labour
DRPW	Department of Roads and Public Works
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
FBAR	Final Basic Assessment Report
FEL	Front-end-loader
FEPA	Freshwater Ecosystem Priority Area
Fsp	Feldspar
GPS	Global Positioning System
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
Li	Lithium
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)
NBSP	Namakwa Biodiversity Sector Plan
NCPAERC	Northern Cape Protected Area Expansion Review Committee
NDM	Namakwa District Municipality

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)
NKLM	Nama Khoi Local Municipality
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
PPE	Personal Protection Equipment
PR	Prospecting Right
PSM	Palaeontological Sensitivity Map
RAB	Rotary air blast
RC	Reverse Circulation
RLM	Richtersveld Local Municipality
SAHRA	South African Heritage Resources Agency
SAIIAE	South African Inventory of Inland Aquatic Ecosystems
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
Sn	Tin
SSV	Site Sensitivity Verifications
SWMA	Sub-Water Management Area
SWSA	Strategic Water Source Area
Ta	Tantalum
W	Wolframite
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 Energy Minerals & Resources (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 30/5/1/1/2/14344 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 Energy Minerals & Resources (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 L.

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

(In carrying out the Environmental Impact Assessment Procedure)

Ms Fouché has twenty 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). See a list of past project attached as Appendix L.

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. Tusschen-In No 143 2. Portion 1 of the farm Aardvark No 164 3. Remaining Extent of the farm Aardvark No 164 4. Steenbok No 165 5. Farm No 166 (Gifkop)
Application area (Ha)	21 217.1756 ha
Magisterial district:	Namakwa
Distance and direction from the nearest town	The farm Tusschen-In No 143 is ±46 km north-west of Steinkopf. When travelling west along the R382, turn right (north) from the main road after ±34 km. Farms Aardvark No 164, Steenbok No 165, and Farm No 166 (Gifkop) are ±40 km west to south-west of Steinkopf, and ±47 km east to south-east from Port Nolloth when travelling along the R382.
21 digit Surveyor General Code for each farm portion	1. C05300000000014300000 2. C05300000000016400000 3. C05300000000016400001 4. C05300000000016500000 5. C05300000000016600000

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.

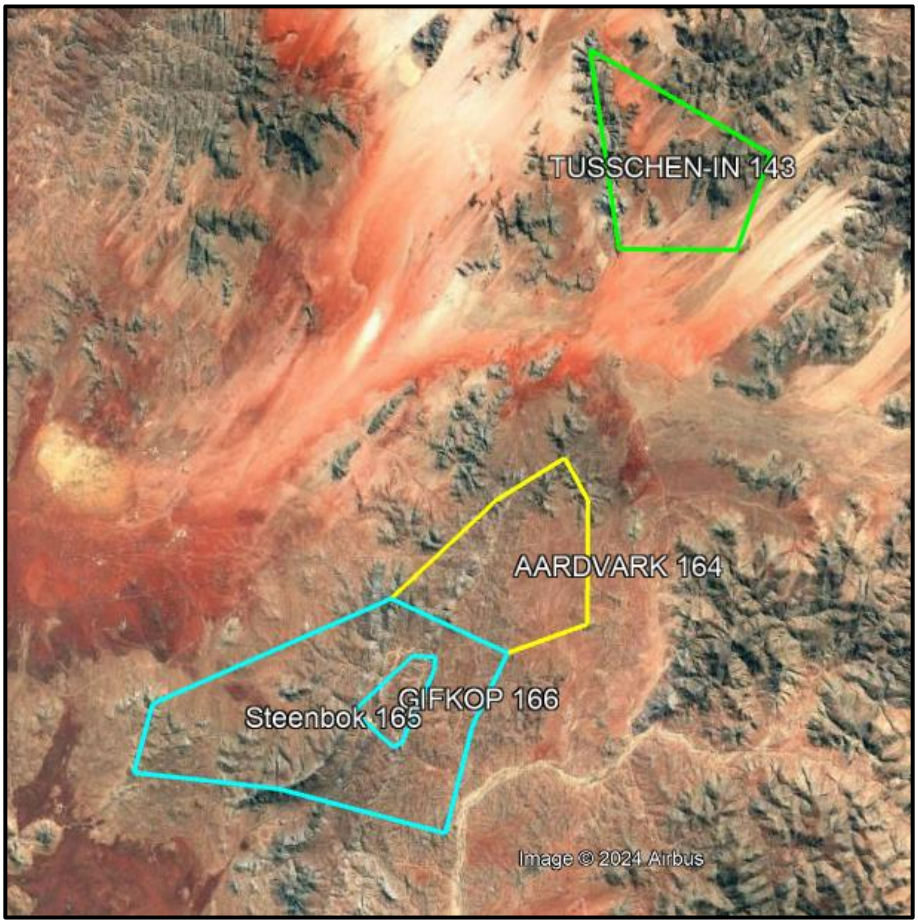


Figure 1: Satellite view showing the proposed prospecting right footprint. (Image obtained from Google Earth).

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.

APPLICATION AREA

The Applicant, Strata Energy Minerals & Resources (Pty) Ltd, applied for a prospecting right (PR) (without bulk sampling), and environmental authorisation (EA) for Copper (Cu), Zinc (Zn), Lead (Pb), Silver (Ag), Lithium (Li), Baryte ($BaSO_4$), Sillimanite-corundum (Al_2SiO_5), Wolframite (W) / Tungsten, and Feldspar (Fsp) over 21 217.1756 ha (hereinafter "±21 217 ha") that extends over the properties listed in Table 1 within the Namakwa Administrative District of the Northern Cape.

Please Note that during the application process the property number of the farm Aardvark was mistakenly typed as number 163 in some documents. The farm description must be Aardvark No 164 as confirmed by the title deeds and GPS Coordinates loaded onto SAMRAD when the application was made. Subsequently, the following documents have been amended and reloaded onto SAMRAD (19 May 2025) to correct the typing error:

- EA Application Form,
- EA Application Appendix 2: Locality Plan,

- EA Application Appendix 3.1: Screening Tool Cover Letter,
- PWP Appendix A1: Regulation 2.2 Project Plan,
- PWP Appendix A2: Regulation 42 Project Plan,
- Regulation 42 Project Plan, and
- Regulation 2.2 Project Plan.

The GIS data utilised in support of the application is accurate; however, it is noted that the farm description was erroneously cited in certain supporting documents. Accordingly, the attention of the Department is respectfully drawn to this matter to ensure that the correct farm number is referenced in future correspondence.

PROPOSED ACTIVITIES

Should the relevant authorisations be granted, and the project commence the principal prospecting activities will entail the following (also refer to Table 4):

- 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 Minerals and Petroleum Resources) 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 2 shows the layout of a typical drill site, and the site sensitivity maps (Figure 4, 6 & 7) highlight the areas where invasive prospecting is dissuaded.

i) Listed and specified activities

Table 2: Listed and specified activities triggered by the proposed 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	Activity 20	GNR 983 Listing Notice 1 of 2014 (as amended)
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 ±300 m^2 each (48 000 m^2 / 3.6 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:	N/A: Non-invasive Prospecting	Activity 20	GNR 983 Listing Notice 1 of 2014 (as amended)

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
Geological Feasibility, Target Selection, Metallurgical Testing and Analysis.			
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 ±300 m² (24 000 m² / 1.8 ha) 33 boreholes of ±300 m² (6 13 200 m² / 1 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	Activity 20	GNR 983 Listing Notice 1 of 2014 (as amended)

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 Copper (Cu), Zinc (Zn), Lead (Pb), Silver (Ag), Lithium (Li), Baryte ($BaSO_4$), Sillimanite-corundum (Al_2SiO_5), Wolframite (W) / Tungsten, and Feldspar (Fsp) over ±21 217 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 proposed prospecting right.

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
A	29°04’21.12”	17°23’49.46”	-29.072533°	17.397072°
B	29°06’59.93”	17°29’01.36”	-29.116647°	17.483711°
C	29°09’24.50”	17°28’04.28”	-29.156806°	17.467856°
D	29°09’23.64”	17°24’40.08”	-29.156567°	17.411133°
E	29°14’41.54”	17°23’03.80”	-29.244872°	17.384389°
F	29°15’45.68”	17°23’44.82”	-29.262689°	17.395783°
G	29°18’55.18”	17°23’44.90”	-29.315328°	17.395806°
H	29°19’39.57”	17°21’25.20”	-29.327658°	17.357000°

NUMBER	DEGREES, MINUTES, SECONDS		DECIMAL DEGREES	
	LAT (S)	LONG (E)	LAT (S)	LONG (E)
J	29°18'16.44"	17°18'00.87"	-29.304567°	17.300242°
K	29°16'36.23"	17°20'04.29"	-29.276731°	17.334525°
L	29°15'46.53"	17°21'05.45"	-29.262925°	17.351514°
M	29°21'30.05"	17°20'23.46"	-29.358347°	17.339850°
N	29°24'16.02"	17°19'35.03"	-29.404450°	17.326397°
P	29°23'05.81"	17°14'45.10"	-29.384947°	17.245861°
Q	29°22'42.23"	17°10'29.33"	-29.378397°	17.174814°
R	29°20'58.53"	17°11'03.14"	-29.349592°	17.184206°
S	29°19'43.96"	17°18'39.61"	-29.328878°	17.311003°
T	29°19'45.12"	17°19'09.46"	-29.329200°	17.319294°
U	29°19'44.97"	17°19'18.73"	-29.329158°	17.321869°
V	29°20'08.35"	17°19'14.99"	-29.335653°	17.320831°
W	29°21'58.43"	17°18'17.24"	-29.366231°	17.304789°
X	29°22'03.90"	17°18'03.59"	-29.367750°	17.300997°
Y	29°21'08.24"	17°16'54.88"	-29.352289°	17.281911°

Also refer to Figure 1 above for a satellite image of the proposed prospecting area in relation to the surrounding landscape.

Should the prospecting right 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	SOURCE
1	**Non-Invasive Prospecting** Desktop Geological Study: Literature Survey / Review (All Farms)	Geologist	Month 1-6	• Geological maps • Mining records • Satellite imagery • Historical exploration data • Satellite imagery (e.g. ASTER, Landsat) • Hyperspectral imaging • Aerial photography
	Purpose	Gather existing geological, geochemical, and geophysical data.		
	Goal	Detect surface mineral alterations or geological structures.		
	Outcome	Initial geological targeting report supported by historical records and existing data.		

<table>
<tr><th>PHASE</th><th>ACTIVITY</th><th>SKILL(S) REQUIRED</th><th>TIMEFRAME</th><th>SOURCE</th></tr>
<tr><td rowspan="4">2</td><td>Non-Invasive Prospecting

Geological Field Mapping (All Farms)</td><td>Geologist & Field Crew</td><td>Month 6-12</td><td>• Fieldwork-based but non-destructive.
• Soil samples.
• Sediment samples.
• Vegetation sampling.</td></tr>
<tr><td>Purpose</td><td colspan="3">Identify rock types, structures, faults, and outcrops.</td></tr>
<tr><td>Goal</td><td colspan="3">Detect trace elements indicating buried mineralization.</td></tr>
<tr><td>Outcome</td><td colspan="3">Detailed geological targeting report accompanied by maps & plans of ground truthing of initial geological targeting.</td></tr>
<tr><td rowspan="3">3</td><td>Non-Invasive Prospecting

Ground Geophysical Survey and Ground Magnetic Survey (All Farms)</td><td>Geophysicist / Geologist / Field Crew</td><td>Month 12-18</td><td>Non-invasive subsurface probing using:
• Magnetic surveys
• Gravity surveys
• Electromagnetic (EM) surveys
• Radiometric surveys
• Seismic methods (passive)</td></tr>
<tr><td>Goal</td><td colspan="3">Identify anomalies or ore bodies.</td></tr>
<tr><td>Outcome</td><td colspan="3">Survey report detailing possible targets for further exploration, report supported by maps, plans & cross sections.</td></tr>
<tr><td rowspan="6">4</td><td>Invasive Prospecting

Exploration Boreholes

(120 RC holes – 200 m each, totalling 24 000 m)</td><td>Geologist / drill rig team / field crew / laboratory technicians.
Geological modelling team</td><td>Month 18-36</td><td>• Samples are sent for assay (chemical analysis).</td></tr>
<tr><td>Core Drilling</td><td colspan="3">Extracts intact rock cores for detailed study.</td></tr>
<tr><td>Reverse Circulation (RC) Drilling</td><td colspan="3">Provides crushed rock chips.</td></tr>
<tr><td>Auger Drilling</td><td colspan="3">Shallow, low-cost method for overburden.</td></tr>
<tr><td>Purpose</td><td colspan="3">Detailed recording of core/chip properties:
• Lithology
• Alteration
• Mineralization</td></tr>
<tr><td>Outcome</td><td colspan="3">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.</td></tr>
</table>

PHASE	ACTIVITY	SKILL(S) REQUIRED	TIMEFRAME	SOURCE
5	**Non-Invasive Prospecting** Geological Feasibility Target Selection Metallurgical Testing and Analysis	Geologist / laboratory technicians / metallurgical specialists	Month 36-42	- Samples sent for assay (chemical analysis).
	Purpose	Lab testing to determine how the ore responds to extraction techniques.		
	Goal	Assess economic viability of the deposit.		
	Outcome	Combine all data to create: - 3D models of the deposit - Resource estimates (e.g. indicated, inferred) - Technical and feasibility reports		
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	- Samples are sent for assay (chemical analysis).
	Outcome	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	- Samples sent for assay (chemical analysis).
	Outcome	Geological and pre-feasibility reports, maps, and plans. Risk assessment study to determine if a full feasibility is warranted.		

Subject to Section 5 of the MPRDA which provides that a holder of a prospecting right may enter a property to conduct prospecting activities, however such prospecting right holder may not prospect for any mineral or commence with any work incidental thereto without giving the landowner or lawful occupier of the land in question at least 21 calendar days' written notice. Landowners will receive such notice and compensation for the temporary access to their land during non-invasive prospecting activities (Phases 1 – 3, 5 ,7). A nominal amount, estimated at ±R 5 000 per month, will be paid to each participating landowner for the duration of access required to their property of these phases. Active non-invasive prospecting on each farm is estimated to occur intermittently over the first 18 – 24 months. Only if the results of the non-invasive exploration are 100% positive will invasive exploration be considered.

<u>Invasive Prospecting</u>

(1) Site Commencement/Establishment Phase

Once the final 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 (±0.2 ha) 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.

Active invasive prospecting on each farm is estimated to occur intermittently over the subsequent 18 – 24 month period, depending on results. Detailed timeframes will be shared with each landowner 21 calendar days prior to any invasive activity. Invasive prospecting activities (Phases 4 and 6) will be subject to a higher compensation rate, with landowners receiving a more substantial amount estimated at ±R 15 000 per month for the duration of the access required for the invasive exploration phase.

- **Clearing of Vegetation**

The proposed footprint of a typical drill site will be ±300 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 (if available) 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 routes will as far as possible avoid sensitive vegetated areas (refer to Figure 4, 6 & 7), watercourses, and cultivated area (if any) and must be approved by the ECO prior to use. Presently the maximum width of a track is expected to be ±5 m.

The R382 crosses through the farm Aardvark No 164. The secondary gravel road to Grasvlakte / Eksteensfontein drives through the farm Tusschen-In No 143, while the road to Wolfberg cuts through the south-western corner of Steenbok No 165. The remaining part of the farm Steenbok No 165 and Farm No 166 (Gifkop) are not traversed by major public roads, and although access is possible via farm roads, the Applicant will need to negotiate access with the applicable landowners prior to invasive prospecting.

Establishment of Site Equipment/Infrastructure

The prospecting activities do not require the use of permanent equipment/infrastructure. A central site camp (with an approximate footprint of 0.2 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.

A maximum of 20 personnel (including geologists, drillers, and support workers) are anticipated at any time. The site camp will not include accommodation and will be used only during daylight hours. It is anticipated that each site camp will be needed for a period of ±2 years.

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

- Chemical toilet,
- Drill rig,
- Refuse bins and bunded area for applicable chemicals,
- Sample laydown area, and
- Small water evaporation sump (<4 m^3).

(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. However, the remote sensing study by Minrom (refer to *Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Geology and Soil*) identified target areas with a reasonable mineral potential for industrial minerals thereby narrowing the areas of interest for invasive prospecting. The occurrence of copper and sulphides can only be determined by ground truthing. Furthermore, soil sampling can only take place once a prospecting right is approved. Thus, it must be noted that the target areas as determined by the Minrom report (i.e., the Remote Sensing report) may differ after ground truthing. To mitigate this, a certain amount of latitude was incorporated in this report by assessing sensitivities beyond the target area boundaries.

The initial planned invasive exploration activities (Phases 4 & 6) 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.

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.

Diamond drilling will be of the standard BQ (60 mm outside diameter) or NQ (75.7 mm outside diameter) size. Down the 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.

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.

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.

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 2: 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 registered local sources (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s). Water sources for drilling and domestic use will be formally confirmed with the landowner prior to commencement of invasive prospecting. No abstraction will occur from farm boreholes or natural springs.

- **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 Minerals and Petroleum Resources (DMPR). 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/shrub 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 DMPR 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 DMPR 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 DMPR 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 (DMPR).

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,*	The mitigation measures proposed for the site includes specifications of the CARA, 1983.

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)
	Groundcover, Fauna, and Biodiversity Conservation.	
Final Revised IDP 2024/2025 Namakwa 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 the IDP of the municipal area.
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 and regulations thereto including relevant OHSA regulations.	Part A(1)(h)(viii) The possible mitigation measures that could be applied on the level of risk – *Management of Health and Safety Risks.*	The mitigation measures proposed for the site includes specifications of the MHSA, 1996
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 30/5/1/1/2/14344 PR.
Namakwa Biodiversity Sector Plan, 2008	Part A(1)(h)(iv)(1)(a) Type of environment affected by the proposed activity – Biodiversity Conservation Areas.	Assessment of biological environment.
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 30/5/1/1/2/14344 PR
National Environmental Management: Air Quality Control Act, 2004 (Act No. 39 of 2004) read together with applicable amendments and	Part A(1)(h)(iv)(1)(a) Type of environment affected by the	The mitigation measures proposed for the project consider the

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)
regulations thereto specifically the National Dust Control Regulations, GN No R827.	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.*	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.
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	Assessment of the cultural and heritage environment (including palaeontology). The mitigation measures proposed for the site includes specifications of the NHRA, 1999.

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)
	section 3(2) of the National Heritage Resources Act.	
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. Part B(1)(d)(iii) Has a water use licence 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.
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
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.

<table>
<tr><th colspan="3">1. SECURING ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES</th></tr>
<tr><th colspan="3"><u>How will this development impact on the ecological integrity of the area?</u></th></tr>
<tr><th>Question</th><th>Response</th><th>Level of Desirability</th></tr>
<tr><td>How were ecological integrity considerations considered?</td><td rowspan="3">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.</td><td rowspan="3">Desirable should the management and mitigation measures be implemented.</td></tr>
<tr><td>How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity?</td></tr>
<tr><td>How were a risk-averse and cautious approach applied in terms of ecological impacts?</td></tr>
<tr><td>How will this development pollute and/or degrade the biophysical environment?</td><td rowspan="2">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 containers reach capacity.

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.</td><td rowspan="2">Highly desirable should the management and mitigation measures be implemented.</td></tr>
<tr><td>What waste will be generated by this development?</td></tr>
</table>

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 (Including Palaeontology).* - *Part (A)(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Cultural and Heritage Environment (Including Palaeontology).* - *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 Surface Use Agreements in terms of the MPRDA 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 access to 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?	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.*	
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		

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 access to 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 separate 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 an unemployment rate of ±20%. The landowners will also receive compensation for access to 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, baryte, sillimanite-corundum, wolframite / tungsten, and feldspar 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 access to 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.

<table>
<tr><th colspan="3">2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT</th></tr>
<tr><th colspan="3"><u>What is the socio-economic context of the area?</u></th></tr>
<tr><th>Question</th><th>Response</th><th>Level of Desirability</th></tr>
<tr><td>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?</td><td>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.</td><td rowspan="3">Desirable should the management and mitigation measures be implemented.</td></tr>
<tr><td>What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</td><td rowspan="2">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.</td></tr>
<tr><td>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?</td></tr>
<tr><td>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</td><td>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;</td><td>Highly Desirable</td></tr>
</table>

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:AQA, 2004 – to ensure air quality related compliance; - 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 and auditing of 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, baryte, sillimanite-corundum, wolframite / tungsten, and feldspar 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 DMPR-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 DMPR 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 DMPR 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

<table>
<tr><th colspan="3">2. PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT</th></tr>
<tr><th colspan="3"><u>What is the socio-economic context of the area?</u></th></tr>
<tr><th>Question</th><th>Response</th><th>Level of Desirability</th></tr>
<tr><td>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</td><td rowspan="2">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.</td><td rowspan="2">Desirable should the management and mitigation measures be implemented.</td></tr>
<tr><td>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.</td></tr>
</table>

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 project proposal 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>

The Applicant applied for a prospecting footprint of ±21 217 ha over the properties listed in Table 1.

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, baryte, sillimanite-corundum, wolframite / tungsten, and feldspar deposits in the Northern Cape, areas known/expected to contain these resources were selected.

Regionally it is known that the Mesoproterozoic Namaqua complex hosts various granitoid rocks dated between 1200 Ma and 1000 Ma. These rocks intruded older Palaeoproterozoic to Mesoproterozoic gneisses and metasediments. Within the Namaqualand belt, the most important mineral deposits (Aggenys and Gamsberg zinc, lead, copper, and silver massive ore bodies) occur in the Bushmanland (see Figure 12). The Prieska and Areachab copper, zinc deposits are located further to the west near the boundary with the Kaapvaal Craton (Figure 11) (Van der Merwe). According to information obtained from the Council of Geoscience (CGS) a total of 33 drill holes have been drilled previously by Anglo American on the farm Tusschen-In No 143. Of the 33 boreholes, 27 holes intersected uranium-bearing rock.

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 study concluded that all the farms are considered prospective for industrial mineralisation or uranium mineralisation. The probability of copper, or pegmatite mineralisation (Sn, Ta, W, Li) is possible although the remote sensing study did not indicate direct target areas as the presence of these minerals need to be determined through ground truthing and soil sampling. Minrom ranked the earmarked farms in the following descending order of importance for prospecting (see Table 17).

1. Tusschen-In No 143;
2. Steenbok No 165;
3. Aardvark No 164/1; and
4. Farm No 166 (Gifkop).

Current Project Proposal

Considering the abovementioned, the remote sensing study confirmed that the properties applied for do have mineral potential and invasive prospecting will most likely focus on the identified target areas of the properties. Remote sensing is however based on regional geology and historical information but does not provide sufficient information to determine the exact minerals or mineralization and this can only be done through physical geological ground proving and thus proposed targets may change once the necessary geological work has been done.

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 3 & 5) of the below listed farms:

1. Tusschen-In No 143;
2. Steenbok No 165;
3. Portion 1 of Aardvark No 164; and
4. Farm No 166 (Gifkop).

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
Tusschen-In No 143	Yes	Yes
Portions 1 of Aardvark No 164	Yes	Yes
Remaining Extent of Aardvark No 164	Yes	Possible
Steenbok No 165	Yes	Yes
Farm No 166 (Gifkop)	Yes	Yes

b) Type of activity to be undertaken

The proposed activity entails prospecting without 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 with 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, without bulk sampling, is ±300 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.

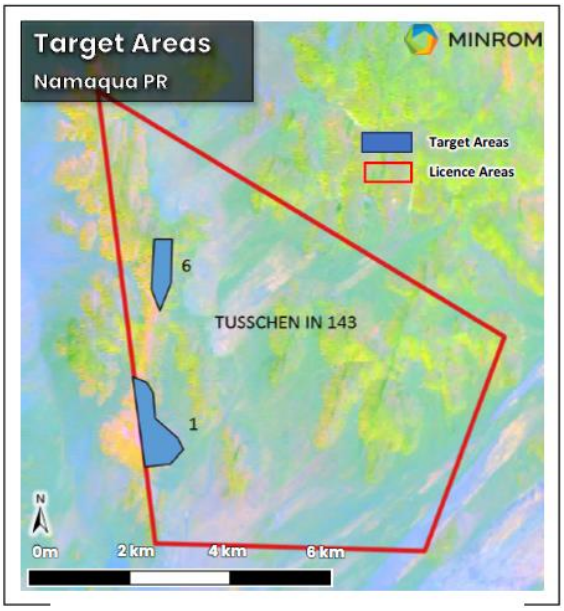


Figure 3: Target area identified through remote sensing on the farm Tusschen-In No 143 (Minrom).

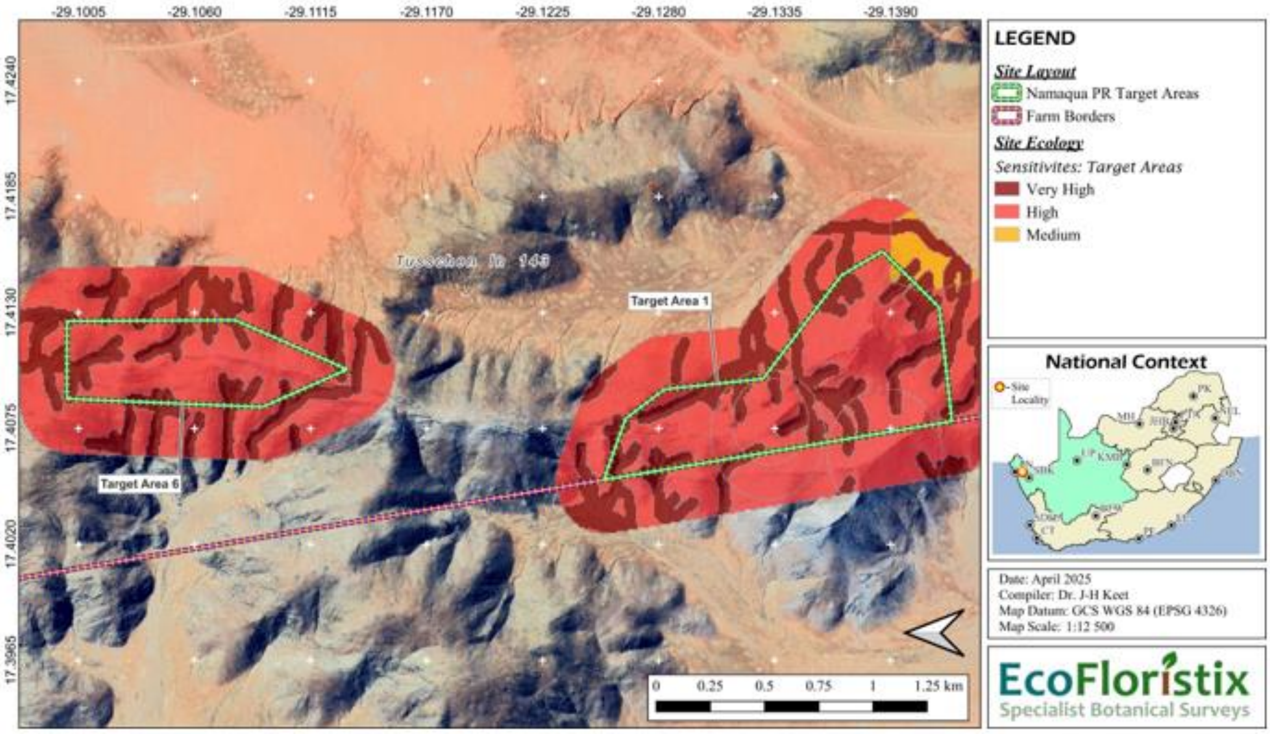


Figure 4: Sensitivities for the target areas identified on the farm Tusschen-In No 143 (EcoFlosristix).

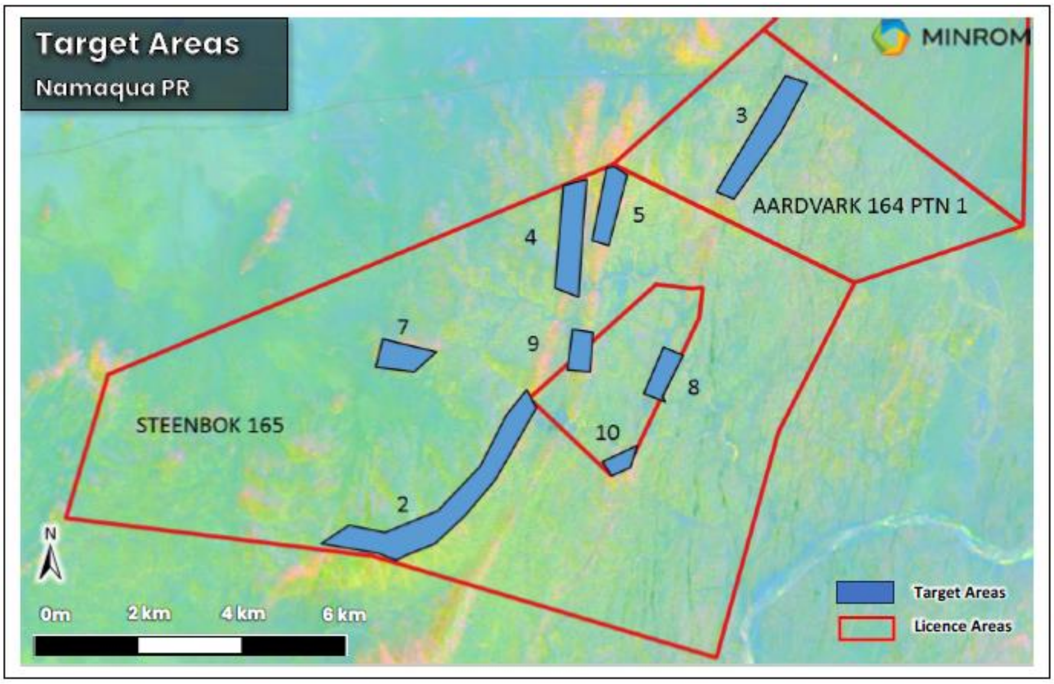


Figure 5: Target area identified through remote sensing on Portion 1 of the farm Aardvark No 164, Steenbok No 165, and Farm No 166 (Gifkop) (Minrom).

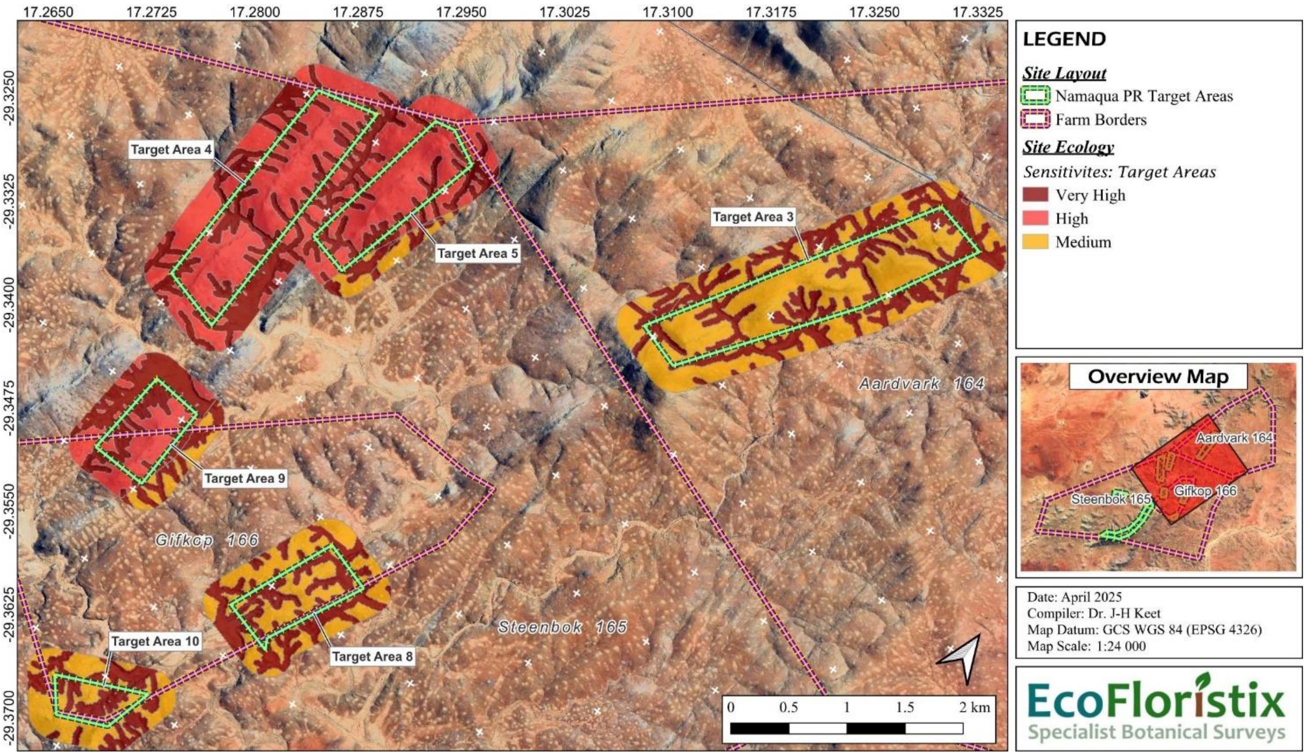


Figure 6: Sensitivities for the target areas identified on the farms Aardvark No 164, Steenbok No 165 and Farm No 166 (Gifkop) (EcoFlosristix).

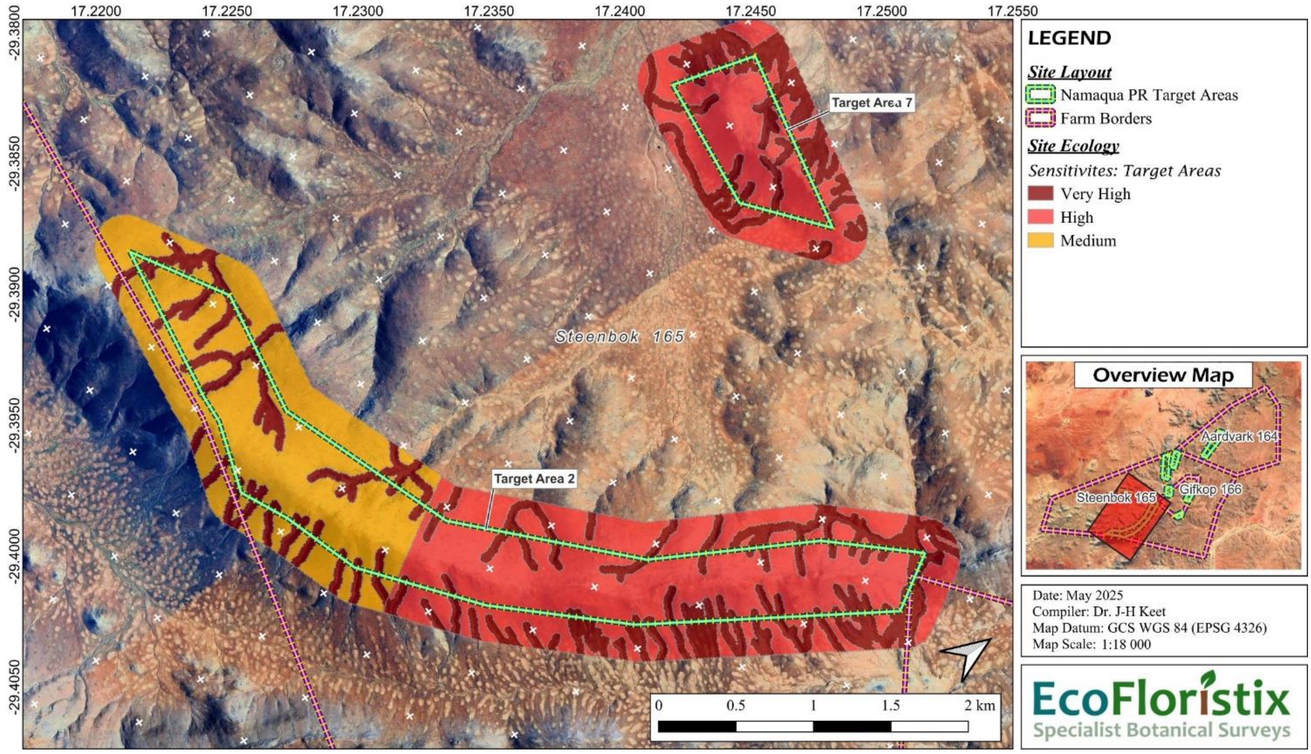


Figure 7: Sensitivities for the target areas identified on the farm Steenbok No 165 (EcoFlosristix).

Current Project Proposal

As mentioned earlier, it must be noted that the target areas as determined by the Minrom report may differ after ground truthing. To mitigate this, a certain amount of latitude was incorporated in this report by assessing sensitivities beyond the target area boundaries.

Furthermore, the ecologist concluded that the final sensitivity layer created for the terrestrial and hydrological ecosystems (as presented above) are crucial for planning purposes. It is imperative to avoid sensitive areas wherever possible, particularly those classified as “Very High” sensitivity, to protect the environment and minimize project risks. These layers should be utilized alongside other informative data, such as geological surveys, to pinpoint potential prospecting locations.

TUSSCHEN-IN NO 143

Based on the mineralisation model, and the results and interpretations from the remote sensing study two target areas were identified on the farm Tusschen-In No 143. The Applicant therefore deems the farm of high importance and invasive prospecting will be highly likely.

The terrestrial sensitivity of the corresponding areas are however of “High” importance, and therefore it's anticipated that additional fieldwork will be necessary at selected prospecting sites. This fieldwork will provide essential data for refining ecological sensitivities.

Subsequently, it is proposed that once the invasive prospecting programme was determined (following non-invasive prospecting) the borehole locations must first be assessed by a qualified ecologist and approved by the DMPR. 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.

REMAINING EXTENT OF AARDVARK NO 164

As remote sensing did not identify target areas on the Remaining Extent of Aardvark No 164, there is only a slight possibility that invasive prospecting will be conducted on this farm. Minerals or mineralization can only be done determined through physical geological ground proving and thus proposed targets may change once the necessary geological work has been done.

Should the need however arise for invasive prospecting borehole locations will first be assessed by a qualified ecologist and approved by the DMPR. 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.

PORTION 1 OF AARDVARK NO 164

Minrom identified one target area on Portion 1 of Aardvark No 164. The Applicant therefore identified the farm of importance for invasive prospecting.

The terrestrial sensitivity of the corresponding area was classified as “Medium”, and therefore it's anticipated that additional fieldwork will be necessary at selected prospecting sites. This fieldwork will provide essential data for refining ecological sensitivities.

Subsequently, it is proposed that once the invasive prospecting programme was determined the borehole locations must first be assessed by a qualified ecologist and approved by the DMPR. 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.

STEENBOK NO 164 AND FARM NO 166 (GIFKOP)

Seven target areas were identified on the two farms, and Minrom rated the farm Steenbok No 165 of high prospective importance.

However, the terrestrial sensitivity of the corresponding areas also range between "High" and "Medium", and therefore it's anticipated that additional fieldwork will be necessary at selected prospecting sites. This fieldwork will provide essential data for refining ecological sensitivities.

Subsequently, it is proposed that once the invasive prospecting programme was determined the borehole locations must first be assessed by a qualified ecologist and approved by the DMPR. 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 was identified.

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

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

However, the reality is that the Northern Cape is known for its mineral riches, and the remote sensing study (by Minrom) showed that some of the earmarked 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 resources 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 district the loss of such opportunities is considered significant.

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

Considering this, it is postulated that if the management and mitigation measures proposed in this report are implemented the environmental risks will be managed and the area will be rehabilitated afterwards that will allow landowners to continue the agricultural use of the prospected areas. The Applicant will also compensate the landowners should invasive prospecting be conducted on their properties.

g) <u>Final Project Proposal</u>

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
Tusschen-In No 143	**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 Aardvark No 164	**YES**	**POSSIBLE**	**NO**	- Non-invasive prospecting, - Possible invasive prospecting (without bulk sampling), - Air drills, geophysical equipment (if invasive prospecting is done). - Management and mitigation measures proposed in the EMPR.
Portion 1 of Aardvark No 164	**YES**	**YES**	**NO**	- Non-invasive prospecting, - Invasive prospecting (without bulk sampling), - Air drills, geophysical equipment, - Management and mitigation measures proposed in the EMPR.
Steenbok No 165	**YES**	**YES**	**NO**	
Farm No 166 (Gifkop)	**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 were informed of the prospecting right application by means of an advertisement in Die Plattelander, and on-site notices that were placed at four conspicuous places (refer to Appendix I2 for proof). A notification letter inviting comments on the DBAR over a 30-days commenting period (ending 20 June 2025) was sent 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 were available in both Afrikaans and English. The comments received on the DBAR were incorporated into this report, the final Basic Assessment Report (FBAR), to be submitted to the DMPR for consideration.

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

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

LANDOWNERS	SURROUNDING LANDOWNERS
Landowner: 1. Mr NB Mulder (care of Mr K Mulder) Tusschen-In No 143 2. Jorrie Dippenaar Trust (care of Mr G & Mrs E Dippenaar) Portion 1 of the farm Aardvark No 164 3. Mr DF Lombard Remaining Extent of the farm Aardvark No 164 4. Oorgangsraad Gebied van Steinkopf (care of Nama Khoi Local Municipality) Steenbok No 164 Farm No 166 (Gifkop)	**Surrounding Landowners and I&AP's:** - Community of Concordia / Nama Khoi Municipality Portion 0 of Steinkopf No 22 - Mr JW Mulder & Me ED Mulder Portion 0 of Langvlei No 576 - Richtersveld Municipality Farguarson No 160 - Seleka Hydro Resources (Pty) Ltd Nama No 161 - Mr NB Mulder (care of Mr K Mulder) Kootjes Vlei No 162 - Arieroep Boerdery CC Ariroep No 163 - Mr E Coetzee Witkoppie No 181 - Yolandy Trust Kaa Vlate No 183 - Oorgangsraad Gebied van Steinkopf (care of Nama Khoi Local Municipality) Remaining Extent of Drooge Kraal No 180 Meidjes Karroo No 179 Portion 1 of Meidjes Karroo No 179 Portion 3 of Meidies Karroo No 179 Nakanas No 171 Breekhoorn No 159

LANDOWNERS	SURROUNDING LANDOWNERS
	Namli Exploration and Mining (Pty) Ltd Prospecting right holder on Steinkopf No 22

STAKEHOLDERS
Commission on Restitution of Land Rights Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (Kimberley) Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (Springbok) Department of Economic Development and Tourism (Kimberley) Department of Economic Development and Tourism (Upington) Department of Labour (Kimberley) Department of Labour (Springbok) Department of Roads and Public Works (Kimberley) Department of Roads and Public Works (Springbok) Department of Water and Sanitation (Kimberley) Department of Water and Sanitation (Upington) Eskom Nama Khoi Local Municipality Nama Khoi Local Municipality Ward Councillor (Ward 8) Namakwa District Municipality National Department of Agriculture, Land Reform and Rural Development Northern Cape Protected Area Expansion Review Committee Richtersveld Local Municipality Richtersveld Local Municipality Ward Councillor (Ward 3) South African Heritage Resources Agency

REGISTERED STAKEHOLDERS/I&AP'S
Mr K Mulder, and SAHRA.

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 I.

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-*	Notice boards were fixed at the following conspicuous and public accessible areas: Port Nolloth Library;

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
(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.* - 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.*	- Turnoff from the R382 onto the Wolfberg gravel road; - Turnoff from the R382 onto the Grasvlakte / Eksteensfontein gravel road; and - Steinkopf Library. The notice boards that were placed complied with the requirements of Regulation 41(3) as presented in Appendix I2. 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*	(i) The Applicant introduced the project to the landowner, who were also invited to comment on the DBAR. The comments received during the commenting period were incorporated into the FBAR. (ii) The directly surrounding landowners, and lawful occupiers of the land were informed of the project and invited to comment on the DBAR. (iii) The two Ward Councillors applicable to the application footprint were invited to comment on the project and DBAR. (iv) Representatives from the local and district municipalities were invited to comment on the project and DBAR: - Nama Khoi Local Municipality; - Richtersveld Local Municipality; - Namakwa District Municipality;

REQUIREMENTS IN TERMS OF NEMA REGULATION 41	PUBLIC PARTICIPATION PROCESS FOLLOWED
organisation of ratepayers that represent the community in the area; *(iv) the municipality which has jurisdiction in the area;* *(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;*	(v) As listed in Table 9 the relevant state departments and entities were invited to comment on the project and DBAR. (vi) Namli Exploration and Mining (Pty) Ltd holds a prospecting right on the farm Steinkopf No 22 that directly surrounds the application area. The PR Holder was invited to comment on the project and DBAR.
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 were advertised in Die Plattelander on 16 May 2025.
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…*	Die Plattelander 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.*	I&AP's not answering their telephones were messaged (via WhatsApp/SMS) 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 was available to landowners, stakeholders and potential I&AP's for perusal and commenting over a 30-days commenting

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.*	period. The DBAR was also available on the Greenmined website. I&AP's and stakeholders were invited to contact the EAP should additional information be required. The comments received on the DBAR were incorporated into this report, 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.**
<u>AFFECTED PARTIES</u>	**X**	-	-	-	-
Landowner/s		-	-	-	-
Mr K Mulder • Tusschen-In No 143 • Kootjes Vlei No 162 (bordering property)	X	16/06/2025	Mr Mulder submitted the following comments regarding the project.	Greenmined responded as follows to the comments received from Mr Mulder.	See following list of references.

Summary of the comments received from Mr Mulder regarding the proposed prospecting right application (refer to Appendix I for the full version):

The landowner acknowledged receipt of information regarding the prospecting right application by Strata Energy Minerals & Resources on the farm Tusschen-in No. 143, and provided background and contextual concerns:

1. Background and Connection to the Land

- The landowner was born in the Richtersveld area in 1949 and has long-standing ties to the region.
- He previously leased a nearby farm (Kouefontein) and later purchased Tusschen-In No 143.
- He has an in-depth knowledge of the local environment, vegetation, wildlife, and the impact of environmental stressors such as drought and wind.
- Despite harsh conditions, he continues to make a living from farming through careful land management.

2. Concerns about Prospecting Activities

- Previous experience with prospecting (by Anglo American) showed that mineral deposits were not economically viable to mine.
- Prospecting areas overlap with grazing land, which becomes unsuitable for livestock during such activities.
- Past prospecting activities led to issues including:

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.

- Alcohol and dagga being supplied to farmworkers.
- Incidents of stock theft.
- Trampling of veld, disturbing land and plant cover.
- Disruption of small game species, which are already under pressure and being protected through fencing and conservation efforts.
- Challenges related to livestock management due to presence of toxic plants and need for rotational grazing.

3. Specific Requests and Clarifications

- More detailed information is needed regarding the proposed campsite (number of workers, site size, and water use).
- Clarification is requested on the duration of prospecting — start and end dates — as an open-ended prospecting timeframe is not acceptable.
- More information is required about water usage and sources during the prospecting period.

4. Broader Concerns about Mining

- If mining proceeds, it will likely spell the end of agriculture in the area.
- Farming and mining are not compatible due to increased crime, pollution, and large-scale land disturbance.

5. Impact on Property Value and Livelihood

- No mention is made of the landowner’s rights or compensation in the current documentation.
- The prospecting and potential mining activities devalue the property, discourage buyers, and jeopardize long-term farming sustainability.
- The landowner requests to know whether any benefit or income is foreseen for him.

6. Willingness to Engage

- The landowner indicates that a meeting may be possible.
- He appreciates constructive feedback and suggestions.

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.**

Greenmined acknowledged receipt of Mr Mulder's comments and arranged a meeting between the Applicant and Mr & Mrs Mulder on 20 June 2025 where the above comments were discussed.

Based on the landowners input and meeting discussions, the FBAR was updated to reflect the following additions and clarifications:

1. Background and Connection to the Land

The historical connection of the landowner to the farm and its surrounding areas were acknowledged in the FBAR. Specific mention was made of the need to incorporate local ecological knowledge into site-level planning and sensitivity assessments.

2. Concerns about Livestock Grazing Interruption

The importance of rotational grazing and veld protection, especially given the region's vulnerability to drought was acknowledged. The FBAR & EMPR now include the following commitments:

- Prior consultation will take place with the landowners before accessing any grazing camps.
- Scheduling of invasive prospecting (Phases 4 & 6) will be done to avoid sensitive times (e.g. lambing or veld recovery).
- Avoidance of any camps identified as high-risk for poisonous plant exposure or overgrazing was proposed.

Once drilling concludes, a joint inspection will be arranged with the landowner to confirm the rehabilitation of each site. Topsoil and plant material will be replaced, and any fencing or infrastructure impacted during operations will be restored.

3. Water Use and 4. Site Camp

Clarifications were added regarding the temporary site camp and water use:

- The site camp will not exceed ±0.2 ha and will accommodate up to 20 personnel during peak phases.
- Water for prospecting will be sourced exclusively from registered commercial providers. No abstraction will take place from your boreholes or natural water sources.

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.

5. Protection of Small Game and Wildlife Corridors

The landowner's proactive conservation measures, including the 14 km jackal-proof fence is acknowledged. The FBAR & EMPR now includes a commitment to:

- Avoid prospecting within known wildlife corridors where physically possible.
- Limit vehicular movement to designated tracks during daylight hours only, to reduce disturbance.

6. Prevention of Misconduct by Workers

The FBAR & EMPR requires annual audits to be conducted by an independent Environmental Assessment Practitioner (EAP). A summary of audit findings will be proactively shared with all affected landowners, and full reports will be made available upon request.

The EMPR explicitly states that:

- All personnel will be prohibited from consuming or possessing alcohol and narcotics on site.
- Firearms will not be permitted.
- No employees may be allowed to reside or stay overnight within the prospecting area unless provided for in the Surface Use Agreement.
- An independent Environmental Assessment Practitioner will annually monitor compliance, and a complaints register will be maintained for immediate issue resolution.

7. Compensation and Long-Term Impact on Property Value

The following compensation framework has been incorporated:

- Non-invasive phases (1 – 3, 5, 7): Landowners will receive a nominal amount of approximately R 5 000/month for temporary access to their land.
- Invasive phases (4 & 6): A more substantial amount of approximately R 15 000/month will be provided for the duration of the on-site exploration.
- These figures are indicative, and final values will be confirmed through a formal Surface Use Agreement signed with the landowner.

8. Duration of Prospecting

The following indicative timeframes are applicable:

- The non-invasive activities (Phases 1 – 3, 5, 7) of this project is expected to take place over ±48 months.

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.**

- The invasive activities (Phases 4 & 6), of this project, if warranted, is expected to span up to 24 months, but only on select areas.
- Also note that a prospecting right is valid for up to 5 years from the date of granting, and it may be renewed once, for a maximum of 3 additional years. The total duration (initial + renewal) may not exceed 8 years.
- All landowners will be informed at least 21 calendar days in advance of any planned invasive activities on their land.

The above listed was confirmed in an email that was sent to Mr Mulder on 02 July 2025.

Refer to the following sections in this report where the issues and/or response were incorporated.

1. Background and Connection to the Land
- Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Groundcover, Fauna and Biodiversity Conservation.
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Mitigating the impacts on floral species and fragmentation of vegetation communities within the CBA.
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Mitigating the Loss of Agricultural Land for Duration of Prospecting.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

2. Concerns about Livestock Grazing Interruption
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Mitigating the Loss of Agricultural Land for Duration of Prospecting.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

3. Water Use
- Part (A)(1)(d)(ii) Description of the activities to be undertaken – Water Use.

4. Site Camp: Number of Workers, Size, Duration
- Part (A)(1)(d)(ii) Description of the activities to be undertaken – Establishment of Site Equipment/Infrastructure.
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Mitigating the Loss of Agricultural Land for Duration of Prospecting.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

<table>
<tr><th>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</th><th></th><th>Date Comments Received</th><th>Issues raised</th><th>EAPs response to issues as mandated by the applicant</th><th>Section and paragraph reference in this report where the issues and or response were incorporated.</th></tr>
<tr><td colspan="6">5. Protection of Small Game and Wildlife Corridors
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Protection of Fauna.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

6. Prevention of Misconduct by Workers
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Management of safety and security risk posed by prospecting activities to residents.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

7. Compensation and Long-Term Impact on Property Value
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Mitigating the Loss of Agricultural Land for Duration of Prospecting.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.

8. Duration of Prospecting
- Part (A)(1)(d)(ii) Description of the activities to be undertaken – Site Commencement/Establishment Phase.
- Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk – Management of safety and security risk posed by prospecting activities to residents.
- Part B(1)(g) – (k) Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon.</td></tr>
<tr><td>Jorrie Dippenaar Trust
- Portion 1 of Aardvark No 164</td><td>X</td><td colspan="4" rowspan="3">No formal comments were received that could be incorporated into the FBAR and EMPR.</td></tr>
<tr><td>Mr DF Lombard
- Remaining Extent of Aardvark No 164</td><td>X</td></tr>
<tr><td>Oorgangsraad Gebied van Steinkopf</td><td>X</td></tr>
</table>

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.
• Steenbok No 165 • Farm No 166 (Gifkop)					
Lawful occupier/s of the land	X	-	-	-	-
Namli Exploration and Mining (Pty) Ltd • Prospecting Right Holder on Steinkopf No 22	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Landowners or lawful occupiers on adjacent properties	**X**	-	-	-	-
Community of Concordia • Portion 0 of Steinkopf No 22	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Mr JW Mulder & Me ED Mulder • Portion 0 of Langvlei No 576	X				
Richtersveld Municipality • Farguarson No 160	X				
Seleka Hydro Resources (Pty) Ltd • Nama No 161	X				
Arieroep Boerdery CC • Arieroep No 163	X				
Mr E Coetzee • Witkoppie No 181	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.**
Yolandy Trust - Kaa Vlate no 183	X				
Oorgangsraad Gebied van Steinkopf - Remaining Extent of Drooge Kraal No 180 - Remaining Extent, Portion 1 and 3 of Meidjes Karroo No 179 - Nakanas No 171 - Breekhoorn No 159	X				
Municipal councillor	**X**	-	-	-	-
Nama Khoi Municipality Ward 8	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Richtersveld Municipality Ward 3	X				
Municipality	**X**	-	-	-	-
Nama Khoi Local Municipality (NKLM)	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Richtersveld Local Municipality (RLM)	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.
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e	**X**	-	-	-	-
Department of Roads and Public Works (DRPW) - Kimberley	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Department of Roads and Public Works (DRPW) - Springbok	X				
Department of Water and Sanitation (DWS) - Kimberley	X				
Department of Water and Sanitation (DWS) – Upington	X				
Eskom	X				
Communities	No communities other than those listed as part of the neighbours were identified within the study area.				
Dept. Land Affairs (Commission of Restitution of Land Rights)	X	17/03/2025	The Commission on Restitution of Land Rights confirmed on 17 March 2025 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	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.
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAEARDLR) - Kimberley	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAEARDLR) - Springbok	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Northern Cape Protected Area Expansion Review Committee (NCPAERC)	X				
Other Competent Authorities affected	X	-	-	-	-
Department of Economic Development and Tourism (DEDT) - Kimberley	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Department of Economic Development and Tourism (DEDT) - Upington	X				
Department of Labour (DoL) - Kimberley	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.
Department of Labour (DoL) - Springbok	X				
National Department of Agriculture, Land Reform and Rural Development (DALRRD)	X	No comments were received that could be incorporated into the FBAR and EMPR.			
Namakwa District Municipality (NDM)	X				
South African Heritage Resources Agency (SAHRA)	X	24/06/2025	SAHRA commented as follows on the project.	Greenmined responded as follows to the comments received from SAHRA.	Refer to Appendix I for proof of correspondence with SAHRA. Part A(1)(h)(viii) The possible mitigation measures that could be applied and the level of risk - Archaeological, Heritage and Palaeontological Aspects.

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.

SAHRA submitted the following comments regarding the proposed project:

"….**Interim Comment:**

The SAHRA DAU notes the submitted Heritage Reports. However, a field-based study must be undertaken to identify no-go areas and areas to avoid. Further comments will be issued upon receipt of the above requested report and a revised DBAR and EMPr that incorporates the results of the specialist assessment. The applicant is advised to extend the EA process in terms of section 19(1)b of the NEMA EIA regulations in order to address this comment…."

Greenmined responded on 01 July 2025 as follows to the SAHRA comments:

"…..We note SAHRA's request that a field-based heritage assessment be undertaken to identify no-go areas and areas to avoid. However, we respectfully submit that the proposed field-based heritage study should be conducted after the approval of the Prospecting Right, but prior to any invasive prospecting, for the following reasons:

1. **The Current Application if for a Prospecting Right, not Mining**

   The proposed activities are limited to prospecting, with the majority of the early-phase work being non-invasive (desktop interpretation, remote sensing, surface mapping).

   The field-based study will specifically inform site selection for invasive activities (e.g., drilling), which are only triggered during later phases and on a far more limited footprint. At this stage, exact drilling locations cannot yet be confirmed, making it impractical and inefficient to conduct a field-based heritage survey over the entire application area (~21,217 ha).

2. **Field-based Study is Already Committed to in the DBAR**

   The submitted DBAR and EMPr already make explicit provision for a detailed field-based heritage study to be undertaken prior to any invasive prospecting. This requirement is listed as a mandatory pre-condition to the commencement of Phase 4, and the results will directly inform:
   - Site-specific no-go areas,
   - Avoidance measures,
   - Mitigation actions, and

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.

- Prospecting layout adjustments.

3. Environmental Authorisation Conditions Can Secure Compliance

Should the competent authority (DMPR) grant the Environmental Authorisation, it is proposed that the requirement for a field-based heritage study be included as a condition of the Environmental Authorisation.

This would ensure regulatory enforcement and that no invasive activity may commence unless the following has occurred:

- Completion of the heritage field survey,
- Submission of the findings to SAHRA, and
- Incorporation of mitigation measures into the final drill plan.

4. Resource Efficiency and Best Use of Specialist Input

Conducting a field-based survey over such a large area, in the absence of confirmed focus zones for drilling, is not only cost-prohibitive but may also result in duplicated or wasted effort. Delaying the fieldwork until after right approval, but before site disturbance, allows the specialist to focus precisely on those portions of the site where disturbance is proposed — as defined by the confirmed exploration plan.

5. Alignment with National Practice for Prospecting Applications

The proposed approach aligns with national norms and current practice for prospecting applications, where field-based heritage studies are most commonly required prior to ground disturbance, rather than prior to right approval.

Formal Undertaking

To formally support this approach, a signed undertaking by the Applicant is appended to this response, confirming that:

- A field-based heritage impact assessment will be commissioned prior to any invasive prospecting.
- The findings of the study will be submitted to SAHRA for review and approval before any ground disturbance.

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.
• All recommendations and no-go areas identified by the specialist will be fully incorporated into the final drill plan to be submitted to the DMPR for approval and implemented on site. **In Summary** In light of the above, we respectfully request that SAHRA allow for the field-based heritage study to be undertaken following the approval of the Prospecting Right, but prior to the commencement of invasive prospecting activities, as already committed to in the BAR and EMPr. We remain fully committed to ensuring compliance with the National Heritage Resources Act (Act 25 of 1999) and to working in close consultation with SAHRA throughout the process. This correspondence, SAHRA's response hereto (if received prior to submission of the Final BAR & EMPR to the DMPR), as well as all future heritage-related work to be undertaken, will also be shared with the DMPR for their records and consideration. We kindly request SAHRA to consider this proposal and provide us with a response by 15 July 2025 as the final BAR & EMPR need to be submitted to the DMPR on or before 25 July 2025. Should no response be received from SAHRA by 15 July 2025, it will be assumed that the proposed approach has been accepted, unless otherwise indicated."				
SAHRA subsequently responded as follows: "The SAHRA DAU acknowledges receipt of the The Letter of Undertaking from the EAP and the Applicant. However, the Interim Comment issued 24/06/2025 is upheld. A field-based assessment must be conducted to identify no-go areas and areas to avoid. Further comments will be issued upon receipt of the above requested report and a revised BAR and EMPr that incorporates the results of the specialist assessment. The applicant is advised to extend the EA process in terms of section 19(1)b of the NEMA EIA regulations in order to address this comment."				
Greenmined discussed the comments of SAHRA with the DMPR and extension for submission of the final BAR & EMPR was granted until 29 August 2025. Beyond Heritage was appointed to conduct the required field assessment, and the findings of the study was incorporated into this report that will be shared with SAHRA for their perusal. Any additional comments that may be received from SAHRA will be shared with the DMPR. Refer to *Part A(1)(h)(iv)(1)(c) Description of specific environmental features and infrastructure on the site – Site Specific Cultural and Heritage Environment (including Palaeontology)* for the findings of the HIA field assessment.				

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.**
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

Namakwa Administrative District – Steinkopf

The long-term average annual rainfall of Steinkopf is ±77 mm of which the bulk is received between May – August. Temperatures vary from an average monthly maximum and minimum of 30°C and 16°C in January to 18˚C and 7˚C in July respectively. The highest temperature that has been recorded is 37˚C and the lowest 1˚C.

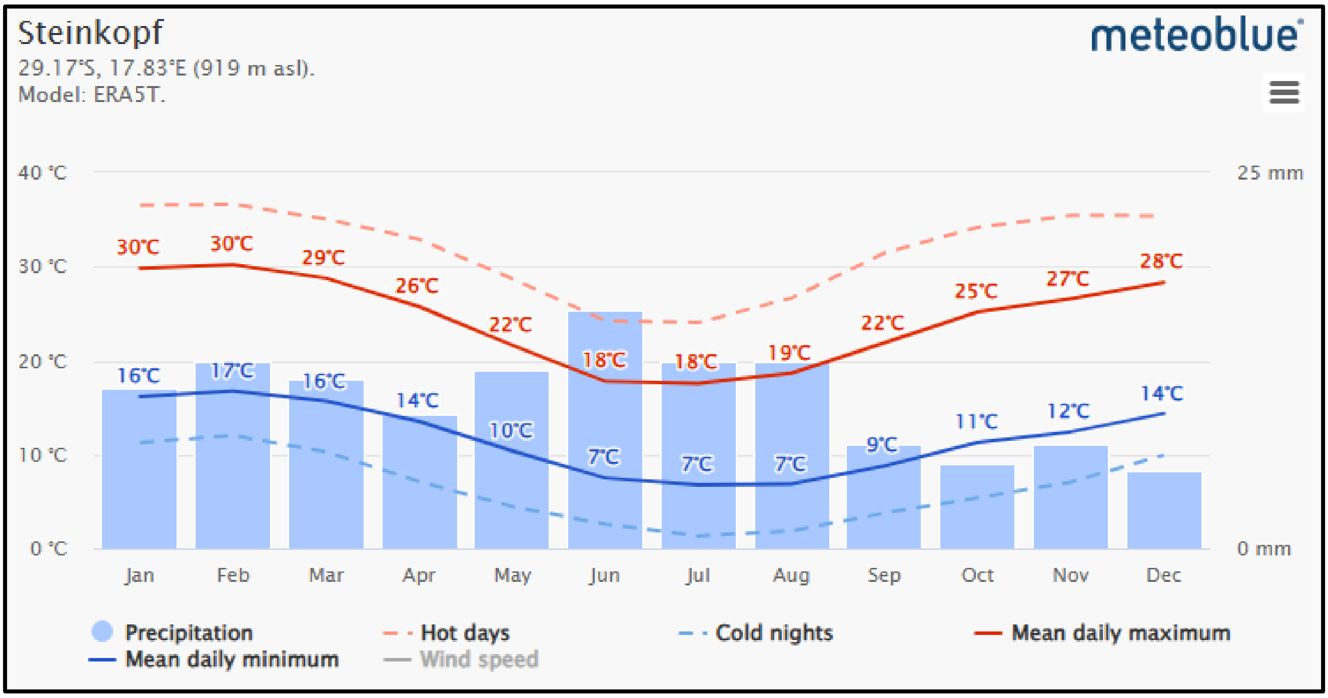


Figure 8: Average temperatures and precipitation for Steinkopf (image obtained from https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/steinkopf_south-africa_3361032).

According to the Windfinder website the nearest station to record wind data of the area is the Springbok weather station. According to this station the prevailing wind direction of the area is in a north/north-eastern direction during the summer months. During winter the wind is mostly in a southern direction. The average wind speed of the area is ±9 knots (±16.7 km/h) as shown in the figure below (measured at the Springbok Airport).

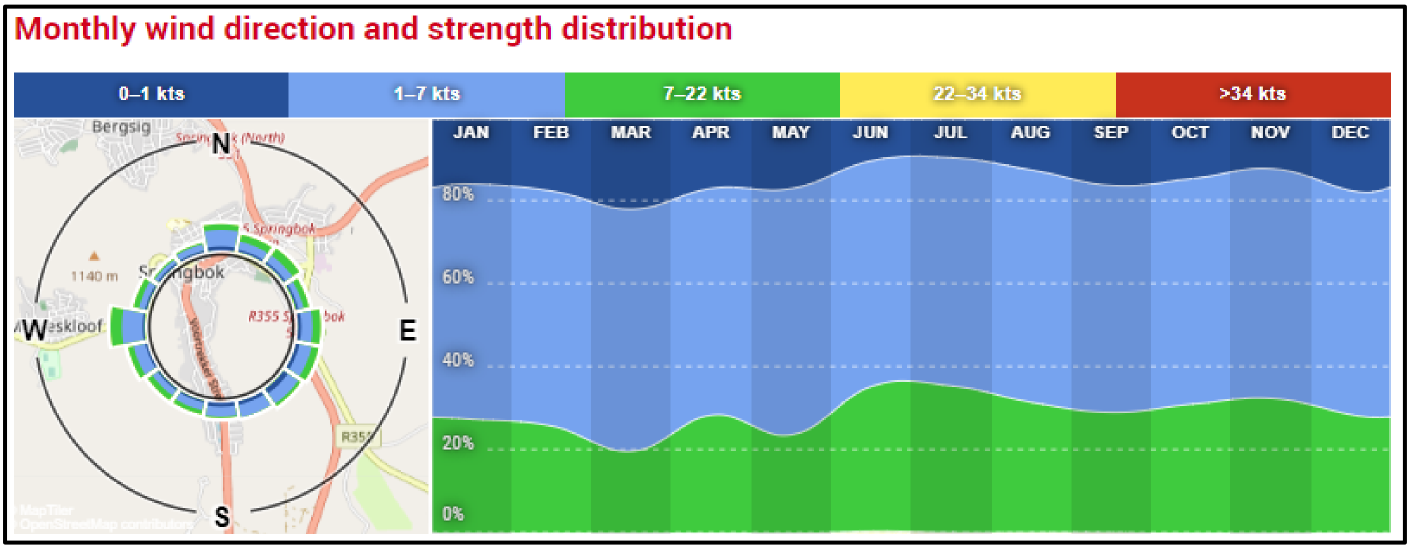


Figure 9: Image showing the dominant wind direction (first panel) and average wind speed over a 12 month period for the Springbok area (image obtained from http://www.windfinder.com/windstatistics/springbok).

TOPOGRAPHY

The greater Steinkopf – Port Nolloth area is characterized by a varied and rugged topography transitioning from inland escarpments to coastal plains. Inland areas around Steinkopf exhibit an undulating to mountainous terrain, dominated by inselbergs, ridges, and scattered koppies formed from resistant granitic and metamorphic rocks of the Namaqua Metamorphic Province. Elevations in this interior zone typically range from 600 to over 1 000 metres above sea level.

Moving westward toward Port Nolloth and the Atlantic Ocean, the landscape becomes increasingly subdued, giving way to low-lying, gently sloping coastal plains. These plains are punctuated by rocky outcrops and ancient marine terraces. The coastal zone itself is generally flat and lies below 200 metres above sea level, with sandy and gravelly substrates often associated with aeolian and marine sediments.

As evident in the following figure, the topography of the greater study area gradually rises from the farms Steenbok No 165 and Farm No 166 (Gifkop) (±200 mamsl) towards the north where the hills on the farm Tusschen-In No 143 farms (±566 masml) is shown in red in the following figure.

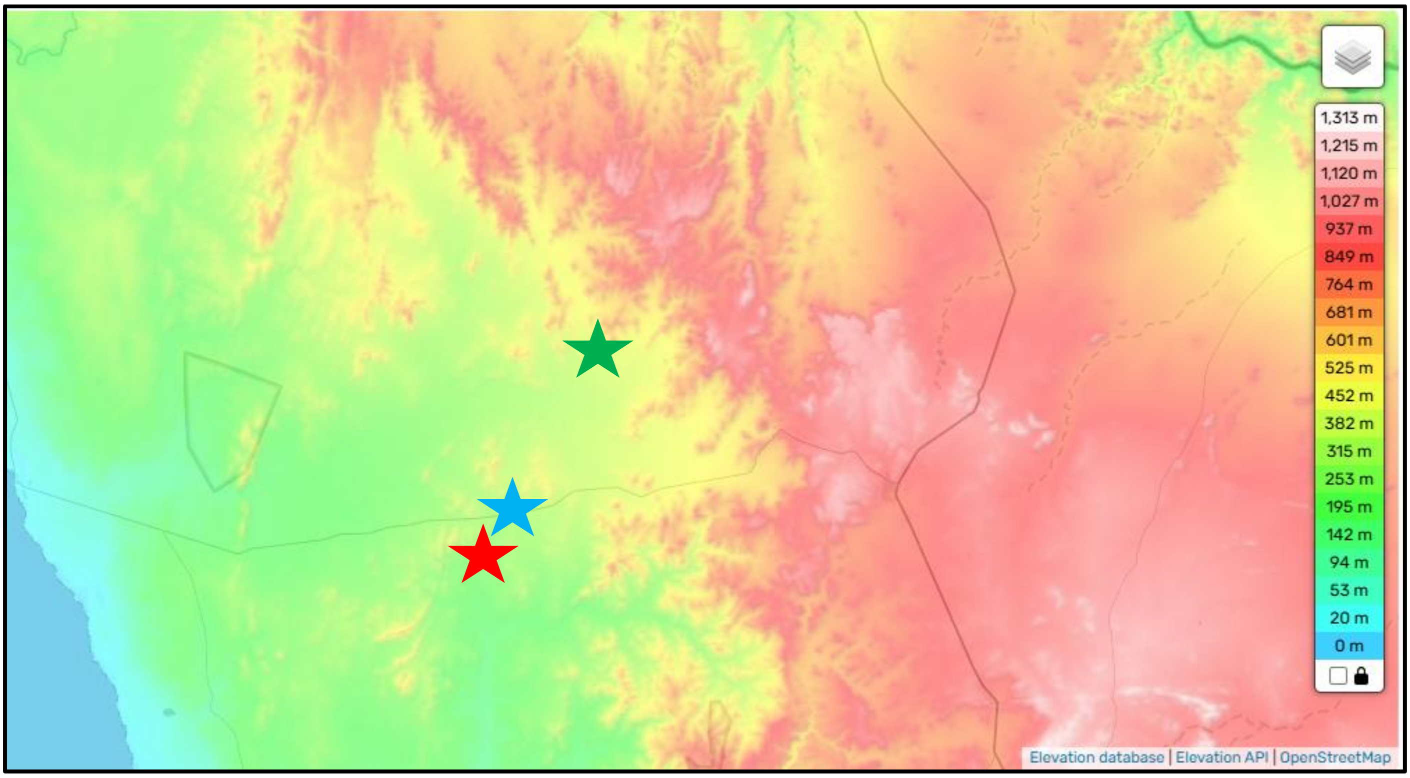


Figure 10: Map showing the topography of the greater study area where the red star indicates the application area on the farms Steenbok No 165 and Farm No 166 (Gifkop), the blue star shows the farm Aardvark No 164, and the green star is representative of the farm Tusschen-In No 143 (image obtained from https://en-za.topographic-map.com/map-6m7zs/South-Africa/?center=-27.62514%2C23.74695&zoom=9).

VISUAL CHARACTERISTICS

The landscape of the greater study area is distinctly arid and semi-desert in character, typical of the broader Namaqualand region. The terrain is predominantly gently undulating to flat, punctuated by low rocky ridges, outcrops, and isolated koppies composed of weathered granite and gneiss. The surface cover includes gravel plains, patches of sandy soils, and occasional exposed bedrock.

Vegetation is sparse but visually striking during seasonal flowering periods, especially following rare winter rains. The area falls within the Succulent Karoo Biome, resulting in a generally low-growing, scattered shrubland appearance dominated by hardy succulents, dwarf shrubs, and occasional grasses. Isolated quiver trees (Aloe dichotoma) or other distinctive desert flora may break the horizon.

The visual palette is typically muted, with dominant tones of brown, beige, grey, and dusty green, contrasted by the occasional bright greens or floral colours during spring.

Human infrastructure is minimal, lending the area a remote and vast, open visual quality, often with expansive views toward distant ridgelines and a wide, open sky.

GEOLOGY AND SOIL

1. INTRODUCTION

The Mesoproterozoic Namaqua complex hosts various granitoid rocks dated between 1200 Ma and 1000 Ma. These rocks intruded older Palaeoproterozoic to Mesoproterozoic gneisses and metasediments.

Within the Namaqualand belt, the most important mineral deposits occur in Bushmanland (following figure) of the Northern Cape Province (Aggenys and Gamsberg zinc, lead, copper, and silver massive ore bodies). The Prieska and Areachab copper, zinc deposits are located further to the west close to the boundary with the Kaapvaal Craton (following figure).

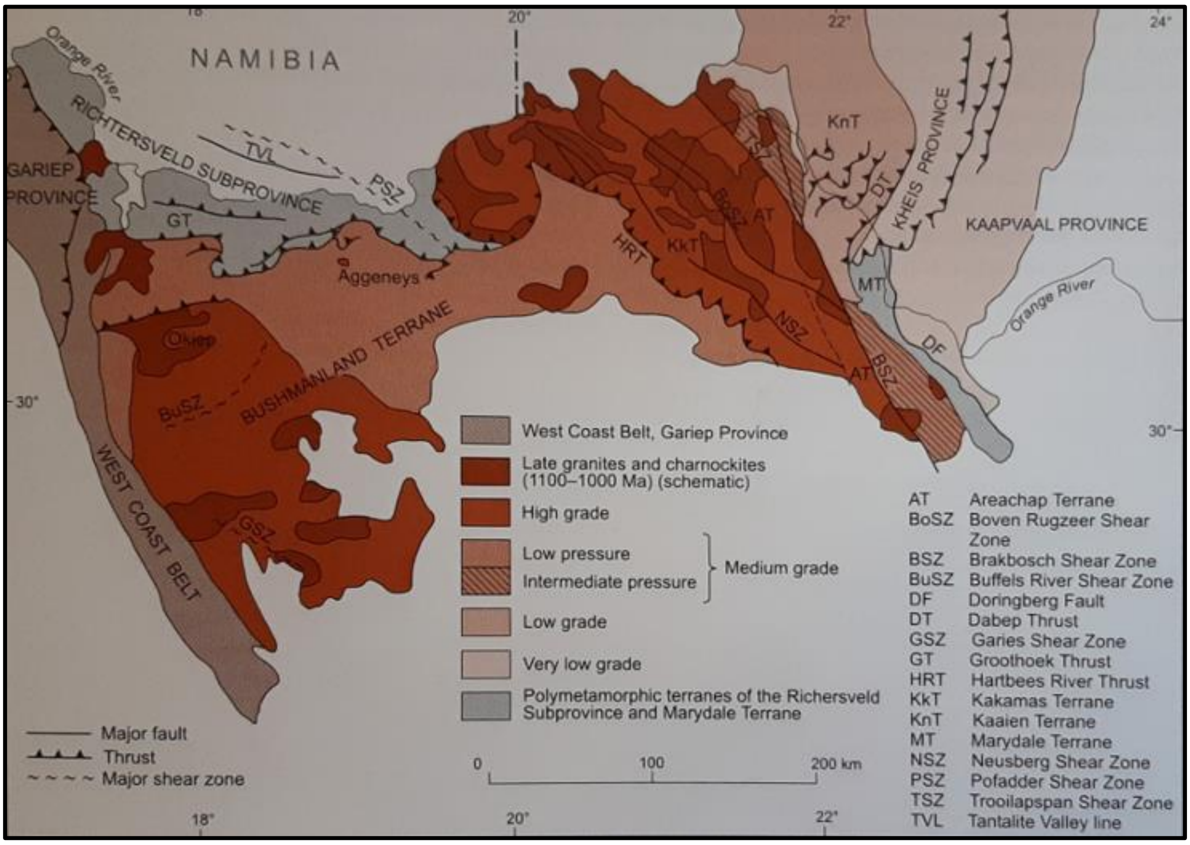


Figure 11: Metamorphic map of the Namaqua Sector and adjoining regions (modified after Saggerson and Turner, 1992. Low, medium, and high grades are equivalent to greenschist, amphibolite and granulite facies, respectively. An amphibolite facies region is now also recognized in the extreme southern Bushmanland Terrane (Raith et al.,2003).

Granite intrusions and high-grade metamorphism in Bushmanland have resulted in the formation of numerous corundum sillimanite ore bodies. Muscovite, spodumene as well as tungsten and tin (Sn) have been mined from two pegmatite belts in the province. Low grade uranium is common in granites, pegmatites, and younger sediments.

A younger event in the metallogenic evolution of this sub province was the emplacement into characteristic “steep structures” at about 1100 Ma, of copper bearing noritoid bodies of the O’okiep district. As ancient copper mining occurred in Namaqualand, it is also the site of the earliest modern mining in South Africa in the mid nineteenth century.

2. THE NAMAQUA-NATAL PROVINCE

The early evolution of the Namaqua-Natal Province in the Namaqua Sector is inextricably linked to Kheisian events which took place between 2000 and 1600 Ma. The assemblance of pre-Namaqua crustal domains was most probably welded together during the Kheisian orogenic event at 1700 Ma into a coherent continental fragment in the west, the ‘’Bushmanland craton’’, made up of the Richtersveld Sub province and the basement to the Bushmanland Terrane and probably the Kakamas Terrane.

2.1 Rifting and Ocean Basin Development

A comparison of dated events in three regions of the Namaqua-Natal Province, shown in the following figure, documents the common features related to this Wilson cycle. It commenced with rifting of the Bushmanland craton and Kheis-Kaapvaal craton at about the time between 1600 Ma and 1350 Ma. Rifting in the thicker crustal domains of Bushmanland gave rise to extensional intracratonic basins in which supracrustal sequences, such as the Bushmanland and Korannaland Groups, were deposited. To the east, early Namaqua rifting split the Kaapvaal-Kheis craton so that a major Areachap Ocean basin was initiated. Prior to the development of this ocean, the Bushmanland and Kaapvaal-Kheis cratons most probably occupied various parts of the globe.

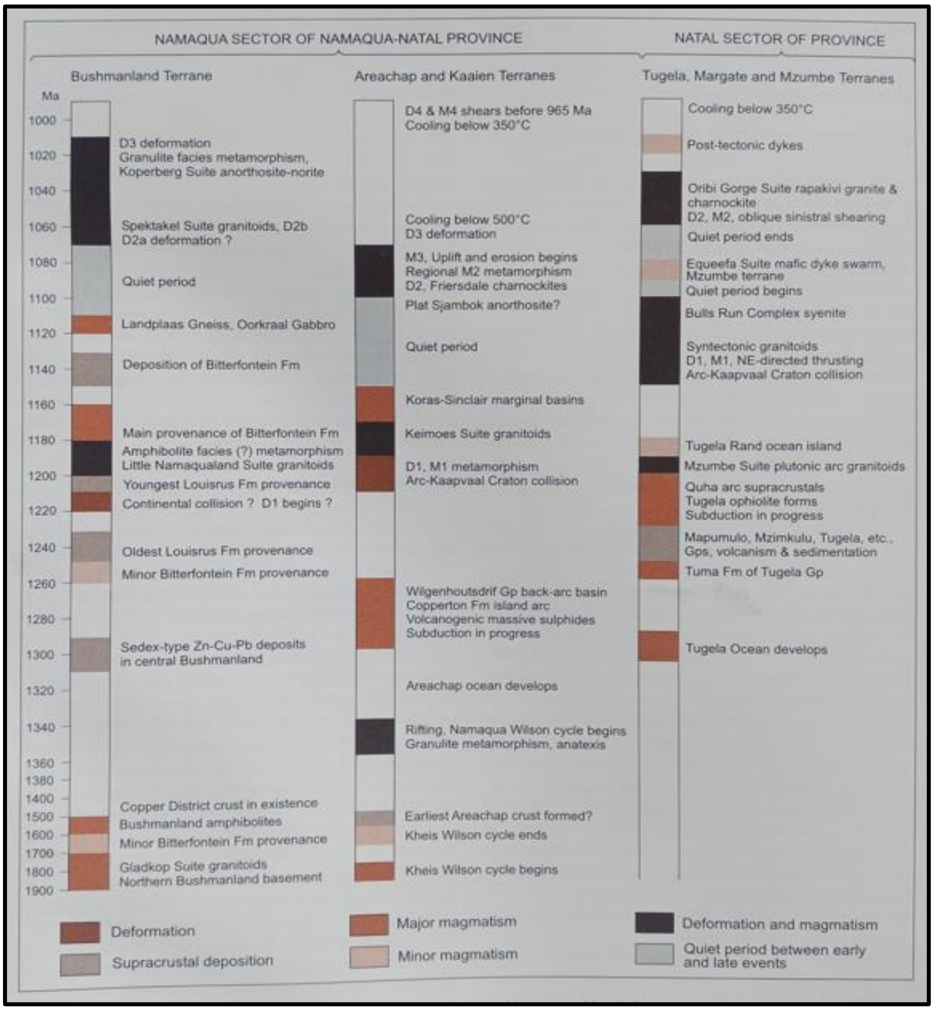


Figure 12: Comparison of dated events in three regions of the Namaqua-Natal Province (modified after Raith et al,.2003). The Bitterfontein and Louisrus Formations are regarded as part of the Bushmanland Group.

2.2 <u>Subduction and Island Arch Development</u>

Following the early rift phase, the juvenile Namaqua-Natal terranes followed comparable evolutionary paths. The continental extensional-depositional regime and envisaged oceanic see-floor spreading regime was superceded at about 1300 Ma by a prolonged period of SW-NE directed plate convergence that led to subduction of the Tugela-Areachap Ocean and the growth of volcanic arcs between 1300 and 1200 Ma.

2.3 <u>Early Namaqua Collisions</u>

The convergent phase culminated in the main Namaqua orogenic events between 1220 and 1150 Ma. In Namaqualand, the collision occurred between the Bushmanland Craton (and its Namaquan supracrustal cover) from the southwest and the Kaapvaal-Kheis cratonic block to the northeast, with the Areachap arcs sandwiched between the two.

The collisions in both sectors caused intense deformation (following figures), medium to high-grade metamorphism, widespread deep crustal melting, and generation of voluminous pre- and syntectonic granitoid magmas, which were emplaced between 1200 and 1150 Ma throughout the entire province.

Figure 13: Structures in Rosyntjieberg Formation quartzites, exposed in the west wall of the Orange River canyon.

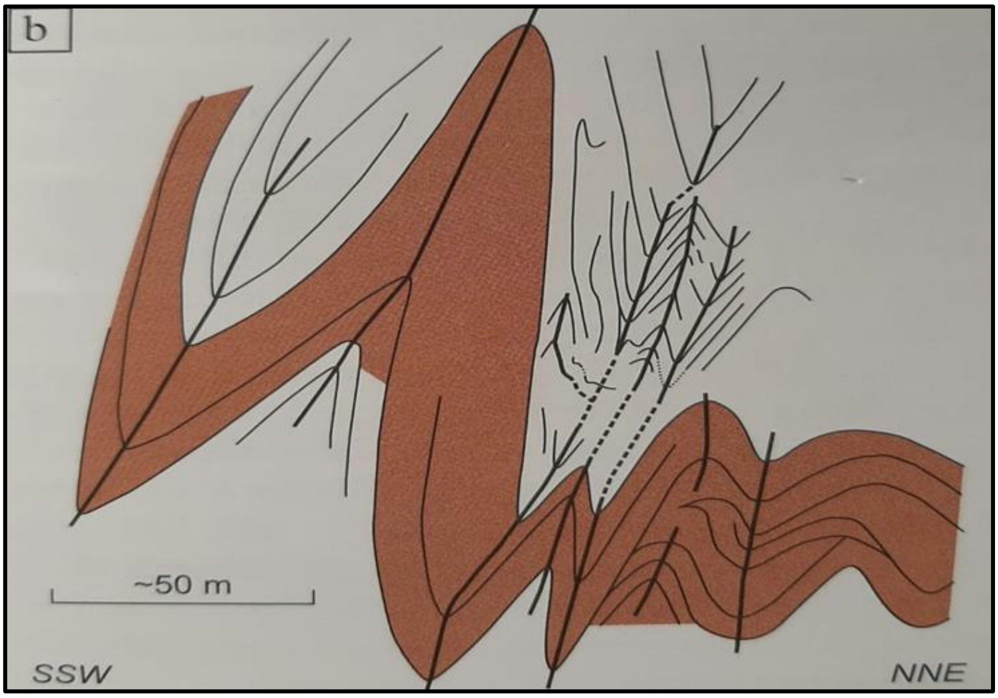


Figure 14: Sketch of the folds by Ritter (1980).

2.4 Dormant Period

Following the deformation and magmatism related to collision, a geochronogically quiet period of about v100 Ma affected each region of the province, with considerable variations in timing as shown in Figure 12.

2.5 Late Namaqua Tectonothermal Event

SW-NE plate convergence may have continued during the geochronogically quiet period, to a point when no more crustal shortening could be accommodated by low-angle thrusting and crustal thickening so that, by about 1080 Ma, an oblique strike-slip (lateral escape) regime was initiated.

In all regions of the province, the crustal-scale transcurrent shear zones may have provided the conduits for the extraction of deep crustal melts and emplacement of voluminous A-type granitoids with rapakivi granite-charnockite affinities (Friesdale Charnockite, Spektakel and Orbi Gorge suits).

This was followed by low-pressure, elevated temperature metamorphism between 1080 and 1020 Ma in various parts of the province.

2.6 End of the Namaqua Orogeny

The long-lived NE-SW convergence, which characterized the Namaqua-Natal Orogeny, terminated at about 1000 Ma and the present levels of exposure in the whole province had been upthrust and cooled down to 350°C by about 950 Ma.

3. THE BUSHMANLAND TERRANE

The Bushmanland Terrane is the largest crustal block in the Namaqua sector, covering some 60 000 km². Its northern boundary against the Richtersveld Sub Province is defied by the Groothoek Thrust and Wortel Belt. The eastern boundary against Kakamas Terrane is along the Hartebees River Thrust (following figure).

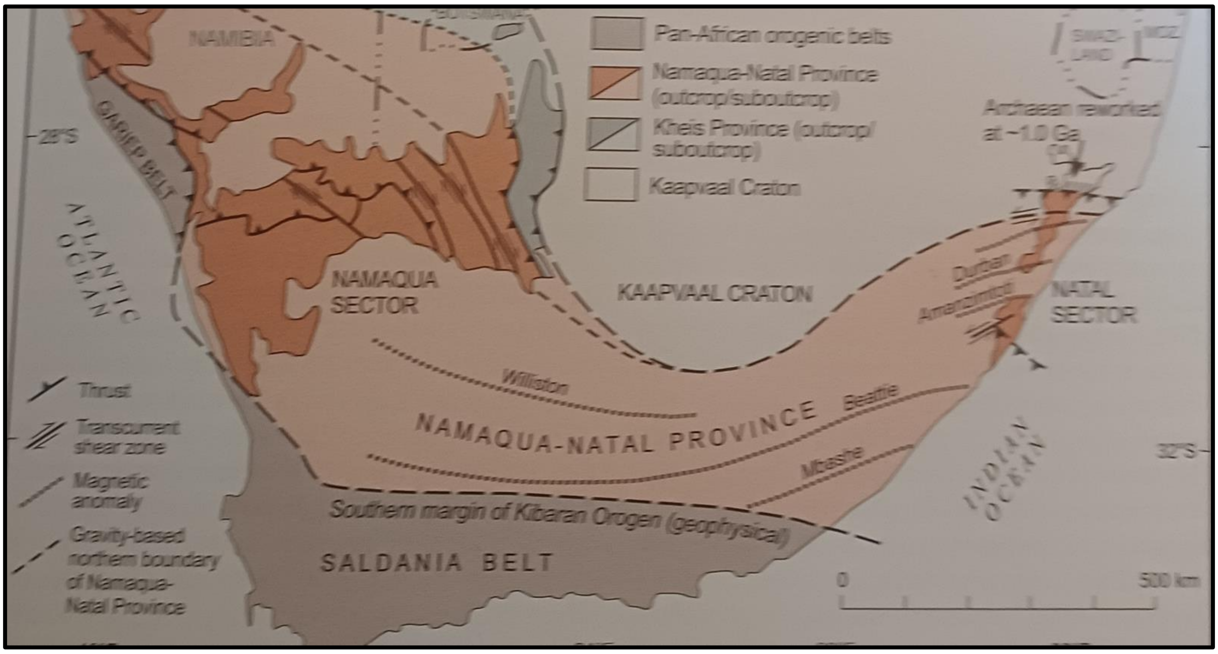


Figure 15: Geological setting of the Namaqua-Natal Province. Geophysical boundaries by De Beer and Meyer (1984).

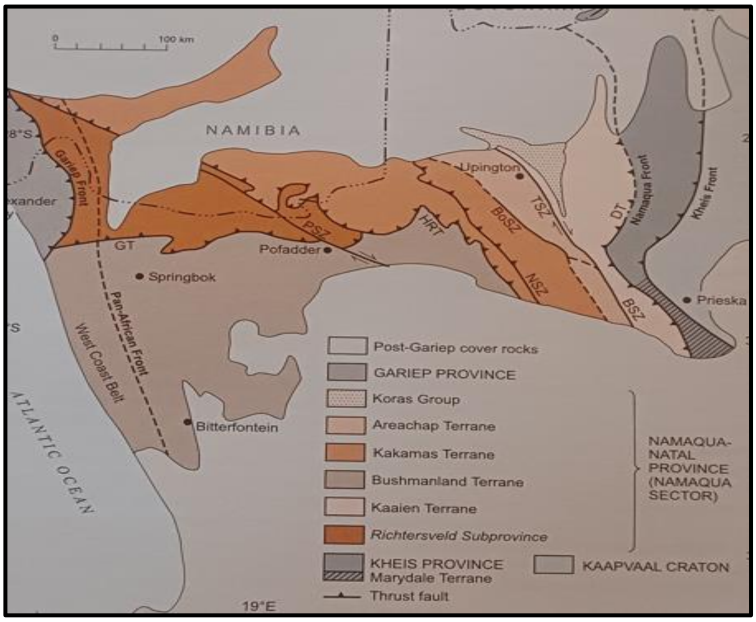


Figure 16: Tectonic subdivision of the Namaqua Sector, based largely on Thomas et al. (1994) and Hartnady et al. (1985). BoSZ: Boven Rugzeer Shear Zone, BSZ: Brakbosch Shear Zone, DT: Dabep Thrust GT: Groothoek Thrust, HRT: Hartebees River Thrust, Neusberg Shear Zone, PSZ: Pofadder Shear Zone.

In the west the rocks are overprinted in a narrow north-trending zone (the West Coast Belt, Figure 16) by thermal and deformation effects related to the Pan-African Gariep Orogeny. In the south the rocks are overlaid by Vanrhynsdorp Group and Karoo Supergroup sediments.

4. STRATIGRAPHY AND GEOCHRONOLOGY

The Bushmanland Terrane comprises of three distinct age groups (Moore et al., 1990):

- A basement complex (Achab Gneiss, Gladkop Suite) consisting predominantly of granitic rocks of Kheisian age (2050 to 1700 Ma).
- A variety of supracrustal sequences of mixed sedimentary and volcanic origin and falling into three broad age groups (1900, 1600 and 1200 Ma).
- Suits of syn- and late tectonic Namaquan intrusive rocks, generally of granitic to charnockitic composition. These include the 1200 Ma Little Namaqualand Suite, the 1060 <a Spektakel Suite and basic rocks of the 1060 – 1030 Ma Koperberg and Wortel Suites and Nouzeez Complex, as well as 950 Ma pegmatites.

Figure 17: Displaying the contact between well bedded sandstone (towards the top of the image) and massive granitic gneiss (below it) is clear as one descends Spektakelberg Pass.

5. STRUCTURAL BELTS

Supracrustal rocks occur in various discontinuous east-west trending belts within the Bushmanland Terrane, increasing in abundance towards the south in the vicinity of Garies as shown in the following figures.

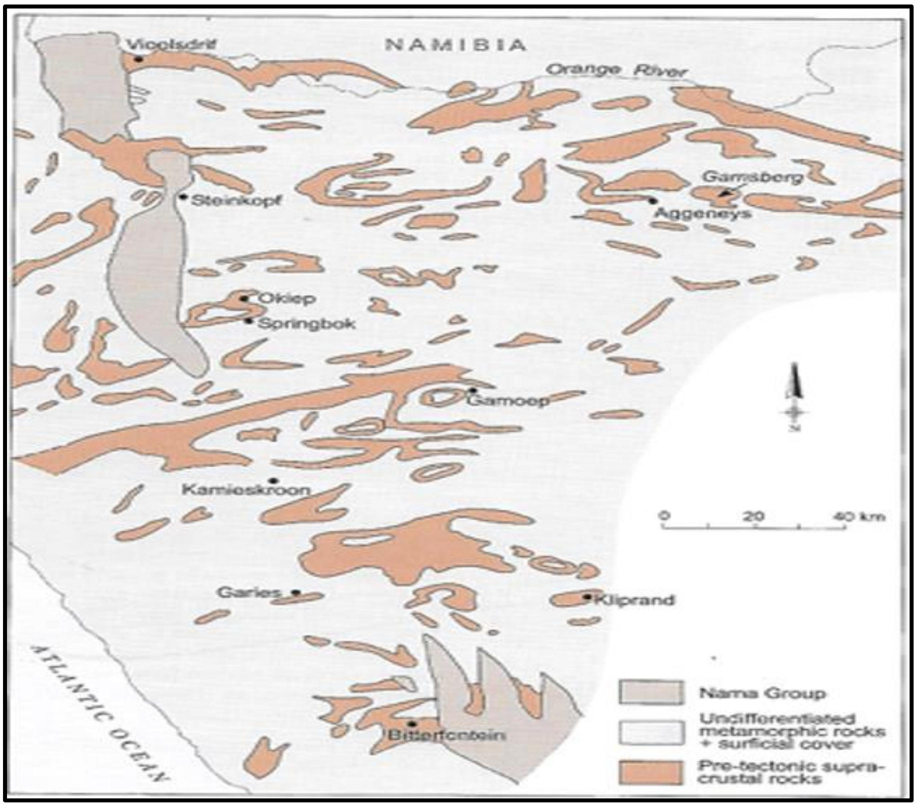


Figure 18: Schematic representation of supracrustal rocks occurring as paragneiss belts in the Bushmanland Terrane (after Moore, 1989).

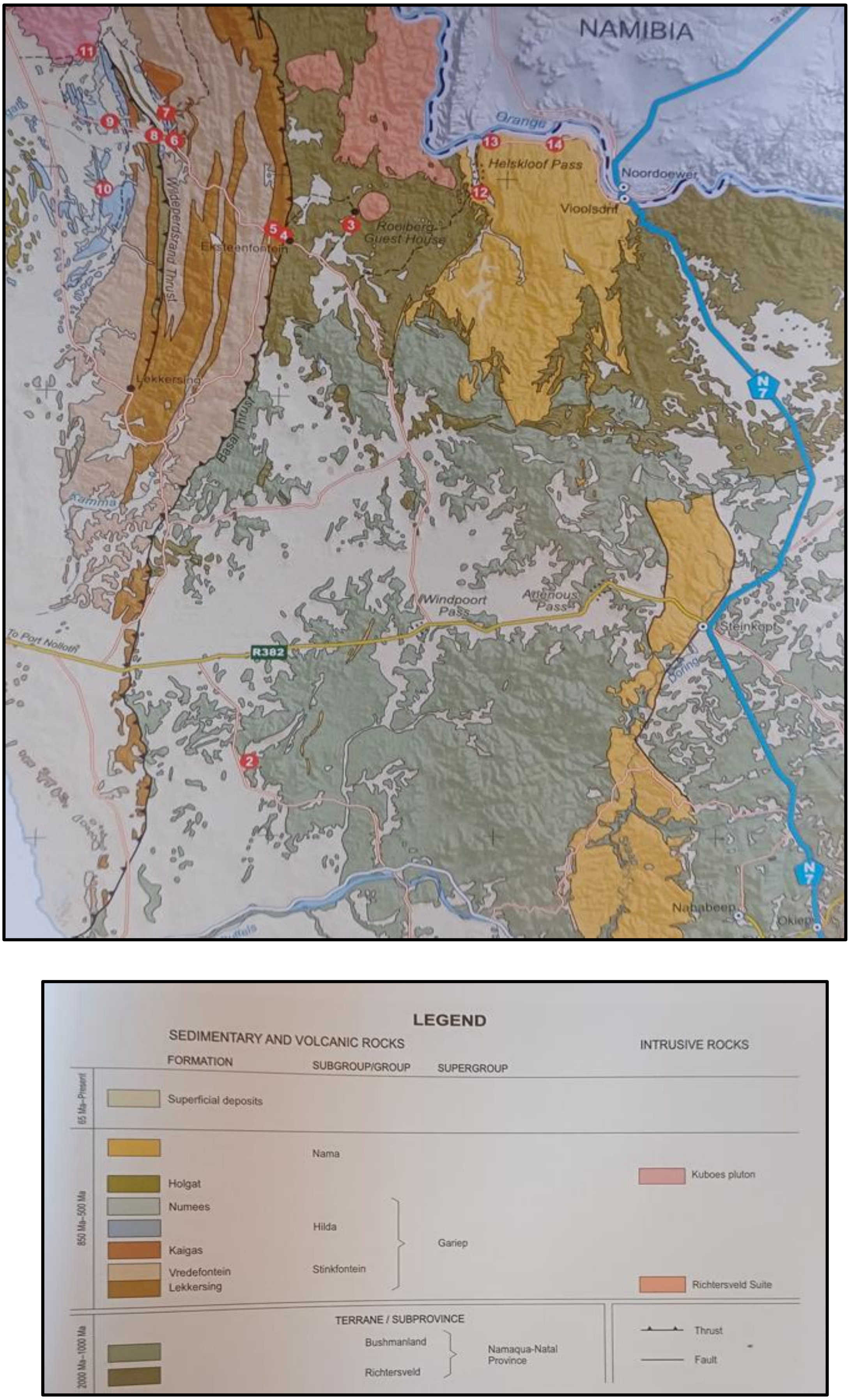


Figure 19: Displaying the sedimentary and volcanic rocks within the Namaqua-Natal Province.

Moore (1989) suggested a broad two-fold subdivision into a southern succession (Bitterfontein-Kamieskroon area), comprising basal quartzofeldspathic gneisses, and overlaying feldspathic quartzites and garnet-cordierite gneisses, and a northern succession (Springbok-Steinkopf-Pofadder area) known as the Bushmanland Group, which comprises basal leucocratic gneisses and overlaying quartzites and micasillimanite schists.

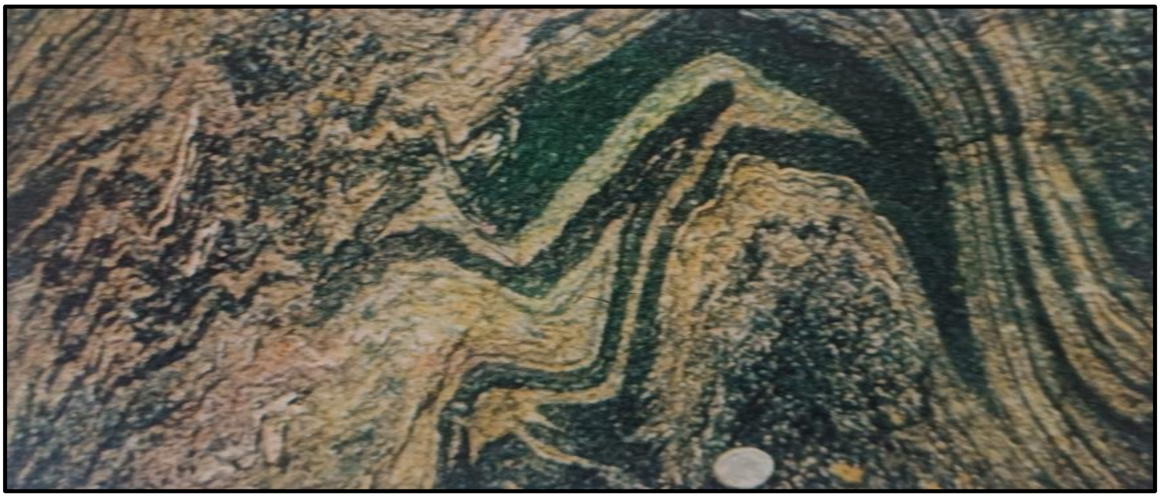


Figure 20: Displaying a specimen of gneiss, the banding typical to this rock is evident.

The supracrustal belts are dominated by leucocratic and biotite-bearing quartzofeldspathic gneiss, metavolcanic rocks of rhyolite to dacite composition, feldspatic and glassy quartzite, interpretated as arkose and arkose and quartzose sandstone respectively, and mica-sillimanite schist or cordierite rich gneiss (Moore, 1989).

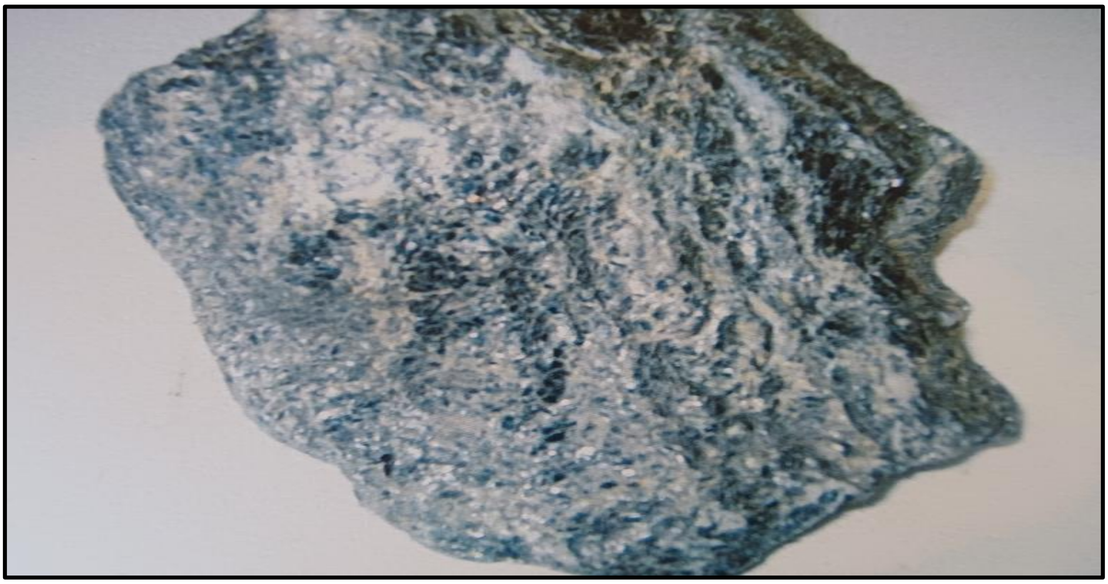


Figure 21: Displaying a specimen of schist.

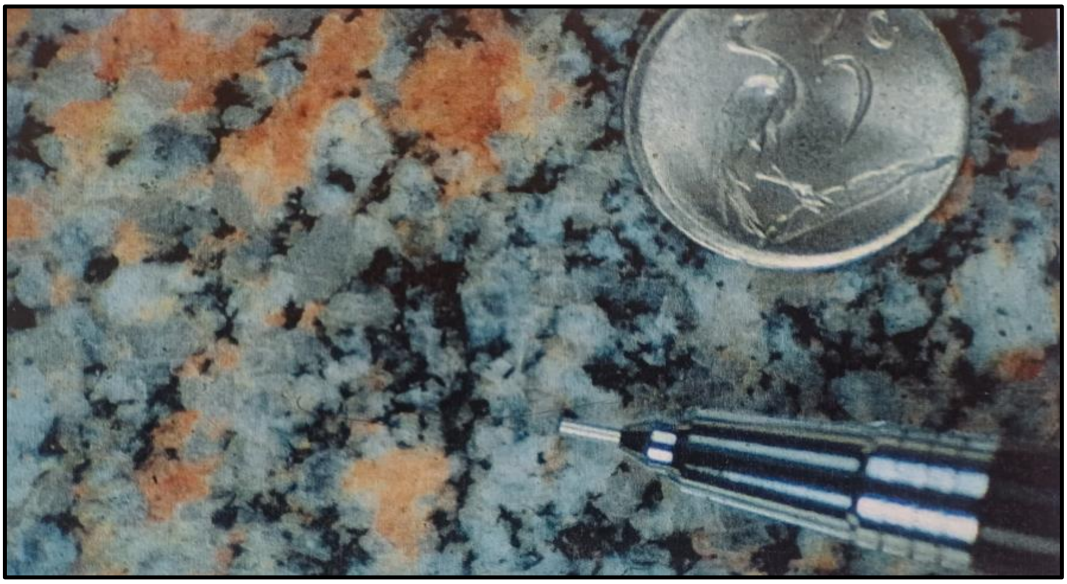


Figure 22: Close up view of granite showing the typical holocrystalline, granular texture. The light-colored minerals are quartzite and alkali feldspar, while the dark mineral is hornblende.

6. STRUCTURE AND METAMORPHISM

The gross structure of the Bushmanland Terrane dominated by kilometer-scale, upright, ENE trending periclinal folds and east-southeast trending shear zones of the Nous Shear System (Joubert, 1971). Blignaut et al. (1983) linked the folds to late thrust ramps.

Metamorphic grade in the rocks of the Bushmanland Terrane ranges from upper amphibolite facies in the northern and northeastern and southern sectors, to upper granulite facies in an ENE trending belt around the Garies-Kliprand area in the south.

While there is general agreement that the Namaquan metamorphism followed an anticlockwise P-T path (increasing P with increasing T- Walters, 1986; Raith and Harley, (1989), consensus is lacking on the duration and absolute timing of the metamorphic event.

7. ECONOMIC GEOLOGY

Multiple strata-bound base metal deposits are hosted by supracrustal rocks in the Bushmanland Terrane. The Aggenys-Gamsberg area is a major ore district where four ore bodies and various minor occurrences of Zn-Pb-Cu-Ag sulphides occur in association with manganese-rich iron-formation and barite within quartzites and mica-sillimanite schists of the Bushmanland Group.

Figure 23: Aerial view of the Broken-hill lead-zinc mine at Aggeneys (photo: R.D. Lipson).

Certain sillimanite-rich horizons in the Bushmanland Group along the northern boundary of the Bushmanland Terrane have been extensively mined for refractory ores from massive sillimanite and sillimanite-corundum lenses (Frik Coetzee, 19732; Wilner et al., 1990). Wolfram Schist was mined in the Okiep Copper district (Bowles, 1988).

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

HYDROLOGY

(Information extracted from Chapter 2: Broad Perspective of the Water Situation in the Lower Orange River WMA and Related Water Resource Management Strategies, Development of ISPs for Central Region: Lower Orange WMA, DWAF)

The proposed PR footprint is within the Coastal Orange Sub-Water Management Area (SWMA) which is managed as part of the Lower Orange Water Management Area.

The Lower Orange WMA is the lowest WMA in the Orange/Vaal River Basin and as such is affected by upstream activities, both in terms of the Upper Orange and the Vaal System. The area is arid with rainfall varying from 400 mm in the east to 50 mm on the west coast. The topography of the area is flat with large pans or endoreic areas that do not contribute runoff to the Orange River system. The main activities in the WMA are mining and irrigation. Extensive irrigation is practised along the Orange River.

Groundwater utilisation is of major importance across wide areas in the Lower Orange WMA and often constitutes the only source of water. It is mainly used for rural domestic supplies, stock watering and water supplies to towns off the main stem of the Orange.

The Coastal Orange SWMA includes mostly dry watercourses which lead directly to the ocean. Most of the urban and mining requirements for water in the WMA are also in the Orange Mainstream sub-area. In addition, water is transferred from the Orange River for urban and mining use to the Coastal Orange SWMA. Water requirements in the SWMA are very small and are mainly associated with towns such as Springbok, Steinkopf and Port Nolloth as well as the mines in the area.

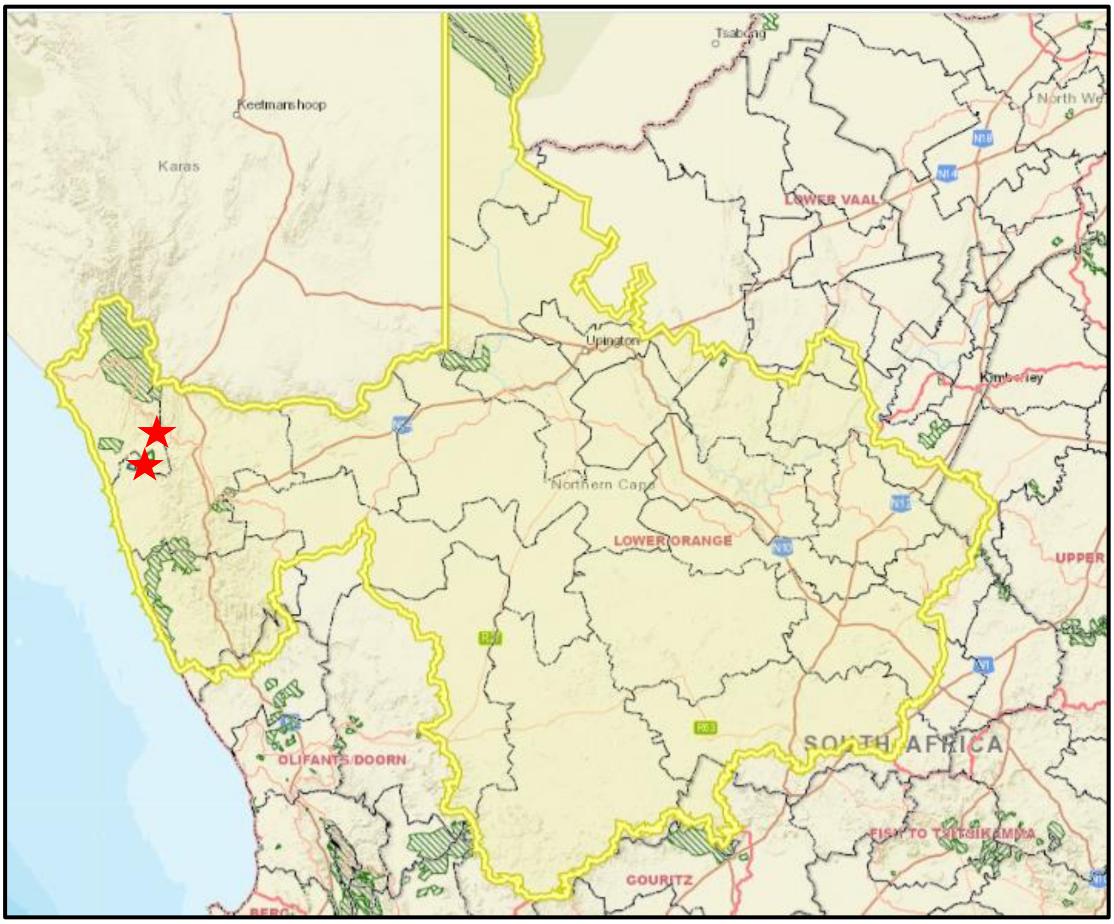


Figure 24: Map showing the earmarked area (red stars) within the Lower Orange WMA (yellow shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

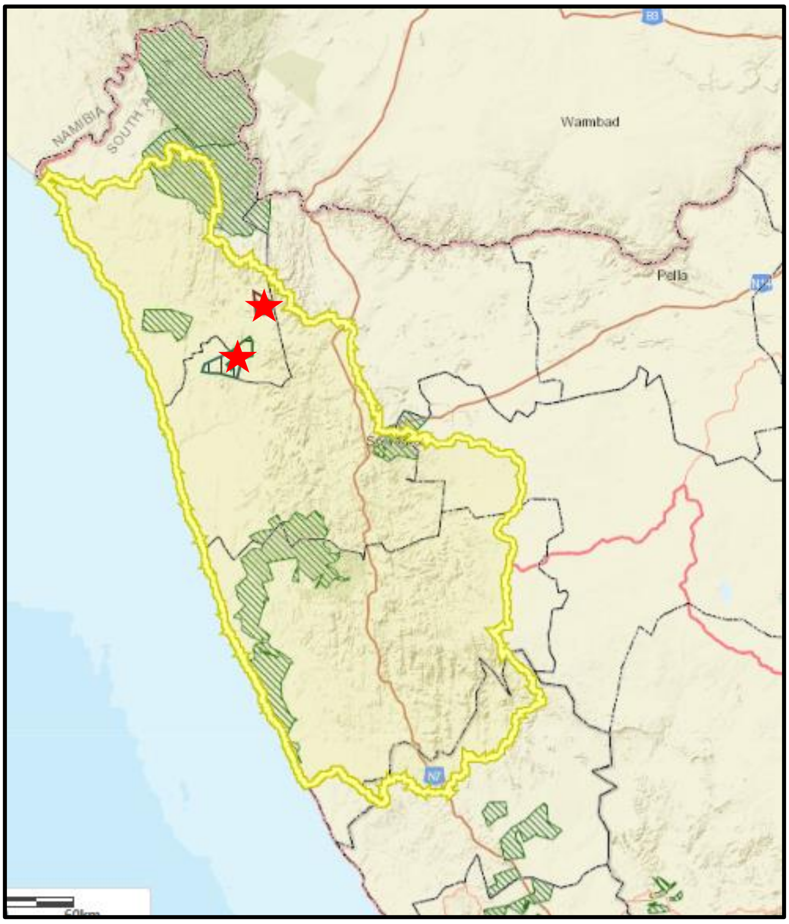


Figure 25: Map showing the earmarked area (red stars) within the Coastal Orange SWMA (yellow shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

The project area is not located within any Strategic Water Source Area (SWSA). According to the SANBI BGIS National Wetlands and NFPA Mapviewer, the farm Tusschen-In No 143 and the most south-western corner of the farm Steenbok No 165 extends across areas classified as a River NFEPA (National Freshwater Ecosystem Priority Area) as indicated in the following figure.

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)

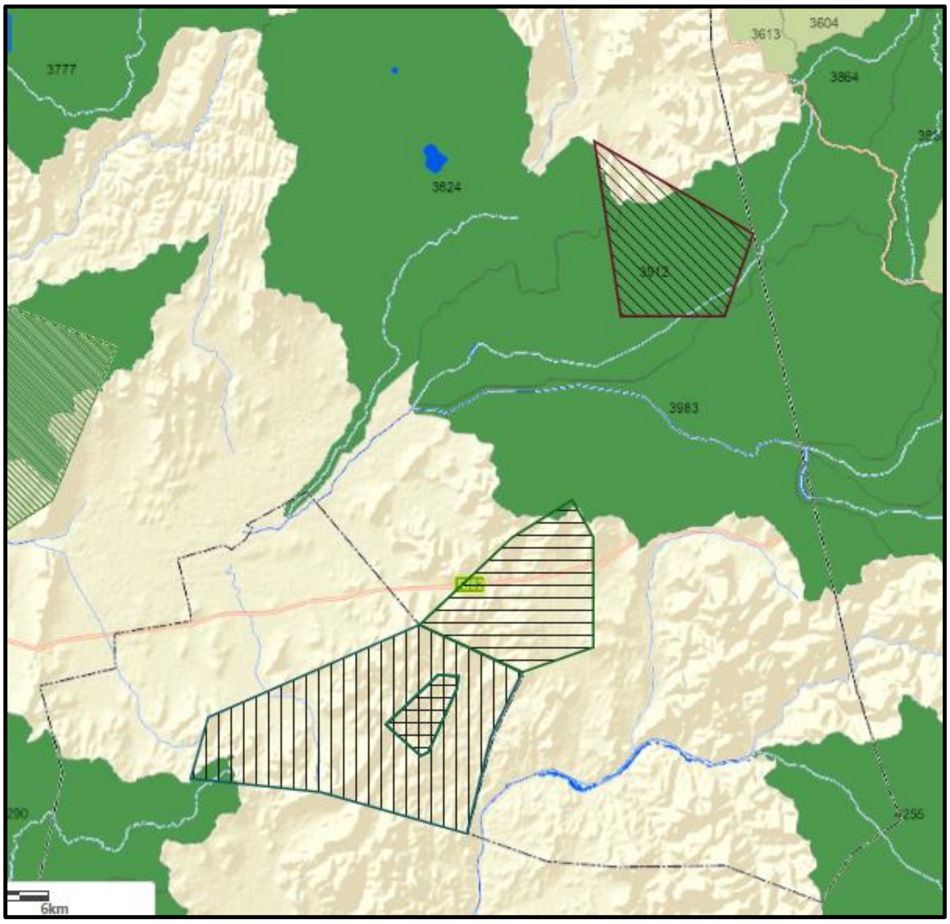


Figure 26: Map showing the earmarked area (stripped polygons) where the farm Tusschen-In No 143 (red bordered polygon) and the southern corner of Steenbok No 165 (blue bordered polygon) extends into the River FEPA (green shading). (Image obtained from the BGIS Map Viewer – National Wetlands and NFEPA)

As evident in the earlier image, a tributary of the Kowiep River flows through the southern part of Tusschen-In No 143 while the Kwaganap River originates in the south-western corner of Steenbok No 165 from where it drains into the Ocean. The BGIS Mapviewer does not indicate any wetlands or other watercourses within the proposed PR footprint.

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

(Information extracted from the Namakwa Biodiversity Sector Plan, 2008)

According to the SANBI BGIS 2016 Northern Cape CBA map viewer (see following image) the proposed PR footprint is within the jurisdiction of the Namakwa Biodiversity Sector Plan (NBSP) and an area classified as a Critical Biodiversity Area (CBA). 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."*

The NBSP notes that "*Critical biodiversity areas (CBA's) are terrestrial and aquatic features in the landscape that are critical for retaining biodiversity and supporting continued ecosystem functioning and services (SANBI 2007). These form the key output of a systematic conservation assessment and are the biodiversity sectors inputs into multi-sectoral planning and decision making tools*." It continues to define a CBA by noting that "*the purpose of CBA's is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape. The CBA, through the underlying land management objectives that define the CBA, prescribes the desired ecological state in which we would like to keep this biodiversity. Therefore, the desired ecological state or land management objective determines which land-use activities are compatible with each CBA category based on the perceived impact of each activity on biodiversity pattern and process*."

Figure 27: Map showing the earmarked area (red stars) within the Namakwa Biodiversity Sector Plan (yellow shading). (Image obtained from the BGIS Map Viewer – 2016 Northern Cape CBA)

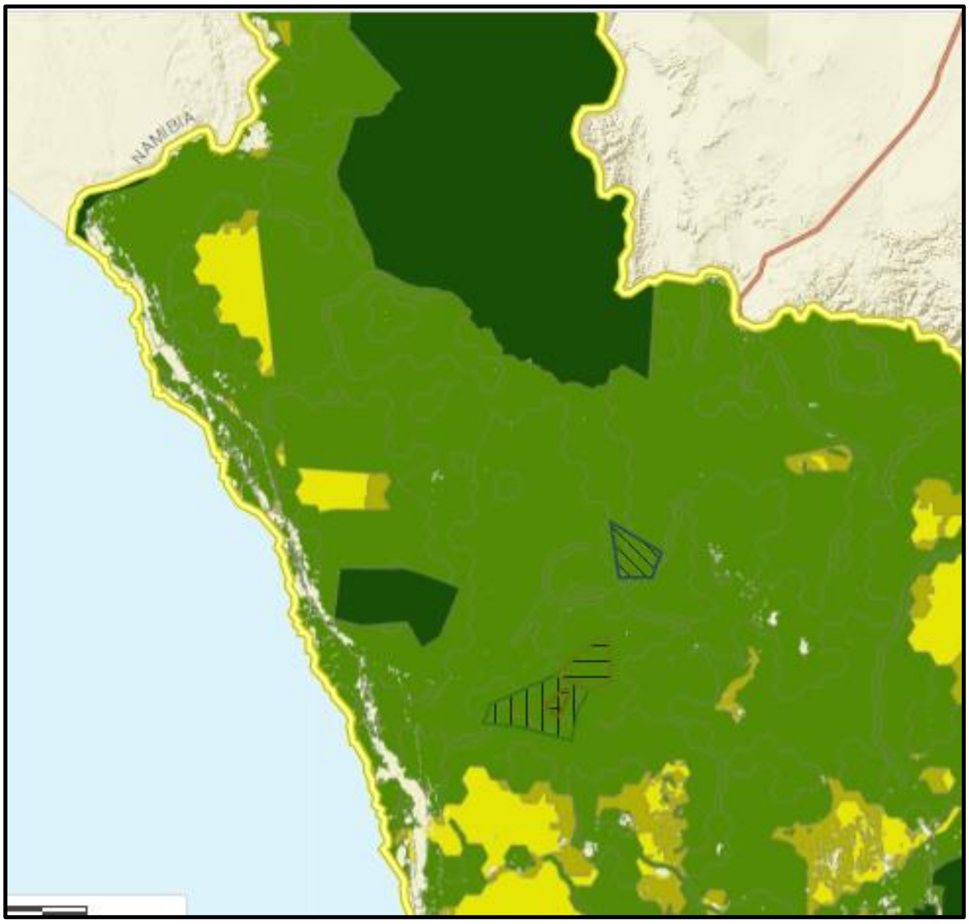


Figure 28: Map showing the earmarked area (stripped polygons) within the Critical Biodiversity Area (green shading). Also note the protected areas indicated in dark green where the most northern area represents the Richtersveld World Heritage Site and the Nababeep Protected Area, and the south-western area is representative of the Richtersveld National Park (Image obtained from the BGIS Map Viewer – 2016 Northern Cape CBA)

As evident in the previous image the proposed PR footprint does not extend into any protected areas. The Richtersveld World Heritage Site and the Nababeep Protected Area lays ±25 km north of the farm Tusschen-In No 143, while the Richtersveld National Park is ±21 km north-west of Aardvark No 164 and Steenbok No 165 with the nearest point is ±13 km from the park. The farms Aardvark No 164, Steenbok No 165 and Farm No 166 (Gifkop) are also within the National Protected Area Expansion Strategy (NPAES) area.

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) four vegetation types are prevalent across the proposed PR footprint namely the:

- Kosiesberg Succulent Shrubland (SKr12);
- Southern Richtersveld Scorpionstailveld (SKr13);
- Southern Richtersveld Inselberg Shrubland (SKr14);
- Namaqualand Heuweltjieveld (SKn4).

Figure 29: Map showing the distribution of the Kosiesberg Succulent Shrubland represented by the lighter brown polygon extending into Tusschen-In No 143 (green dot). The Southern Richtersveld Scorpionstailveld is indicated by the darker brown area on Tusschen-In No 143 and Steenbok No 165 (orange dot) while the beige colouring indicates the Southern Richtersveld Inselberg Shrubland. The greenish brown polygon that enters the southern farms indicate the distribution of the Namaqualand Heuweltjieveld. (Image obtained from the BGIS Map Viewer: 2018 National Vegetation Map).

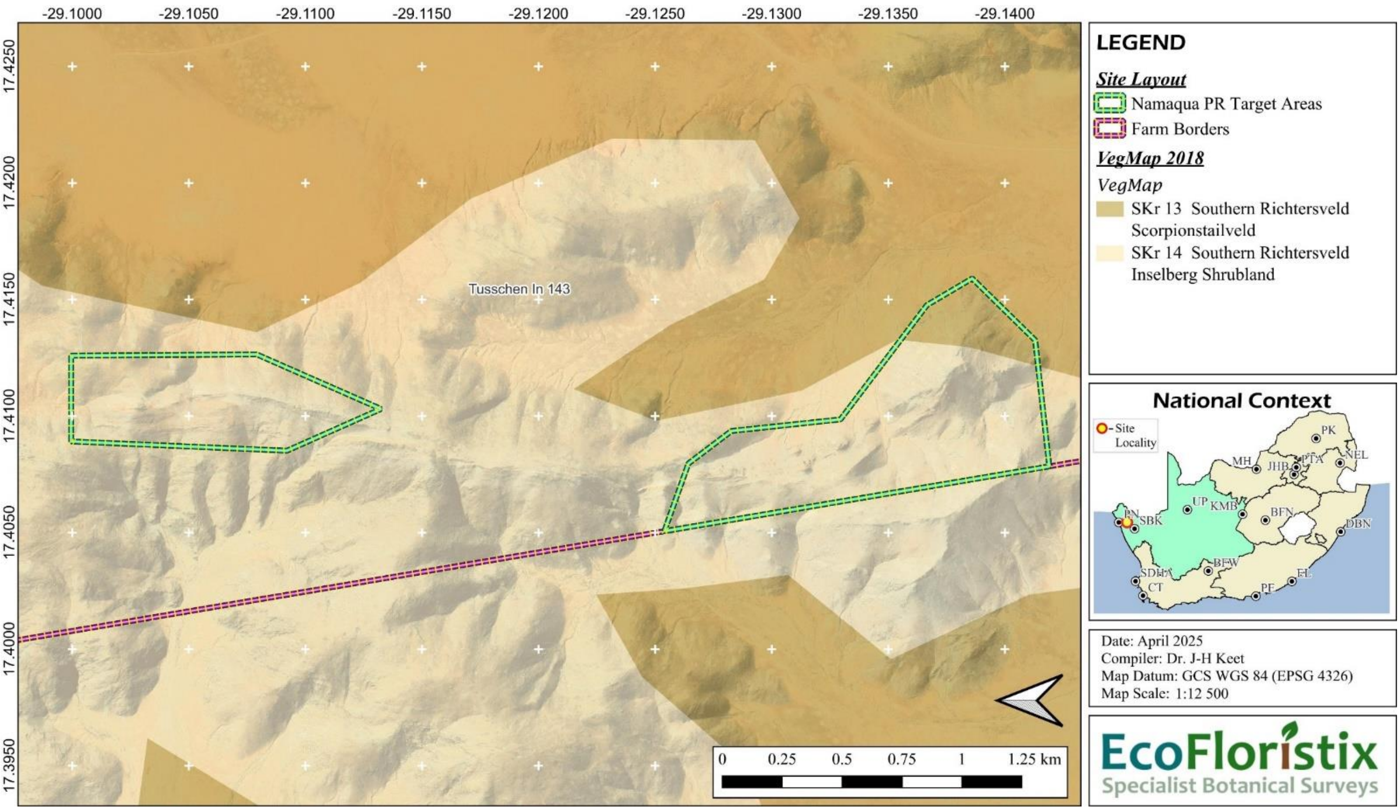


Figure 30: Vegetation types for the target areas on the farm Tuschen-In No 143 (EcoFloristix).

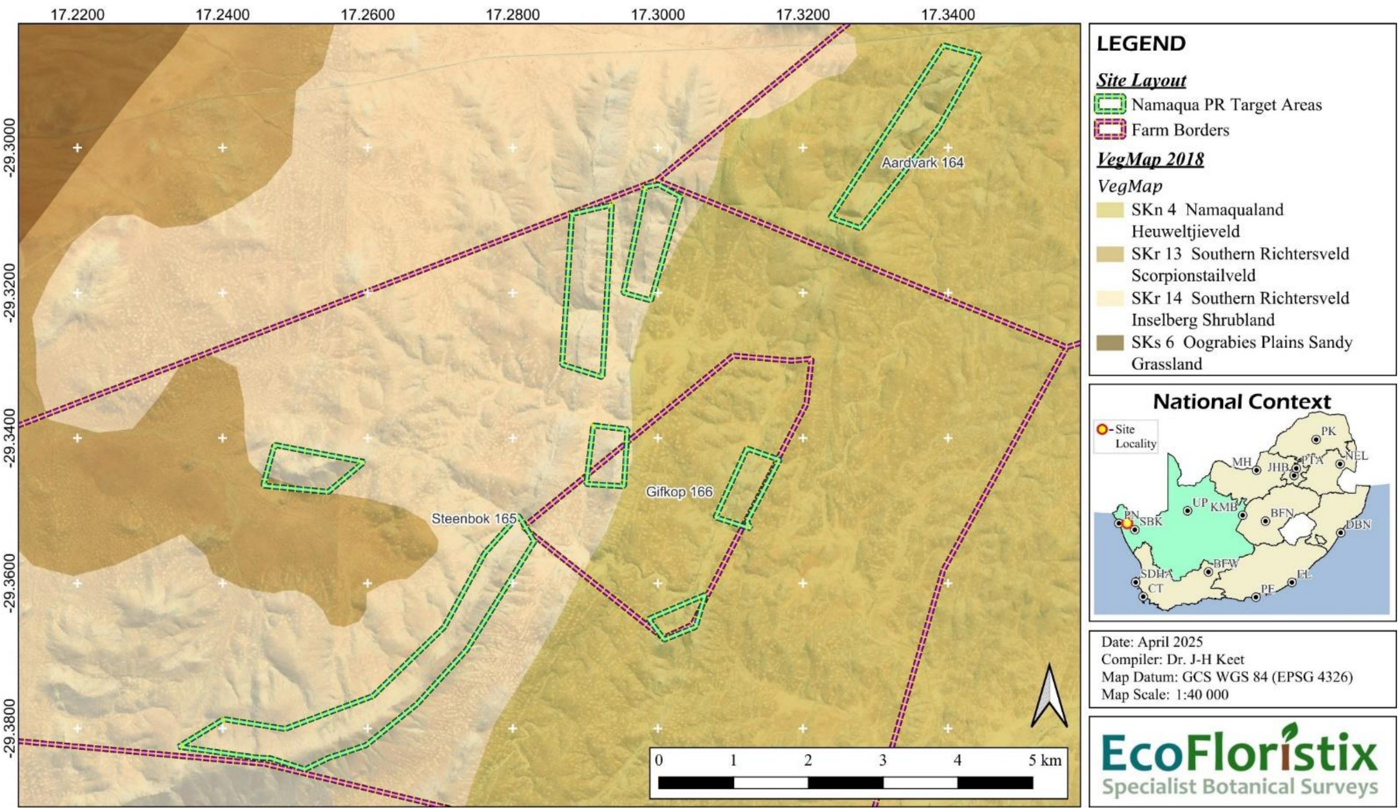


Figure 31: Vegetation types for the target areas on the farm Aardvark No 164, Steenbok No 165, and Farm No 166 (Gifkop) (EcoFloristix).

1. KOSIESBERG SUCCULENT SHRUBLAND (SKr 12)

The Kosiesberg Succulent Shrubland includes the steep slopes between the high plateau in the east and the lower plateau in the West, as well as several ranges of mountains and hills at the upper and lower level. Due to the incision of deep valley systems, the area is deeply dissected into a number of thinly connected fragments.

Some of the important taxa found in this vegetation type include *Didelta spinosa*, *Euphorbia mauritanica, Othonna furcata, Tylecodon paniculatus, Cheirirdopsis namaquensis, Cotyledon orbiculata* var. *orbiculata, Euphorbia gummifera, E. hamata, Zygophyllum foetidum* Biogeographically Important Taxa: *Ruschia senaria, Zygophyllum prismatocarpum, Aloe dichotoma* var *ramosissima, Ceraria fruticulosa, Cheiridopsis denticulata, C herrei, C. speciosa, Tylecodon baeyeri, Conophytum herreanthus* subsp *rex*.

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 28% was set for the vegetation type.

2. SOUTHERN RICHTERSVELD SCORPIONSTAILVELD (SKr13)

The Southern Richtersveld Scorpionstailveld is characterised by a flat bison landscape with a number of inselbergs embedded. Generally, the low vegetation is dominated by the flat cushions of *Brownanthus pseaudoschlichtianus*. Towards the West is strong admixture of grasses, or mosaic elements of grassland accompany the (flat) transition to SKs6 Oograbies Plains Sandy Grassland.

Some of the important taxa found in this vegetation type include *Euphorbia ephedroides* var *ephedroides, Aridaria serotina, Cheiridopsis robusta, Drosanthemum inornatum, Lampranthus otzenianus, Rushia goodiae, Lebeckia multiflora, Grielum humifusum, Trachyandra muricata, Conicosia pugioniformis* subsp *alborosea*. Biogeographically Important Taxa: *Eberlanzia cyathiformis, Phyllobolus deciduous, Oxalis copiosa, Brownanthus pseudoschichtianus*.

The vegetation type is classified as Least Threatened but really susceptible and according to Mucina and Rutherford (2012) none is statutorily conserved yet. A conservation target of 28% was set for the vegetation type.

3. SOUTHERN RICHTERSVELD INSELBERG SHRUBLAND (SKr14)

The inselbergs of the Southern Richtersveld Inselberg Shrubland differ markedly in size, altitude, steepness, rockiness and spatial aggregation. Habitats vary depending on exposure, altitude, and soil type. Smaller inselbergs are considerably more arid and then higher ones.

Some of the important taxa found in this vegetation type include *Drosanthemum floribundum, D. inomatum, Stoeberia frutescens, Adromischus mammillaris, Cotyledon oribiculata* var *orbiculata, Euphorbia decussata, Kleinia longiflora, Ruschia intricata, Salsola namibica, S. zeyheri, Tylecodon paniculatus*. Biogeographically Important Taxa: *Stoeberia frutescens, Zygophyllum prismatacarpum, Euphorbia dregeana, Tetragonia robusta* var *psiloptera, Gorteria corymbose, Conophytum obscurum* sbusp *obscurum, Crassula grisea*. Endemic Taxa: *Euphorbia ephedroides* var *debilis, Namaquanthus vanheerdii, Polymita steenbokensis, Tylecodon cordiformis, Crassula alstonii*.

The vegetation type is classified as Least Threatened and according to Mucina and Rutherford (2012) none is statutorily conserved yet. A conservation target of 28% was set for the vegetation type.

4. NAMAQUALAND HEUWELTJIEVELD (SKn4)

The Namaqualand Heuweltjieveld is characterised undulating plains leading up to the escarpment with the mosaic of communities on heuweltjies. The low shrubland is dominated by leaf-succulent shrubs.

Some of the important taxa found in this vegetation type include *Drosanthemum hispidum, Euphorbia ephedroides* var *ephedroides, Lampranthus otzenianus, Ruschia leucosperma, Didelta carnosa* var *carnosa, Salsola aellenii, S. aphella, Sarcocaulon flavescens, Hermannia trifunca, Arctotis fastuosa, Leysera tenelia*. Biogeographically Important Taxa: *Psilocaulon foliosum, Stoeberia frutescens, Tetragonia namaquensis.*

The vegetation type is not under immediate threat except for local intensive grazing pressures responsible for veld degradation. According to Mucina and Rutherford (2012) some 11% of the unit is statutorily conserved in the Namaqua National Park. A conservation target of 28% was set for the vegetation type.

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):

<u>Mammals:</u>

- 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*)
- Namaqua Rock Mouse (*Aethomys namaquensis*)
- Smith's Red Rock Hare (*Pronolagus rupestris*)
- Steenbok (*Raphicerus campestris*)
- Striped Polecat (*Ictonyx striatus*)
- Suricate (*Suricata suricatta*)
- Yellow Mongoose (*Cynictis penicillata*)

<u>Birds:</u>

- 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 farm Tusschen-In No 143 is mainly Medium with a small area to the north-west deemed High.

Figure 32: Animal Species theme sensitivity of the farm Tusschen-In No 143 according to the DFFE screening report.

The animal species theme sensitivity of the farms Aardvark No 164, Steenbok No 165, and Farm No 166 (Gifkop) is Medium as shown in the following figures.

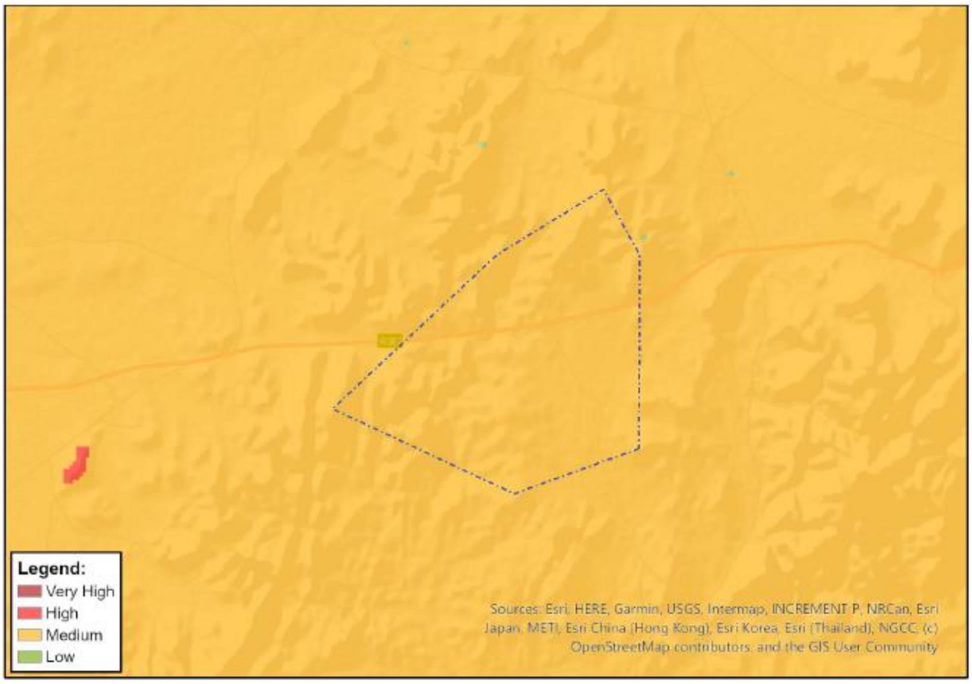


Figure 33: Animal Species theme sensitivity of Aardvark No 164 according to the DFFE screening report.

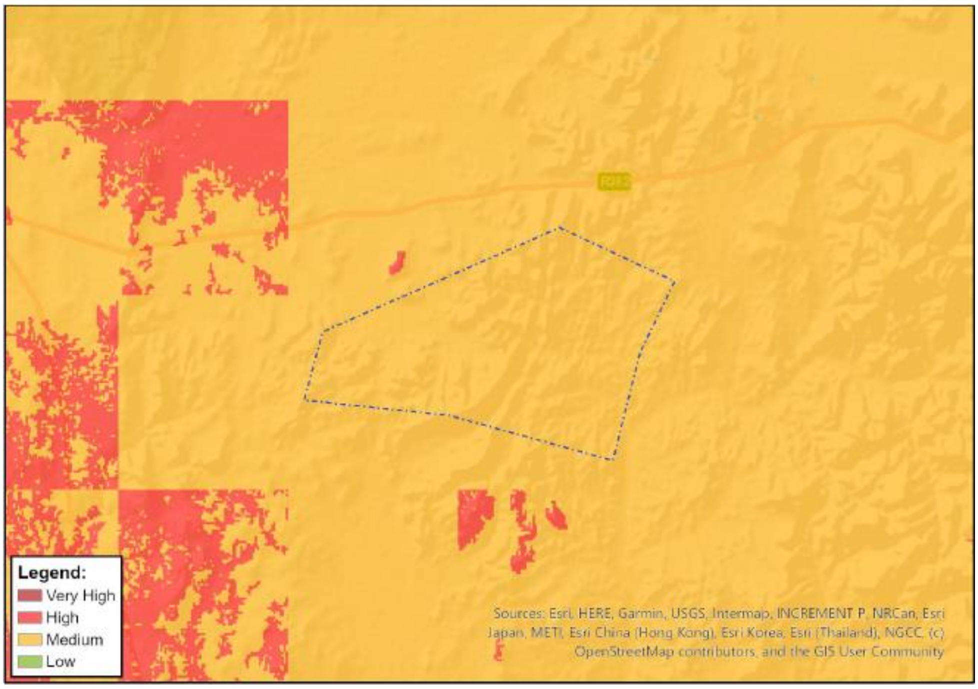


Figure 34: Animal Species theme sensitivity of Steenbok No 165 and Farm No 166 (Gifkop) according to the DFFE screening report.

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

HUMAN ENVIRONMENT

CULTURAL AND HERITAGE ENVIRONMENT (INCLUDING PALAEONTOLOGY)

(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Application on 21 217.1756 hectares near Steinkopf in the Northern Cape Province, 2025 – Appendix G)

The Heritage Impact Assessment (HIA) compiled by Beyond Heritage discusses the archaeological background of the greater study area i in terms of the Stone Age, Iron Age, Historical Background, Copper Mining History, and the Anglo-Boer War.

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.

Archaeological research in Namaqualand is concentrated within certain areas, such as the coast (Dewar 2007, Orton 2012), the Kamiesberg mountains (Webley 1992), the Richtersveld, and along the Orange River (Robertshaw 1978; Beaumont et al. 1995, Webley 2007, Orton & Halkett 2010). Archaeological occurrences in these areas are varied and range from the ESA to the LSA (e.g., Beaumont et al. 1995, Dewar 2007, Orton 2012), with the LSA being the most prevalent. Although chronological frameworks have been established for certain areas, there have been no academic studies in the Springbok area (Kaplan 2016, Orton 2021).

Although unexcavated rock shelters/overhangs are present, which may have richer deposits, ESA, MSA, and LSA lithics are currently represented by surface scatters within the study area. These assemblages are made from predominantly quartz and some of silcrete (Orton & Halkett 2007, Kaplan 2010a; b; 2016, Orton 2019). Prior to the introduction of livestock by herder groups (Khoi) *ca* 2000 years ago, the area would have been inhabited by hunter-gatherer (San) communities. Hunter-gatherers occupied rock shelters, practiced a nomadic lifestyle, while utilising the landscape for food resources (e.g., Webley 1992, Dewar 2007, Orton 2012).

The Northern and Western Cape are currently the most extensive researched areas with regards to pastoral archaeology, based on historical evidence the areas are known to have been inhabited by Khoisan communities (e.g., Webley 1992, Orton 2012). Consequent to the introduction of caprines, hunter-gatherers are apparently recognised by relatively high percentages of formal lithics, especially backed blades (Swartkop industry), as well as small ostrich eggshell beads s and thin-walled undecorated, grass-tempered ceramics, while herders are characterised by lower percentages of formal lithics (Doornfontein industry), larger ostrich eggshell beads, as well as thin-walled and grit-tempered ceramics (e.g., Beaumont *et al*. 1995, Parsons 2000). Even though hunter-gatherer and herders are separate linguistic groups with different socio-economic and -political organisation, distinguishing different archaeological signatures for the two modes of subsistence have proved to be ambiguous in practice (Webley 1992; Parsons 2000; Sadr 2008; Orton 2012, Veldman 2014).

The presence of stone walling, cairns and stone circles in the study area, are thus associated with both hunter-gatherers and herders based on material culture and ethnographic accounts (Parsons 2004, Sampson 2009, Veldman *et al*. 2017). Circles vary in building style. Stone circle settlement typically dates from the last 2000 years to 100 years ago (Veldman 2014).

Rock art (paintings and engravings) is predominantly a characteristic of the LSA. Kaplan (2010) reported a faded rock art site on the overhanging face of a large boulder. This is the only known painted site known from the vicinity of Okiep and Concordia. Rock art is generally rare though a few painted sites are on record (Orton 2013, 2019), whereas engravings might be more numerous in Namaqualand, due to geology and topography. In general, paintings occur within shelters/overhangs situated in escarpments and folded belts, while and the engravings are present on outcrops and loose standing boulders on the relatively featureless inland plateau (e.g., Morris 1988, Deacon 1997).

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.

There is no archaeological evidence for Iron Age settlements in the general area, as the migration of Bantu-speaking farmers did not extend that far south-west. Iron Age farmers subsistence is based on livestock and agriculture; therefore, the arid Namaqualand environment is unsuitable for such intensive mixed farming practices. However, based on historical accounts it is safe to say that Tswana-speaking groups had trade relations with Khoisan communities near the Orange River since the 1700s to the 1820s (Humphreys 1976).

<u>Historic Background</u>

Because it lies so far from the original Cape Colony (i.e., Cape Town), northern Bushmanland was colonised quite late with most farms only surveyed and granted in the very late 19th or even early 20th centuries. As a result, very few historical structures and features exist on the landscape. Most of the buildings date to the early-mid-20th century and tend to be of low or no heritage significance. Several surveys in the Bushmanland area have recorded possible isolated graves represented by unusual rocks (either isolated standing rocks or unnatural clusters). These could be related to early '*trekboers'* passing through the area. Because they lived a very nomadic lifestyle, the physical traces of these early European stock farmers are extremely ephemeral. The ruins of small stone structures that are occasionally found alongside rock outcrops in Bushmanland are likely to represent huts and small livestock enclosures built either by 19th century '*trekboers*' or by early 20th century shepherds. They may have been covered with sticks and skins or by tarpaulins. Halkett and Gribble (2018) recorded evidence of more recent, historical period occupation of the area including the remains of built structures, ash heaps and possible graves.

The town of Steinkopf was originally called Kookfontein and began as a mission station established by the London Missionary Society. Control of the mission was later transferred to the Rhenish Mission. The town was eventually named Steinkopf, in honor of Reverend Dr. Steinkopf, who traveled to England in 1842 (Raper 2004).

Copper Mining History

Copper mining has taken place in Namaqualand prior to the onset of the Dutch East India colonial era of the mid to late 17th century. Several exploration parties were sent out by the Dutch commanders of the Cape to search for mineral wealth However, it was only during 1681, when Khoekhoen-speakers visited the Fort of Good Hope with pieces of copper that the Commander, Simon van der Stel, sent out Olaf Bergh in 1682 and 1683 to find the source of the copper ore. Bergh was unsuccessful in finding the ores.

Izaq Schrijver and three miners then attempted to find the ore in 1684, their efforts were not entirely in vain, they did not find the ores, but did manage to barter a satchel of copper ore from the locals (Smalberger 1969, Cairncross 2004).

Simon van der Stel (then commander of the garrison at the Fort of Good Hope) decided to search for the elusive copper mountains himself. He and his men did find the Copper Mountains and sunk three shafts, extracting a small quantity of copper ore. However, the samples they sent to the Netherlands to evaluate were of low-grade. This, together with the distance from the Cape, the difficulty of transporting the ore to the coast, and the difficulty of processing it locally due to a lack of fuel and water, resulted in the venture being abandoned. Then in 1761 Hendrik Hop's expedition were despatched to Namaqualand. They concluded that the Copper Mountains where van der Stel was, only had small quantities of copper ore. Instead, they wanted to mine Little Copper Mountain, which was close by. Yet, again, the difficulties of extracting, transporting and processing the ore would cost them their profits and the idea was abandoned (Smalberger 1969).

In the meantime, the first British occupation of the Cape took place in 1795, and all Dutch East India Company property were transferred to the British Crown. Thereafter, for a few short years the Cape was under Batavian Dutch rule, only to be British again in 1807 (van Niekerk 2005, Samkin 2010). The Cape remained under British colonial rule, until challenged during the Anglo-Boer War of 1899-1902.

Intensive copper mining at Nababeep only started during the 1840s. The first company to be registered was the South African Mining Company formed by Thomas Fannin in 1846. Namaqualand was also annexed by Sir Harry Smith in 1847 and was as such now part of the British Colonial Government. The South African Mining Company seemed to simply fade out of existence after a few years without being formally dissolved. The value of shares for Joint Stock Companies in the Shipping and

Mercantile Gazette of 1848 does not include the South African Mining Company. The absence of the company in the Gazette may suggest that shares no longer had market value and became worthless (Smalberger 1969).

After the disastrous expedition of the South African Mining Company a German by the name of Von Schlicht went up to Namaqualand, and found, not only van der Stel's mine, but more importantly, a farm named Springbokfontein also known as Melkboschuil and Koperberg. Von Schlicht returned to Cape Town with the hopes of interesting capitalists and merchants in mining, but he was unsuccessful in attaining capital investments given the failure of the South African Mining Company. Instead, Jencken who was an acquaintance of Von Schlict, got himself into financial difficulties with Phillips and King (a mercantile firm). To repay Phillips and King, Jencken proposed to open a general store in Namaqualand and simultaneously investigate the prospects of copper mining based on Von Schlict's findings. Although Springbok fell within the sphere of the Cape Government, no mineral rights were retained by the Government, because they were at the time indifferent to rich mineral deposits. In 1850, the Cloete's occupied the farm known as Springbokfontein, upon discovering the rich copper ores in the area, Phillips and King bought the farm from Cloete, as such Phillips and King obtained the mineral rights to the entire farm. Nababeep was purchased by Phillips and King in 1852 (Smalberger 1969).

By 1854, Phillips and King had sole mining rights to Brakfontein, Melkboschkuil and Nababeep. By 1855 the copper mining boom was no longer lucrative for some companies, but the mines of Phillips and King remained profitable. Transport was still problematic; copper was transported by wagon to Hondeklip Bay and Port Nolloth. Phillips and King systematically bought up almost all the farms on route to Hondeklip Bay to ensure the transport of their ores and to secure a monopoly over the area where they could eliminate smaller companies, except for their principal rival - the Namaqua Mining Company. The Namaqua Mining Company obtained temporary encampment rights on the farm Kookfontein that enabled them to get their ores to the coast.

These mining companies started to pressurise the government to construct a railway line to transport the material to the coast but to no avail. Government officials were unwilling to build a railway to Hondeklip Bay, as the railway would become defunct once the dominant companies cease to exist, which did eventually happen. In 1862, Phillips and King had to sell all their properties to the Cape of Good Hope Copper

Mining Company Ltd due to the death of two of the partners in the firm (Smalberger 1969).

Thus, when the Cape Copper Mining Company Ltd were granted permission to construct a railway, it ran directly to Port Nolloth since 1869. The first line was a tramway for animal-drawn traffic, and was completed in stages, reaching Okiep in 1876. Up to 1876 the entire line was operated by animal drawn traffic. The light rails were replaced with steel rails to replace the animal drawn tram with a steam train, and the rail was extended to Okiep in 1893.The 12km branch line from Garracoup Junction (on the main line) to Nababeep was constructed in 1899. Although the main railway line between Port Nolloth and Okiep survived until 1945 when its new owners sold most of the line as scrap, the section between Nababeep and Okiep via Garracoup Junction remained in service until the construction and permanent surfacing of the Nababeep to Okiep road in 1950, when this section was decommissioned and the rails uplifted (Smalberger 1969, Webley 2016).

The Namaqua Mining Company became defunct due to mismanagement and excessive transport costs. They were replaced by the Concordia Copper Company in 1875. However, the construction of the railway brought new opportunity, reduction of shipping costs in 1881 led to the reopening of the Springbokfontein mine, which enabled the Concordia Copper Company to send some ore away. Although mining had been commenced by them in 1875, they had until 1881 been unable to get their ores to the market, due to low grade of ore, depressed prices and the enormous transport costs. In 1886 the Concordia Copper Company was formed into the Namaqua United Company, but this company became bankrupt in 1888 and became the Namaqua Copper Company. In the same year, the Cape of Good Hope Copper Mining Company Ltd, changed its name to the Cape Copper Company Ltd (Smalberger 1969).

The Anglo-Boer War of 1899-1902 disrupted mining operations, especially with sporadic attacks on the mining towns, but by 1902, Nababeep was recognised as the second most important producing mine of the Cape Copper Company (Smalberger 1969). World War I (1914-1918) and World War II (1939-1945) brought prosperity to the mines. In war time the largest use of copper is for cartridge brass for ammunition, rotating bands, bullet jackets, bearings, springs, detonators, fuse parts, and primer cups (e.g., Dikshit & Henry 1973). However, the crash in prices that followed in peace time, closed down the mines, especially the Great Depression post-war era.

The mines in the area were taken over in 1937 by the Okiep Copper Company Ltd. Okiep and Nababeep mines were pumped out and re-opened in 1938 to mine the low-grade ore, which the proceeding owners had abandoned as unprofitable, during the 1940s to the 1960s sporadic mining took place but the mines closed permanently in the 1970s and 1980s (Cairncross 2004, Orton 2021, van der Walt pers. obs. 13 September 2021).

Anglo-Boer War

In 1901, Colonel Shelton was appointed Commandant of Namaqualand to defend the key copper mining towns of Okiep, Concordia, and Nababeep from Boer forces under General Smuts. He established his base in Okiep, reinforcing it with thirteen blockhouses, including one near the railway from Steinkopf. As Smuts advanced, he cut telegraph lines, leaving the railway to Port Nolloth as Okiep's sole communication and supply route. Shelton fortified the town, particularly to protect the railway, which was essential for water transport and dynamite storage (Burke 1995).

General Smuts captured Springbok on 1 April 1902, and Concordia soon after. Okiep came under siege on 4 April, with the last train arriving that day. The Ratelpoort Blockhouse was also attacked. British reinforcements landed at Port Nolloth on 12 April, advancing inland and reclaiming blockhouses. After Smuts left for peace talks on 26 April, General Maritz attempted to bomb Okiep using a dynamite-laden train, but it derailed and failed to explode. The siege ended on 4 May 1902, with the railway playing a critical role throughout.

Archaeology & Palaeontology – DFFE Screening Tool

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

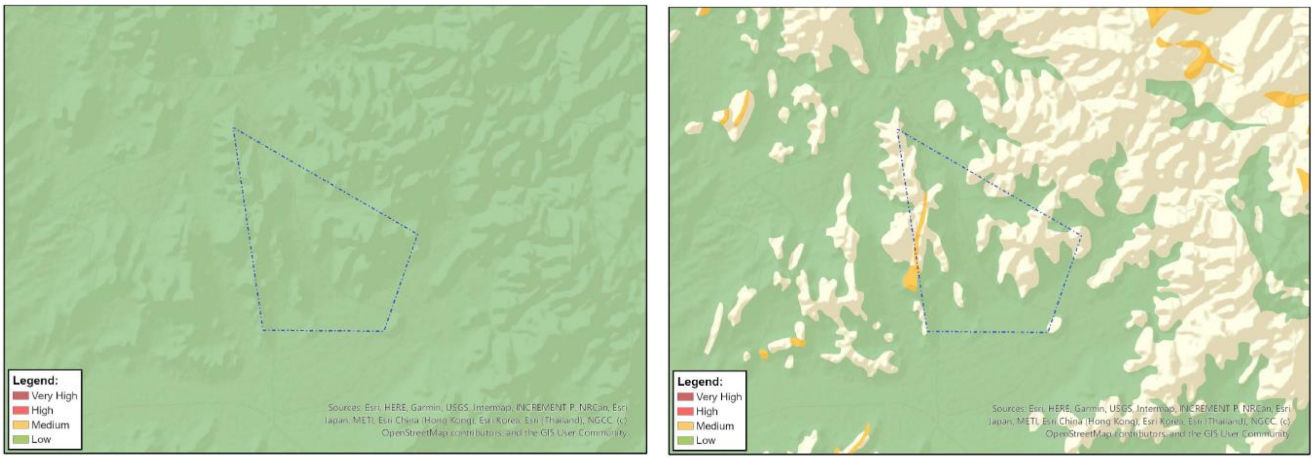


Figure 35: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Tusschen-In No 143 according to the DFFE screening report.

Figure 36: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farm Aardvark No 164 according to the DFFE screening report.

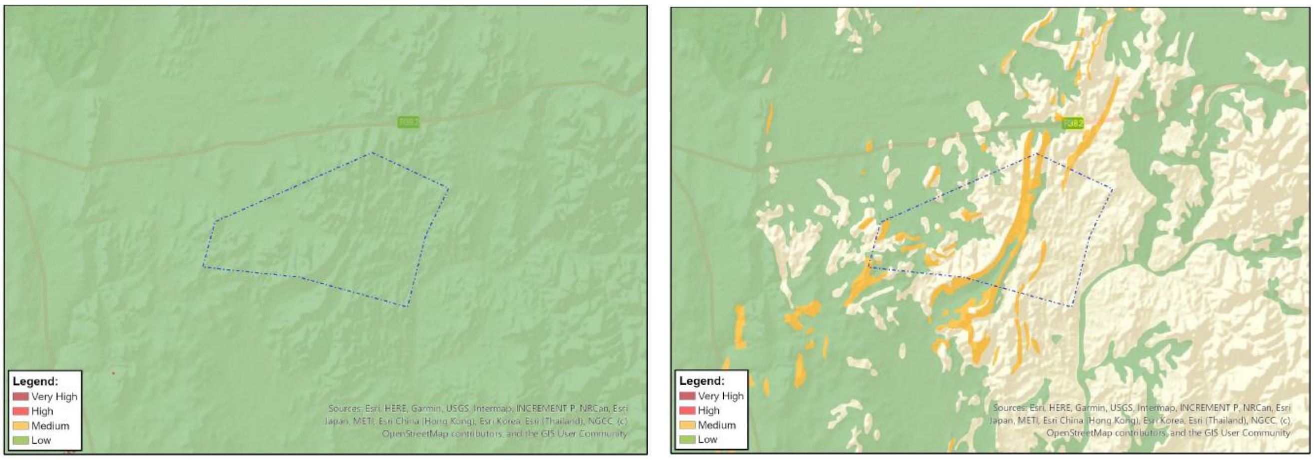


Figure 37: Archaeological and cultural heritage theme sensitivity (left pane) and the palaeontology theme sensitivity (right pane) for the farms Steenbok No 165 and Farm No 166 (Gifkop) according to the DFFE screening report.

Palaeontology

(Information extracted from the Palaeontological Impact Assessment for four prospecting right applications near Steinkopf, Namaqualand, Northern Cape Province, 2025 – Appendix H)

The Palaeontological Impact Assessment (HIA) compiled by Prof Marion Bamford notes that the project lies in the Namaqua-Natal Province in the Namaqua section. The Namaqua-Natal Province is a tectono-stratigraphic province and forms the southern and western boundary of the ancient Kaapvaal Craton and extends below the Karoo Basin sediments to the south (Cornell et al., 2006). It comprises rocks that were formed during the Namaqua Orogeny (mountain-building) some 1200 – 1000 million years ago. It has been divided by geologists into a number of terranes (similar lithology and bounded by shear zones).

The project lies in the Bushmanland Terrane with its northern boundary against the Richtersveld Subprovince and the eastern boundary against the Kakamas Terrance (ibid). According to Moore et al. (1990, in Cornell et al., 2006), the Bushmanland Terrane rocks can be divided into three distinct age groups:

1. A basement complex (Achab Gneiss, Gladkop Suite) that is mainly composed of granitic rocks of Kheisian age (2050 - 1700 Ma).
2. A variety of supracrustal sequences of mixed sedimentary and volcanic origin and probably fitting into three broad age groups (ca 1900, 1600 and 1200 Ma).
3. Suites of syn- and late-tectonic Namaquan intrusive rocks, generally of granitic to charnockitic composition. This group includes the Little Namaqualand Suite (ca 1200 Ma), the Spektakel Suite (ca 1060 Ma) and the basic rocks of the Koperberg and Wortel Suites and Nouzees Complex (1060 – 1030 Ma), as well as the ca 950 Ma pegmatites.

The project also lies in the Areachap Terrane that comprises a north-northwest trending belt of amphibolite-grade metabasic and supracrustal gneisses known as the Areachap Group and dated to about 1 300 Ma (Cornell et al., 2006). The Areachap Group is intruded by granitoids of the Keimos Suite. In the Upington and Kleinbegin areas, the Sprigg Formation forms the base and is overlain by the Jannelsepan, Bethesda and Rateldraai Formations that are made up of various schists, amphibolites and biotites gneisses (ibid). Kleinbegin is a volcanic centre with a variety of foliated metamorphosed granites.

The Namaqua-Natal Province rocks are volcanic in origin and frequently metamorphosed. Several outcrops occur on the farms in the prospecting area and probably underlie the aeolian sands and Tertiary Calcretes.

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 (including Palaeontology).*

SOCIO-ECONOMIC ENVIRONMENT

(Information extracted from the Namakwa District Municipality Revised Draft Integrated Development Plan 2024/2025)

The Namakwa District Municipality (NDM) is situated in the north-western corner of South Africa and borders the Atlantic Ocean to the west and Namibia to the north. It is also bordered by the ZF Mgcawu and Pixley ka Seme Districts of the Northern Cape Province to the North-East and East, respectively. The NDM is one of five districts in the Northern Cape Province. The local municipalities which falls under the Namakwa District are Nama Khoi, Kamiesberg, Richtersveld , Karoo-Hoogland, Khai-Ma and Hantam.

The application area falls within Ward 8 of the Nama Khoi Local Municipality and Ward 3 of the Richtersveld Local Municipality (RLM).

NAMA KHOI LOCAL MUNICIPALITY

The town of Springbok forms the administrative centre of the Nama Khoi Local Municipality (NKLM). This region is known as the land of the Nama people, the domain of the indigenous Khoi- San. Tourism has become an economic pillar, relieving hardships and serving as a reminder of the rich cultural heritage buried in the plains of Namakwa.

Of the 16 016 economically active (employed or unemployed but looking for work) population in the municipality, 22,9% are unemployed. Of the 7 216 economically active youth (15 – 34 years) in the municipality, 30,1% are unemployed (StatsSA).

RICHTERSVELD LOCAL MUNICIPALITY

The Richtersveld Municipality is one of six Category B Local Municipalities. Of the 5 687 economically active (employed or unemployed but looking for work) people in the municipality, 18,6% (1 060) are unemployed. Amongst the 2 547 youth (aged 15 – 34) in the area, 22,4% (571) are unemployed (StatsSA).

The IDP of the NDM notes that the main challenges facing the RLM relates to infrastructure, socio-economic, spatial and housing issues as well as issues relative to social facilities and services. According to the IDP the key issues most likely to have a fundamental effect on the long-term economic viability of the Municipality are:

- Town establishment of Alexander Bay or incorporation of town to Richtersveld Municipality.
- Reviving the fishing industry to provide a platform for fishing communities.
- Taking advantage of the opportunities presented by Richtersveld's location along the R382 and its close proximity to the N7.
- In ensuring that the backlog in the provision of basic services such as housing, water, sanitation, electricity and housing are addressed.
- Attracting economic and investment opportunities to the municipality to ensure economic sustainability.
- Establishing of Boegoebaai harbor and a green hydrogen industry.

DEMOGRAPHIC PROFILE OF THE NDM

The following table demonstrates that the population of Namakwa district is 148 935. The data shows that the Nama Khoi Municipality standing out as the most populated and shows the Richtersveld Municipality as the second-largest population with 24 325 people. Furthermore, the data suggests that the Nama Khoi Municipality may have a higher demand for services and resources compared to the other local municipalities.

Table 12: Namakwa total population (NDM IDP, 2024)

Municipality	Total Population	Rank
Nama Khoi	67 089	1
Richtersveld	24 235	2
Hantam	22 281	3
Kamiesberg	15 130	4
Karoo-Hoogland	11 691	5
Khai-Ma	8 510	6
NAMAKWA	**148 935**	

According to Census 2022, the Namakwa District Municipality's population consisted of 5.9% African (8 792), 85.5% Coloured (127 288), 0.6% Indian/Asian (860), White 7.5% (11 186) and Other 0.4% (631). The majority of the population in Namakwa District identifies as Coloured, followed by White and African. The relatively small percentages of Indian/Asian and Other populations indicate a less diverse demographic makeup.

Table 13: Namakwa population by population group (NDM IDP, 2024)

Population group	Frequency	Percentage
Black African	8 792	5.9%
Coloured	127 288	85.5%
Indian/Asian	9 60	0.6%
White	11 186	7.5%
Other	6 31	0.4%

The demographic pyramid clearly shows that the senior age groups, particularly males are declining relative. It is important to consider the implications of this trend on social services and healthcare for different age groups. This trend is indicative of a shrinking aging population and a growing younger population which may have implications for healthcare, social security, and workforce dynamics in the future. This information could be useful and valuable for future planning and/or resource allocation within Namakwa.

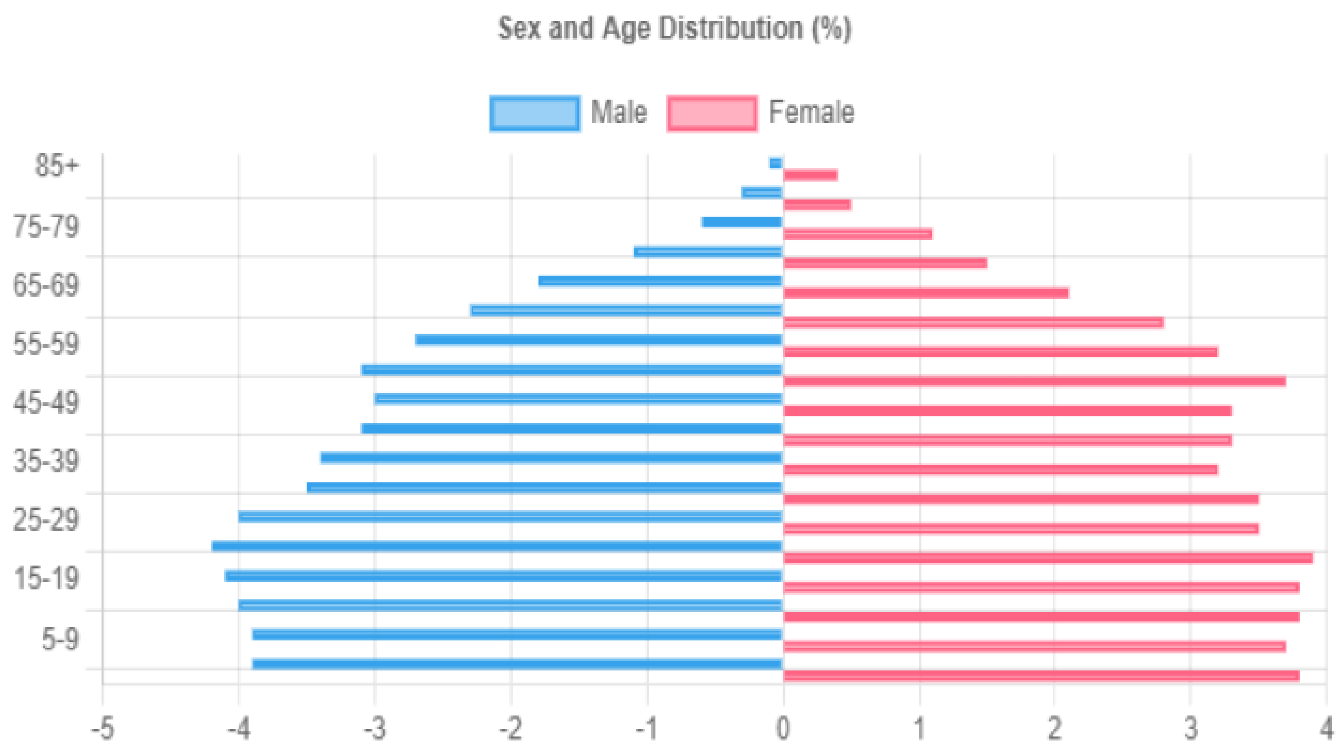


Figure 38: Namakwa population pyramid (NDM IDP, 2024)

According to the following figure, secondary education is the highest level of education in Namakwa. The second largest category is grade 12, whereas higher education is comparatively low at 6.2%. This suggests that a significant portion of the population in Namakwa has completed their secondary education, with fewer individuals enrolling for higher education. This data suggests that there is a drop-off in attendance at higher education levels.

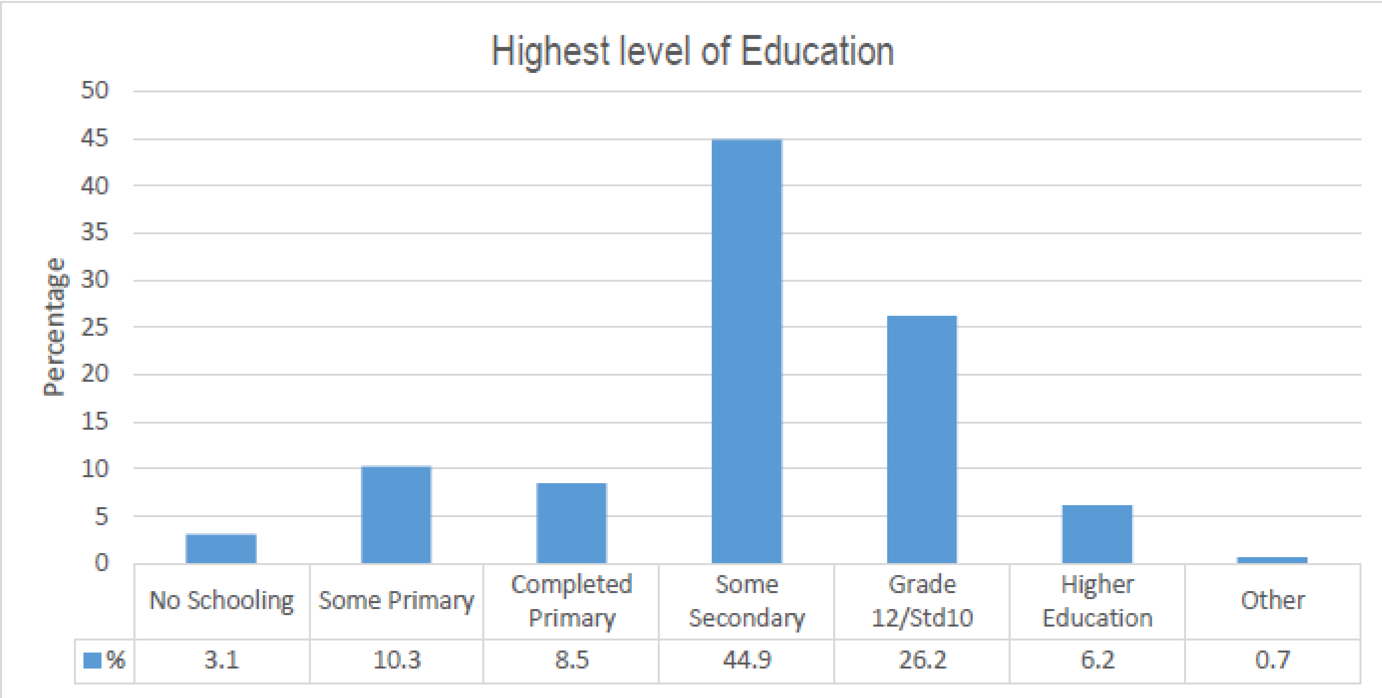


Figure 39: Namakwa highest level of education (NDM IDP, 2024)

(b) Description of the current land uses

<u>TUSSCHEN-IN NO 143</u>

As mentioned earlier the Grasvlakte/Eksteensfontein gravel road passes through the farm Tusschen-In No 143. The farm is mainly used for livestock grazing. The following image shows the land capability of the farm Tusschen-In No 143 as presented in the DFFE Screening Report.

Figure 40: Agricultural Theme Sensitivity of the farm Tusschen-In No 143 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 Tusschen-In No 143.

Table 14: Land uses and/or prominent features that occur within/within 500 m radius of the application area on Tusschen-In No 143.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	YES	-	The study area is highly natural, being 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	No formal diggings were identified in the area.
Dam or reservoir	YES	-	Various farm dams/reservoirs occur within the prospecting footprint and surrounds.
Hospital/medical centre	-	NO	-
School/ crèche	-	NO	-
Tertiary education facility	-	NO	-

<table>
<tr><th>LAND USE CHARACTER</th><th>YES</th><th>NO</th><th>DESCRIPTION</th></tr>
<tr><td>Church</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Old age home</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Sewage treatment plant</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Train station or shunting yard</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Railway line</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Major road (4 lanes or more)</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Airport</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Harbour</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Sport facilities</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Golf course</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Polo fields</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Filling station</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Landfill or waste treatment site</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Plantation</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Agriculture</td><td>**YES**</td><td>-</td><td>The study area is used for agricultural purposes.</td></tr>
<tr><td>River, stream, or wetland</td><td>**YES**</td><td>-</td><td>Various drainage lines do occur on the farm, albeit mostly dry, with a tributary of the Kowiep River passing through the southern part of the farm.</td></tr>
<tr><td>Nature conservation area</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Mountain, hill, or ridge</td><td>**YES**</td><td>-</td><td>Various mountains, hills and ridges occur on the farm especially in the eastern corner along and the western boundary.</td></tr>
<tr><td>Museum</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Historical building</td><td colspan="3">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.</td></tr>
<tr><td>Protected Area</td><td>-</td><td>**NO**</td><td>-</td></tr>
<tr><td>Graveyard</td><td colspan="3" rowspan="2">A historical farmhouse, historical water reservoir, and low density MSA and LSA scatter were identified by the archaeologist. Furthermore, a roadside memorial (Mansie & Kitty Basson, 2002) was noted in the road reserve.

The presence of additional graves and/or archaeological sites will 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.</td></tr>
<tr><td>Archaeological site</td></tr>
<tr><td>Other land uses (describe)</td><td>-</td><td>**NO**</td><td>-</td></tr>
</table>

AARDVARK NO 164

The R382 connecting Steinkopf with Port Nolloth passes through the farm Aardvark No 164. The farm is used for livestock. The following images show the land capability of the farm Aardvark No 164 as presented in the DFFE Screening Report.

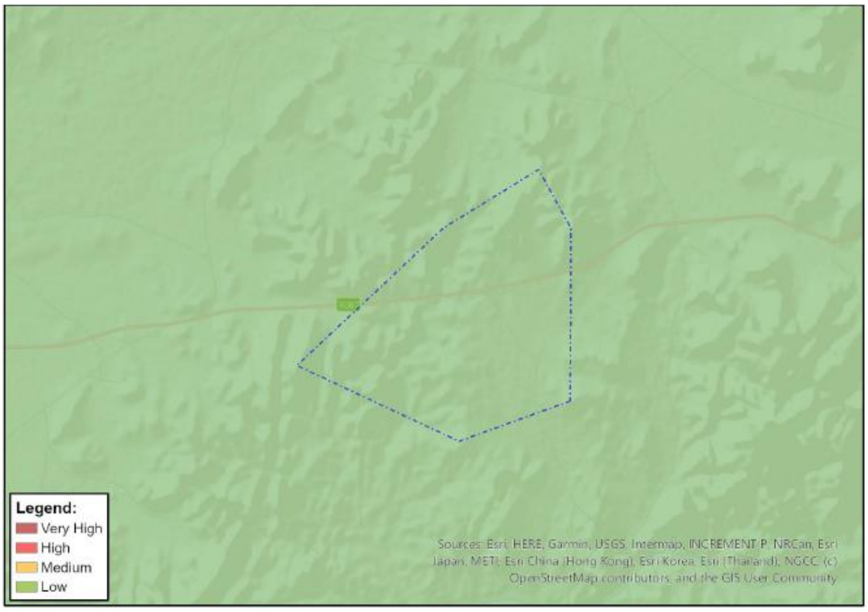


Figure 41: Agricultural Theme Sensitivity of the farm Aardvark No 164) according to the DFFE screening report.

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 Aardvark No 164.

Table 15: Land uses and/or prominent features that occur within/within 500 m radius of Aardvark No 164.

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is highly natural, 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**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Quarry, sand or borrow pit	-	**NO**	No formal mining areas were noted on/near the application area.
Dam or reservoir	**YES**	-	Various farm dams/reservoirs 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 R382 provincial road passes through the farm connecting Steinkopf with Port Nolloth.
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 farm is used for agricultural purposes.
River, stream, or wetland	**YES**	-	Various drainage lines/streams do occur on the farm, albeit mostly dry.
Nature conservation area	-	**NO**	
Mountain, hill, or ridge	**YES**	-	Hills and ridges are prevalent along the western section of 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	A historical well or prospecting pit, small degraded historical grave, and a historical dipping trench were identified on the farm Aardvark No 164. The historical road and railway connecting Steinkopf and Port Nolloth also traverse the farm. The presence of additional graves and/or archaeological sites will 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.		
Archaeological site			
Other land uses (describe)	-	**NO**	-

STEENBOK NO 165 AND FARM NO 166 (GIFKOP)

As with the other farms, Steenbok No 165 and Farm No 166 (Gifkop) are used for livestock grazing. The following images show the land capability of the farms Steenbok No 165 and Farm No 166 (Gifkop) as presented in the DFFE Screening Report.

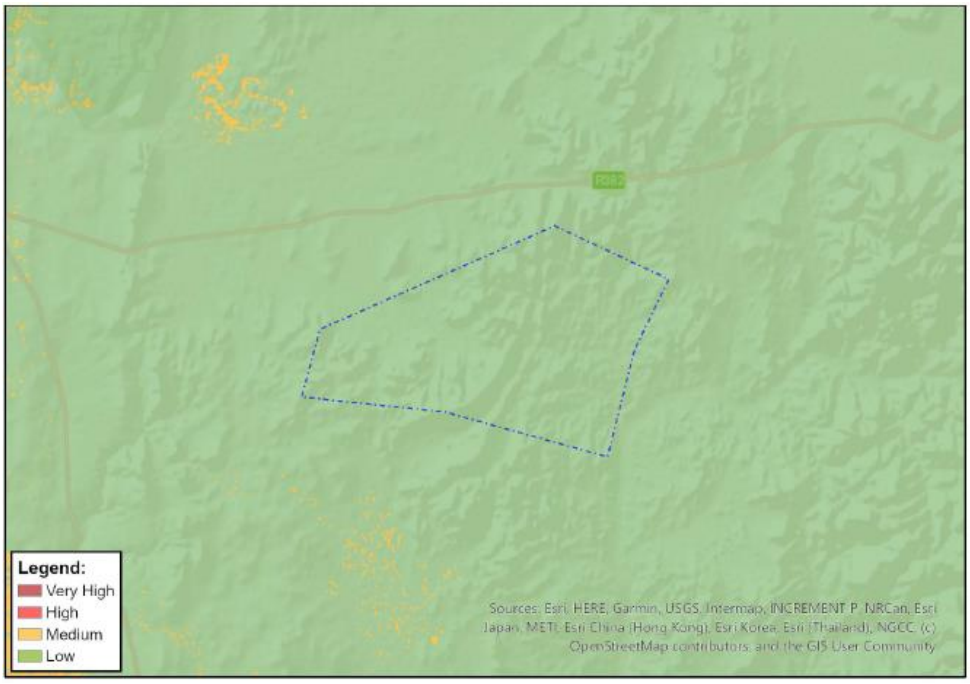


Figure 42: Agricultural Theme Sensitivity of the farms Steenbok No 165 and Farm No 166 (Gifkop) according to the DFFE screening report.

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 Steenbok No 165 and Farm No 166 (Gifkop).

Table 16: Land uses and/or prominent features that occur within/within 500 m radius of Steenbok No 165 and Farm No 166 (Gifkop).

LAND USE CHARACTER	YES	NO	DESCRIPTION
Natural area	**YES**	-	The study area is highly natural 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**	-

LAND USE CHARACTER	YES	NO	DESCRIPTION
Military or police base / station / compound	-	NO	-
Spoil heap or slimes dam	-	NO	-
Quarry, sand or borrow pit	-	NO	No formal diggings were noted.
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 used for agricultural purposes.
River, stream, or wetland	YES	-	Various drainage lines/streams occur on the farms with the Kwaganap River originating in the south-western corner of Steenbok No 165.
Nature conservation area	-	NO	-
Mountain, hill, or ridge	YES	-	A mountain range passes through the centre of the two farms with various hills and ridges occurring on its opposite sides.
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 Archaeological site	The archaeologist identified a degraded farmstead of modern origin on the farm. The presence of additional graves and/or archaeological sites will 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	-

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

SPECIFIC ENVIRONMENTAL FEATURES

SITE SPECIFIC TOPOGRAPHY

TUSSCHEN-IN NO 143

The site specific topography of the farm Tusschen-In No 143 is highly undulating rising from the south-western corner (403 mamsl) towards the hills in the eastern part of the farm. A range of hills also border the western boundary of the farm rising to a high point in the northern corner (671 mamsl). The mean elevation of the farm along the route presented in the following figure is 479 m. As shown in the following figure the elevation gain of the selected route is 947 m over 14.5 km, the elevation profile shows a maximum slope of 67.4% with an average slope of 11.7%.

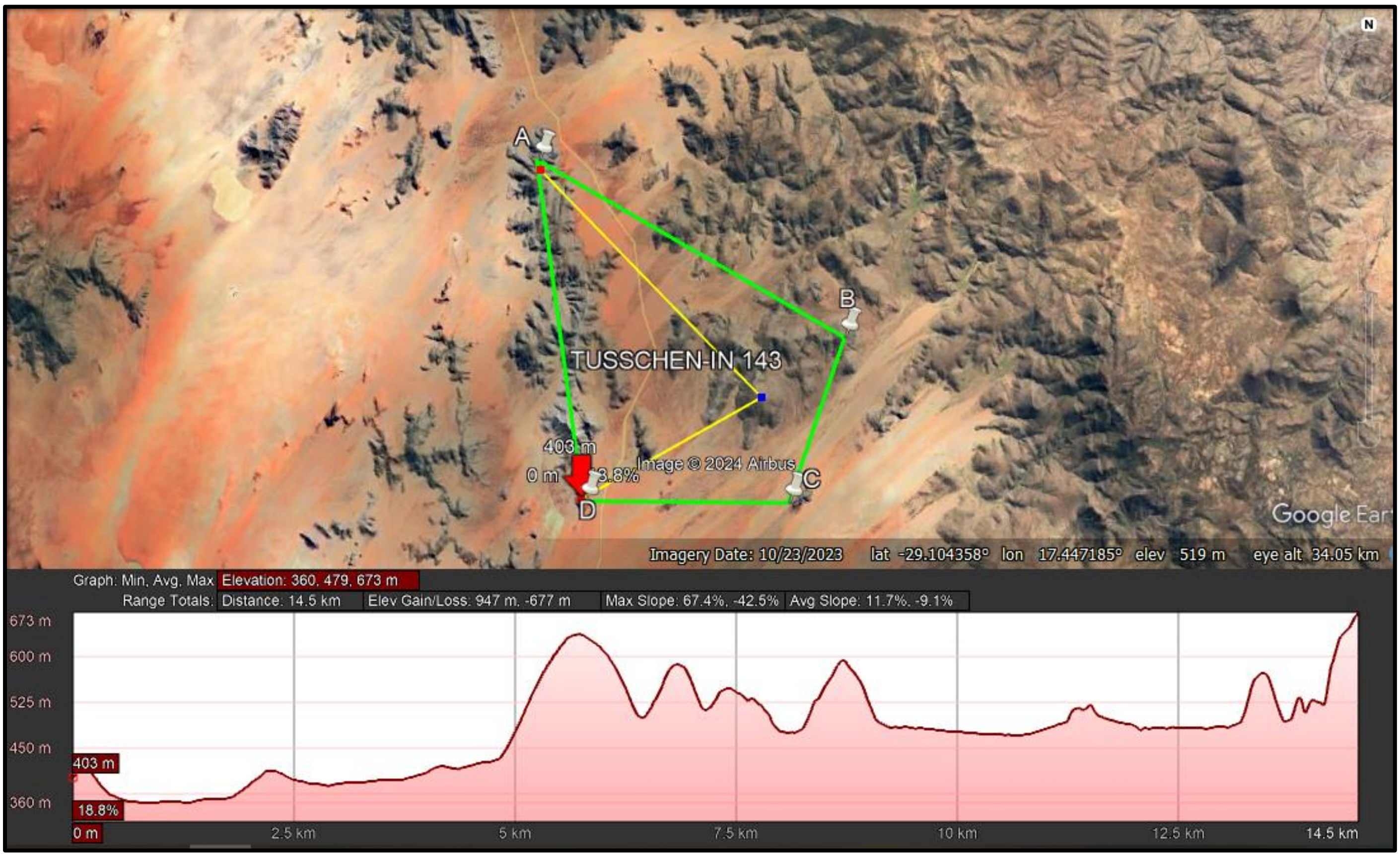


Figure 43: Elevation profile of the farm Tusschen-In No 143 (image obtained from Google Earth).

AARDVARK NO 164

The site specific topography of the farm Aardvarkl No 164 undulates along the western portion of the farm (as presented below), while the eastern section of the farm is relatively flat. The mean elevation of the farm (along the chosen route) is 326 m. As shown in the following figure the elevation gain of the chosen route is 899 m over 20.4 km, the elevation profile shows a maximum slope of 40.5% with an average slope of 9.3%.

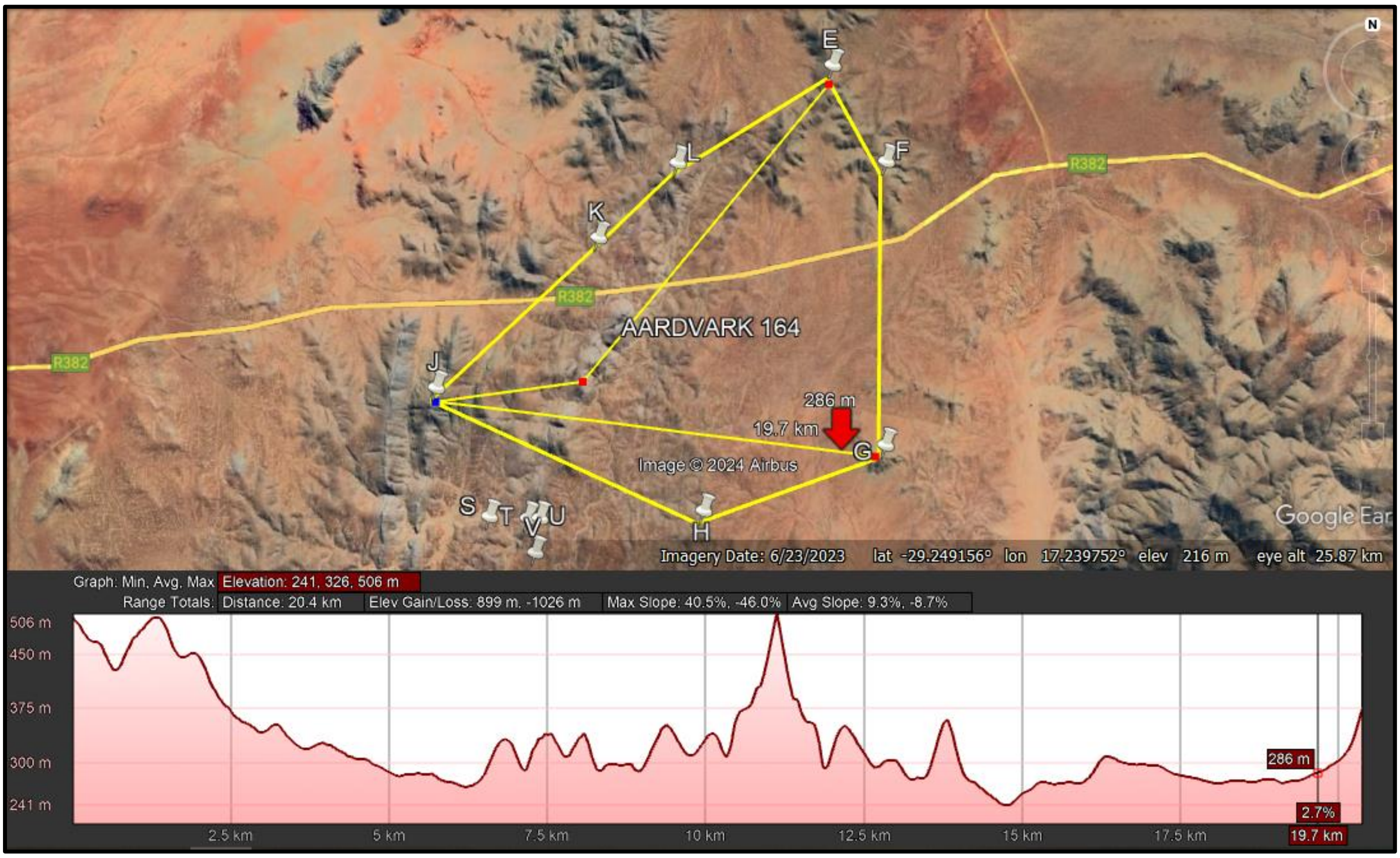


Figure 44: Elevation profile of the farm Aardvark No 164 (image obtained from Google Earth).

<u>STEENBOK NO 165 AND FARM NO 166 (GIFKOP)</u>

The site specific topography of the farms Steenbok No 165 and Farm No 166 (Gifkop) is highly undulating with a mountain range crossing through the centre of the study area as indicated in the following figure. The mean elevation of the farms is 286 m over the selected route (as presented below). As shown in the following figure the elevation gain of the route is 858 m over 30.6 km, the following elevation profile shows a maximum slope of 33.0% with an average slope of 5.6%.

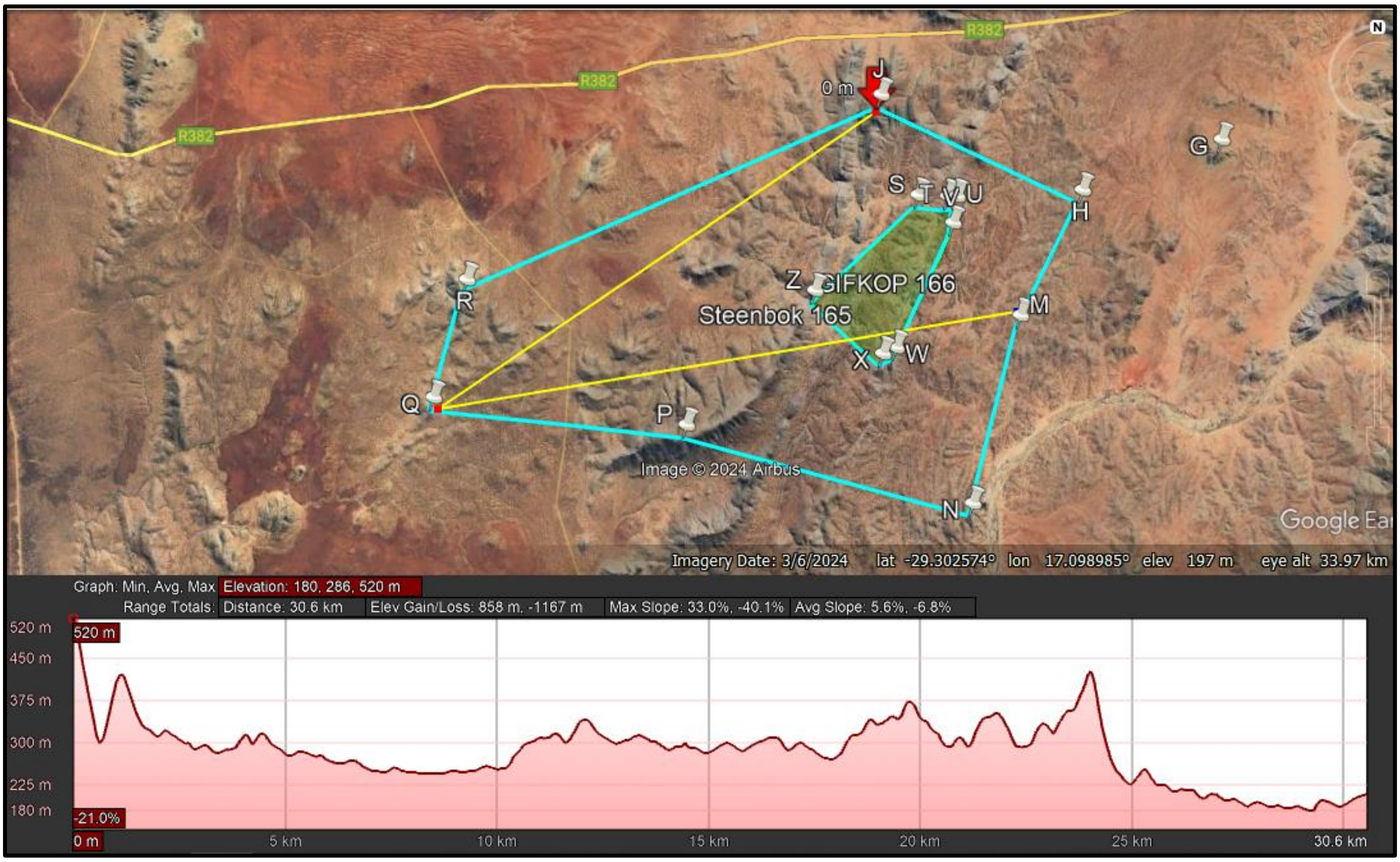


Figure 45: Elevation profile of the application area on the farms Mahura Muthla No 198 and Mora Schuba No 201 (image obtained from Google Earth).

Conclusion

The prospecting activities will not impact the topography of the area as all boreholes will be capped, and the trenches (if applicable) will be refilled after sampling. The potential for the prospecting activities to negatively impact the topography of the study area is of very 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 ±21 217 ha and includes five (5) properties (farm portions and remaining extends) of which ±2 300 ha's target areas where identified. The study area is scarcely populated, and as mentioned earlier, the area of disturbance per drill is expected to be ±300 m² 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 comprise 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.

Apart from traffic passing through the farm Aardvark No 164 along the R382, and vehicles travelling to either Wolfberg or Grasvlakte/Eksteensfontein the remaining areas are remote, rural, and has very little dust/noise generators. The farm residences are few and widely distributed across the proposed prospecting area.

All prospecting will take place during normal work hours, and noise stemming from the operation will be highly localised. The dust emissions and/or noise levels that may arise from the proposed prospecting activities, if mitigated by the Applicant as proposed in this document, will therefore have a low impact on the receiving environment.

SITE SPECIFIC GEOLOGY AND SOIL

(Information obtained from the Strata Energy Minerals Resources (Pty) Ltd – Namaqua PR Literature Review & Target Generation on Prospecting Right NC 30/5/1/1/2/14344 PR compiled by Minrom Consulting (Pty) Ltd in 2025 attached as Appendix E)

NOTE: The Remote Sensing Report is based on regional geology and historical information but does not provide sufficient information to determine the exact minerals or mineralization and this can only be done through physical geological ground proving and thus proposed targets may change once the necessary geological work has been done.

Minrom Consulting (Pty) Ltd was commissioned to investigate mineral potential for the mineralisation potential within this prospecting right application area.

Project History

The Minrom study notes that the nomadic inhabitants of Namaqualand, the Nama people, are known to have mined, smelted, and worked copper for thousands of years prior to the arrival of Jan van Riebeeck in Table Bay in 1652, as documented by the Dutch East India Company. This copper artifacts was the first metal to draw the attention of the Dutch settlers. In 1685, the Governor Simon van der Stel led an expedition to the north where he located the source of the Namaqua copper near Springbok. However, the region was arid and despite very encouraging sample results, the copper deposits could not be mined until 1846. According to the 1:250 000 Springbok Geological map (2916), garnet and kyanite has been found on the farm Steenbok No 165 at two places, closely associated with the Nakanas Formation that consists of a garnet-staurolite-kyanite schist.

A total of 33 drill holes have been drilled previously by Anglo American on the farm Tusschen-In No 143 as obtained from the Council of Geoscience (CGS). Of the 33 boreholes, 27 holes intersected uranium-bearing rock. These boreholes were drilled down to 150 metres depth, but no further information is available. No historical data of any mining nor prospecting data on any of the other farms within the Project Area could be found.

Summary of the Adjacent Properties

The farm Meidjes Karroo Reserve No 191, located immediately south of the farm Steenbok No 165, hosts known occurrences of garnet and kyanite. These occurrences are closely associated with the Nakanas Formation, a significant lithostratigraphic unit in the region. Specifically, the Nakanas Formation on Meidjes Karroo Reserve No 191 is described as a garnet-staurolite-kyanite schist, indicating a metamorphic origin and a geological environment conducive to the formation of these indicator minerals. The presence of multiple occurrences of garnet and kyanite within this formation on the adjacent property strengthens the potential for similar mineralisation to extend into the target farm of Steenbok No 165. The broader area around Steinkopf is also known for pegmatite occurrences, with the Norrabees Mine (lithium and tantalum) located nearby and the historical Blesberg Mine (lithium and tantalum) situated ±40 km to the north. These operations highlight the potential for pegmatite-hosted mineralisation in the region.

The adjacent farm Nakanas 171, situated to the southwest of Steenbok No 165, also exhibits mineral occurrences of interest. Historical exploration or geological mapping has identified the presence of garnet and kyanite at one location on this farm. Similar to Meidjes Karroo Reserve 191, these occurrences are associated with the Nakanas Formation, further highlighting the regional significance of this geological unit for hosting these metamorphic minerals.

Furthermore, Nakanas 171 is reported to host alluvial diamond(s) at another location, associated with Recent Sediments. This indicates the potential for secondary diamondiferous deposits within the broader area, possibly derived from upstream primary sources that may or may not be located within the immediate vicinity. The town of Port Nolloth, situated to the west, has a long history of diamond mining, both onshore and offshore, with operations currently being conducted by entities like Alexkor. Additionally, the Walviskop Heavy Mineral Sands operation (garnet, ilmenite, zircon, rutile) near Alexander Bay, north of Port Nolloth, indicates the presence of other valuable mineral deposits in the coastal region.

Copper Occurrences

The Project Area is surrounded by copper deposits and occurrences but not part thereof. This indicates the possibility of finding a copper deposit within the target area if scientific exploration method is applied; however, the anticipation thereof is low.

Local Geology

The regional geological framework of the Namaqua-Natal Province, with its complex history of orogenic events and terrane assembly, provides the overarching context for understanding the more localised geological setting of the Project Area. Specifically, the project's location within the Northern Cape places it within the Namaqua Sector, a key portion of this extensive Mesoproterozoic orogenic belt, which is characterized by distinctive lithostratigraphic components and structural fabrics that will likely be reflected in the local geology of the target farms.

The geology consists of three high grade metamorphosed volcanic/sedimentary layers of rock intruded by three granitoid bodies during high grade metamorphism (following figure). The rock layers have a basic north-northeast strike and dips to the west at a dip of 60 – 75°. The rock in and around the Project Area consists of high-grade metamorphic rock, made up of high pressure and temperature gneiss and schist. However, volcanic-sedimentary sequences could still be distinguished from plutonic magmatic rock by size, shape and field relations. Layered sequences maintained their layered nature while plutonic magmatic rock cuts through the layered sequences.

Therefore, gneisses could be distinguished as formerly volcanic-sedimentary or plutonic.

The oldest rock formation in the Project Area is the Steinkopf Gneiss of the Gladkop Metamorphic Suite which consists of fine-grained grey, banded to massive biotite-hornblende gneiss.

The Steinkopf Gneiss is overlain by the Noenoemaasberg Gneiss of the Gladkop Metamorphic Suite which consists of a fine-grained sillimanite bearing gneiss. Weathered rock shows a pink colouring. The presence of sillimanite indicates high pressure and high temperature metamorphism at the peak of the Namaqualand-Natal metamorphic cycle.

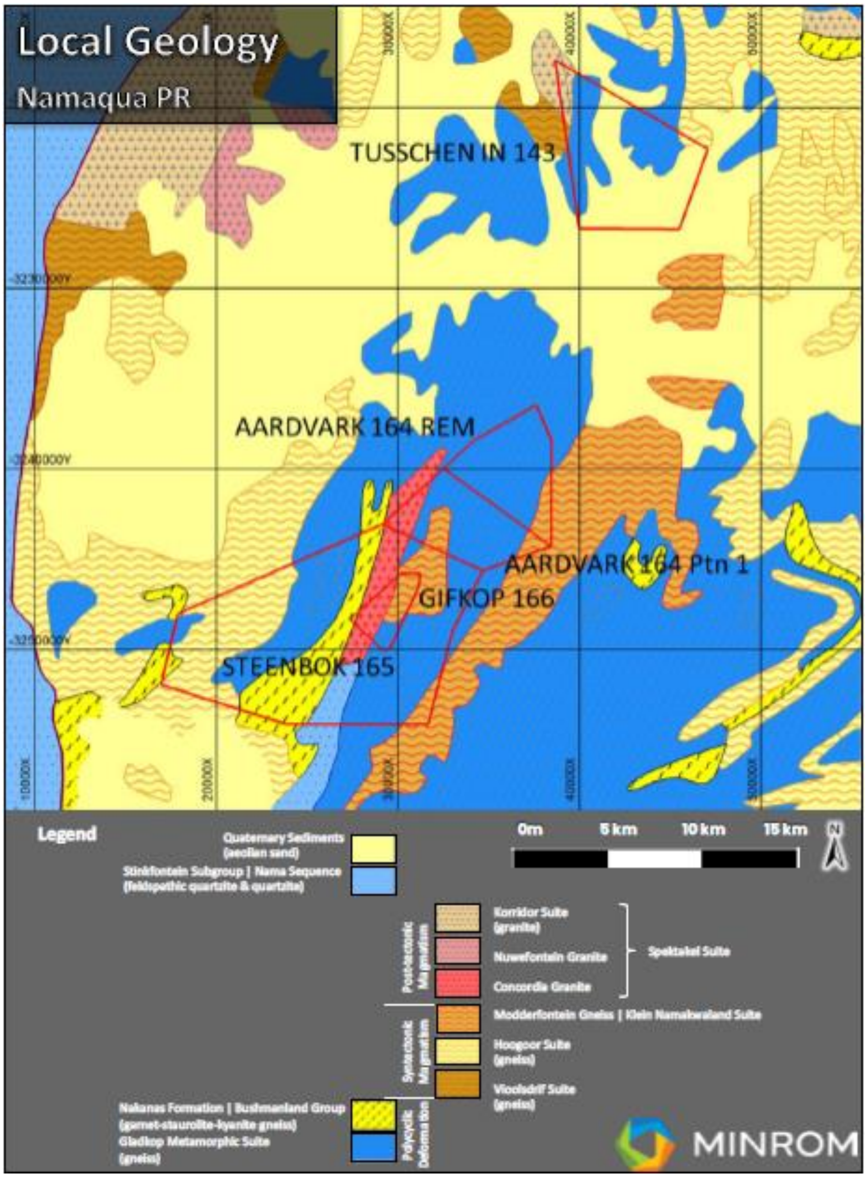


Figure 46: Local geological map (Minrom).

The Noenoemansberg Gneiss is overlain by the Nakanas Formation of the Boesmanland Group. It consists of a garnet-staurolite-kyanite schist. The presence of kyanite indicates high pressure with medium temperature metamorphism of the rock.

This metamorphosed volcanic-sedimentary sequence was intruded by three (3) granitoid bodies in the later stages of the metamorphic cycle:

- First was the Modderfontein Gneiss which consists of a leucocratic augen gneiss.
- Then the Concordia Granite intruded comprising a medium-grained leucocratic granite which already shows faster cooling times nearing the end of the metamorphic cycle.
- Lastly the Nuwefontein granite were intruded which consists of a medium-grained hornblende granite. Faster cooling at the end of the metamorphic cycle facilitated the medium-sized crystals in the granite.

Remote Sensing

Remote sensing is a term used to describe the process of investigating a specific area without physically interacting with the formations or geology. In this case, remote sensing made use of the reflective light spectrum including near- and long-wave infrared light. Due to the size of the Project Area, remote sensing was performed to identify exploration targets.

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 areas in the application footprint. 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.

Target Generation and Ranking

Target areas are indicated on Figures 3 & 5 above. Targets have been selected based primarily on the prominence on the satellite image which shows the most detail, and, secondly, on the area of the target.

The historical Anglo American drill holes on the farm Tusschen-In No 143, were drilled on identified target areas 1 and 6, which is situated on the Gladkop Metamorphic Suite.

Based on the mineralisation model, and the results and interpretations from the remote sensing study, all farms are considered prospective; however, only for industrial mineralisation or uranium mineralisation. The possibility of copper, or pegmatite mineralisation (Sn, Ta, W, Li) is possible; however, the remote sensing and regional data did not indicate any direct targets.

These targets could be ranked as follows, although the rankings are subjective as most have similar prospectivity:

Table 17: Ranked exploration target areas (Minrom).

Target #	Farm
1	Tusschen In 143
2	Steenbok 165
3	Aardvark 164 Ptn 1
4	Steenbok 165
5	Steenbok 165
6	Tusschen In 143
7	Steenbok 165
8	Gifkop 166
9	Gifkop 166
10	Gifkop 166

Conclusion and Recommendations

Minrom concluded that the proposed PR footprint has reasonable potential for industrial minerals such as garnet, kyanite, and sillimanite, which are known to occur in the region and on adjacent properties. These targets were particularly associated with the Nakanas Formation and, so, the target areas were defined along this geological unit.

The Project does not have direct indications for copper or pegmatite mineralisation, as observed in the remote sensing and regional data analysed; however, based on the limitations of the desktop aspects of the study, it is recommended that reconnaissance geological mapping and sampling be performed to directly inspect the potential for industrial minerals and any indications of base or precious metals.

Since the mineralisation potential supports additional exploration, the following high-level (overview) exploration strategy has been defined:

Table 18: Proposed exploration strategy (Minrom).

• **Phase 1 - Literature review & Target generation** ○ Review all available project data ○ Develop mineralisation model which can be applied to search for the target commodity anywhere the geological setting ○ Generate exploration targets ○ Rank exploration targets	**Complete**
• **Phase 2 – Field Verification** ○ Site investigation to determine if the target areas contain any commercial mineralisation ○ Surface sampling (representative samples) ▪ Consider soil sampling to determine the presence of copper	**Proposed Next Phase**

SITE SPECIFIC HYDROLOGY

(Information obtained from the Terrestrial Desktop Sensitivity for a Prospecting Right Application for Targeted Blocks on Farms Tusschen In 143, Aardvark 164, Steenbok 165, and Gifkop 166 near Steinkopf, Northern Cape Province, South Africa attached as Appendix F)

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 results of the DFFE Screening Report corresponds with the findings of the SANBI Mapviewer in that the River FEPAs sections of the farms (according to SANBI) corresponds with the areas of very high sensitivity as per the DFFE Screening Report.

Figure 47: Aquatic biodiversity theme sensitivity of Tusschen-In No 143 according to the DFFE screening report.

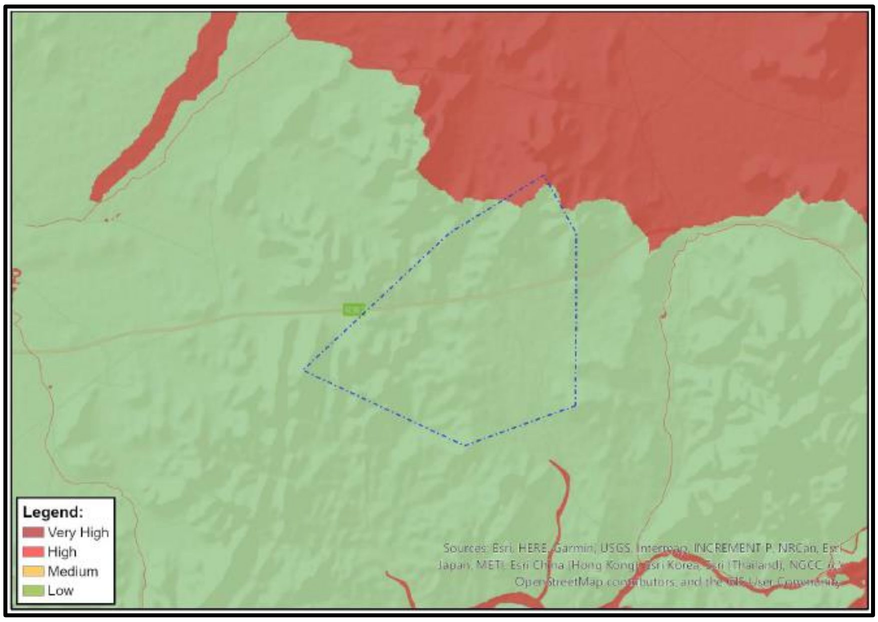


Figure 48: Aquatic biodiversity theme sensitivity of Aardvark No 164 according to the DFFE screening report.

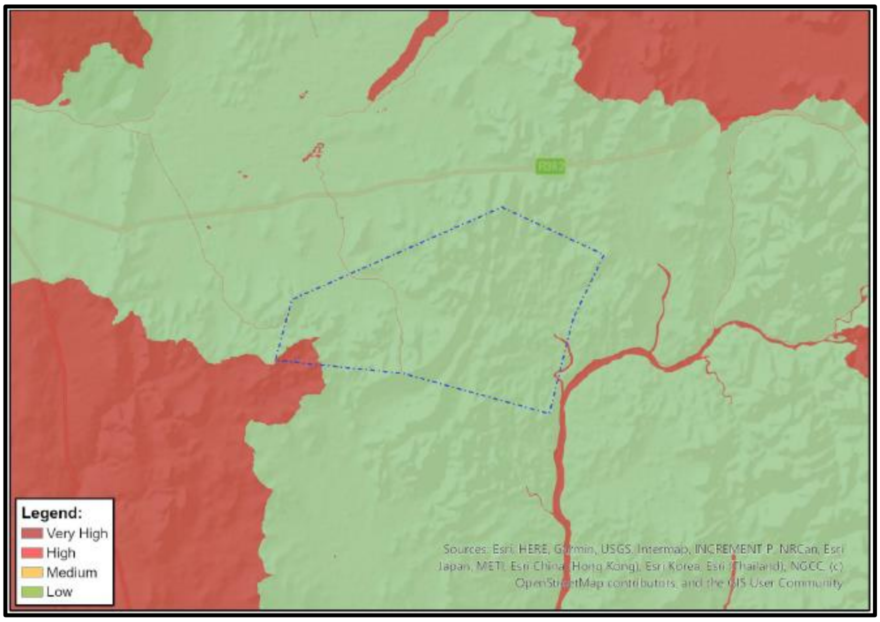


Figure 49: Aquatic biodiversity theme sensitivity of Steenbok No 165 and Farm No 166 (Gifkop) according to the DFFE screening report.

Hydrological Features

As part of the initial planning phase, the Applicant aimed to gain a deeper understanding of the freshwater (wetlands/rivers) and terrestrial habitats within properties identified to implement best impact avoidance and minimization measures through careful planning.

EcoFloristix was appointed to provide a professional opinion on terrestrial (including hydrology) biodiversity issues related to the proposed activities within the Project Area. The specialist combined spatial data from (amongst others) Red List of Ecosystems, Critical Biodiversity Areas, National Protected Area Expansion Strategy (NPAES) Focus Areas, and National Biodiversity Assessment (NBA) Protected Areas, the likely occurrence of threatened plant species, NFEPA, SWSA and watercourse localities into a single output layer of sensitivities. In addition, buffer zones were placed around occurrences of threatened plant species and watercourses. The various combinations were then classified, and giving priority to certain layers (for example, Critically Endangered and Endangered ecosystems are always classified as Very High in sensitivity).

Although the study focused on the target areas identified by Minrom, it was considered that the occurrence of copper and sulphides can only be determined by ground truthing, and that soil sampling can only take place once a prospecting right is approved. Thus, the target areas as determined by the Minrom report may differ after ground truthing, and to mitigate this, a certain amount of latitude was incorporated into the EcoFloristix report by assessing sensitivities beyond the target area boundaries.

The following figure shows the hydrological setting of the project area and surrounds in the context of NFEPA rivers, SWSA, and the South African Inventory of Inland Aquatic Ecosystems (SAIIAE).

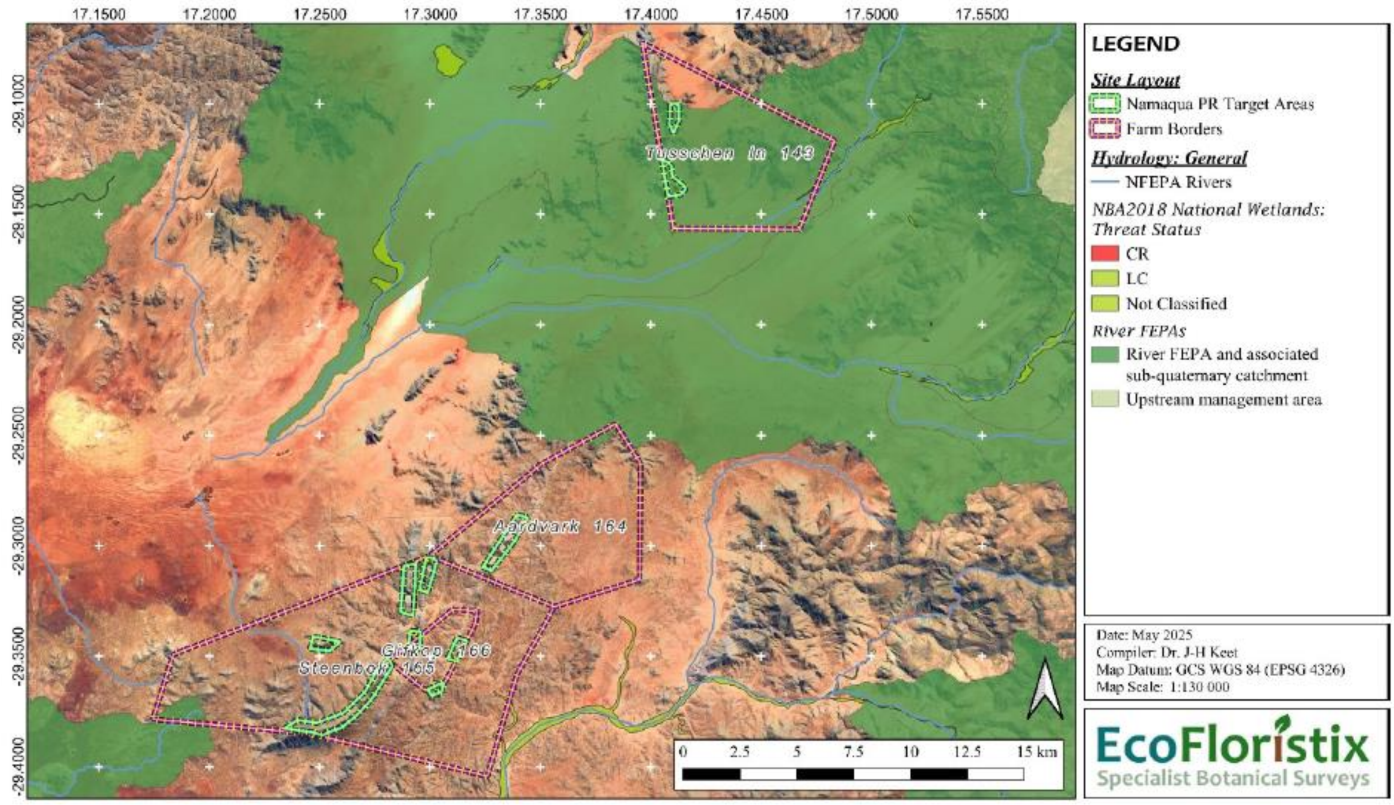


Figure 50: Hydrological setting of the project area as presented by EcoFloristix

As mentioned earlier, the target areas are not located within any SWSA areas and do not occur near any threatened rivers as determined by NFEPA. An unnamed NFEPA river originates within the southwest part of target area 2 on the farm Steenbok No 165. The majority of Tusschen-In No 143 (including target areas 1 and 6) and a part of the southwestern corner of Steenbok No 165 (excluding any target areas) extends across areas classified as a river FEPA.

Note that NFEPA rivers and river FEPAs differ from each other 'n a key way: an NFEPA river specifically refers to the river itself (represented by lines in Figure 50), whereas a river FEPA refers to a geographical area — more specifically a sub-quaternary catchment (represented by polygons in Figure 50) — that has been earmarked to achieve biodiversity targets for river ecosystems and threatened/near threatened fish species. Essentially, a river FEPA is a management unit that includes NFEPA rivers (or portions of them) and the surrounding land that drains into them. Given the highly localized nature of prospect drilling, the proposed activities will not have any major impacts on these specific hydrological features.

EcoFloristix also consulted the National Wetlands Map and found that the target areas do not contain any wetlands (whether natural, artificial, or unclassified), nor do it occur near any wetlands.

As shown in Figures 4, 6 & 7 above, all watercourses were buffered by 32 m so that these sensitive habitats can be adequately avoided. Although a 32 m buffer was deemed adequate for avoiding sensitive watercourse habitats, it must be noted that any listed activity proposed within a 100 m of a watercourse will require a water use authorisation from the DWS.

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 rating, which has several sensitivity classes to inform siting of prospecting pits, EcoFloristix classified all watercourses with their buffers as having a Very High sensitivity, to be avoided wherever possible.

Conclusion

The sensitivity layers created for the identified hydrological features in the initial phase are crucial for planning purposes. It is imperative to avoid sensitive areas, particularly those classified as 'Very High' sensitivity, to protect the environment and minimize project risks.

SITE SPECIFIC GROUNDCOVER, FAUNA, AND BIODIVERSITY CONSERVATION

(Information obtained from the Terrestrial Desktop Sensitivity for a Prospecting Right Application for Targeted Blocks on Farms Tusschen In 143, Aardvark 164, Steenbok 165, and Gifkop 166 near Steinkopf, Northern Cape Province, South Africa attached as Appendix F)

The DFFE Screening Report classifies the site specific plant species theme sensitivity, and the terrestrial biodiversity theme sensitivity of the proposed prospecting footprint as presented in the following figures.

Figure 51: Map of the relative plant species theme sensitivity (left pane) and the terrestrial biodiversity theme sensitivity (right pane) of Tusschen-In No 143 according to the DFFE screening tool.

As presented in the previous figure the plant sensitivity of the farm Tusschen-In No 143 is deemed Medium, while the CBA status of the farm and the presence of the FEPA result in a Very High sensitivity classification in terms of terrestrial biodiversity.

The same applies to the farms Aardvark No 164, Steenbok No 165 and Farm No 166 (Gifkop) as presented below.

Figure 52: Map of the relative plant species theme sensitivity (left pane) and the terrestrial biodiversity theme sensitivity (right pane) of Aardvark No 164 according to the DFFE screening tool.

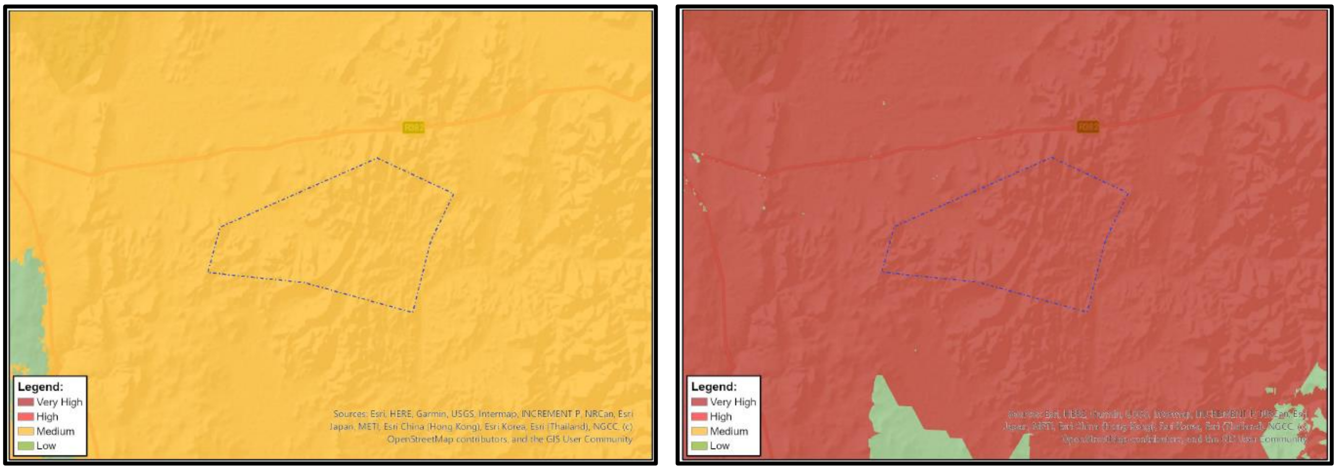


Figure 53: Map of the relative plant species theme sensitivity (left pane) and the terrestrial biodiversity theme sensitivity (right pane) of Steenbok No 165 and Farm No 166 (Gifkop) according to the DFFE screening tool.

Species of Conservation Concern (SCC) and General Species of Occurrences

As mentioned earlier, EcoFloristix combined spatial data from (amongst others) Red List of Ecosystems, Critical Biodiversity Areas, National Protected Area Expansion Strategy (NPAES) Focus Areas, and National Biodiversity Assessment (NBA) Protected Areas, the likely occurrence of threatened plant species, NFEPA, SWSA and watercourse localities into a single output layer of sensitivities. In addition, buffer zones were placed around occurrences of threatened plant species and watercourses. The various combinations were then classified, and giving priority to certain layers (for example, Critically Endangered and Endangered ecosystems are always classified as Very High in sensitivity).

SCC that may potentially occur in the Project Area and surrounds, as predicted by online databases, were listed by the specialist and presented in the following image.

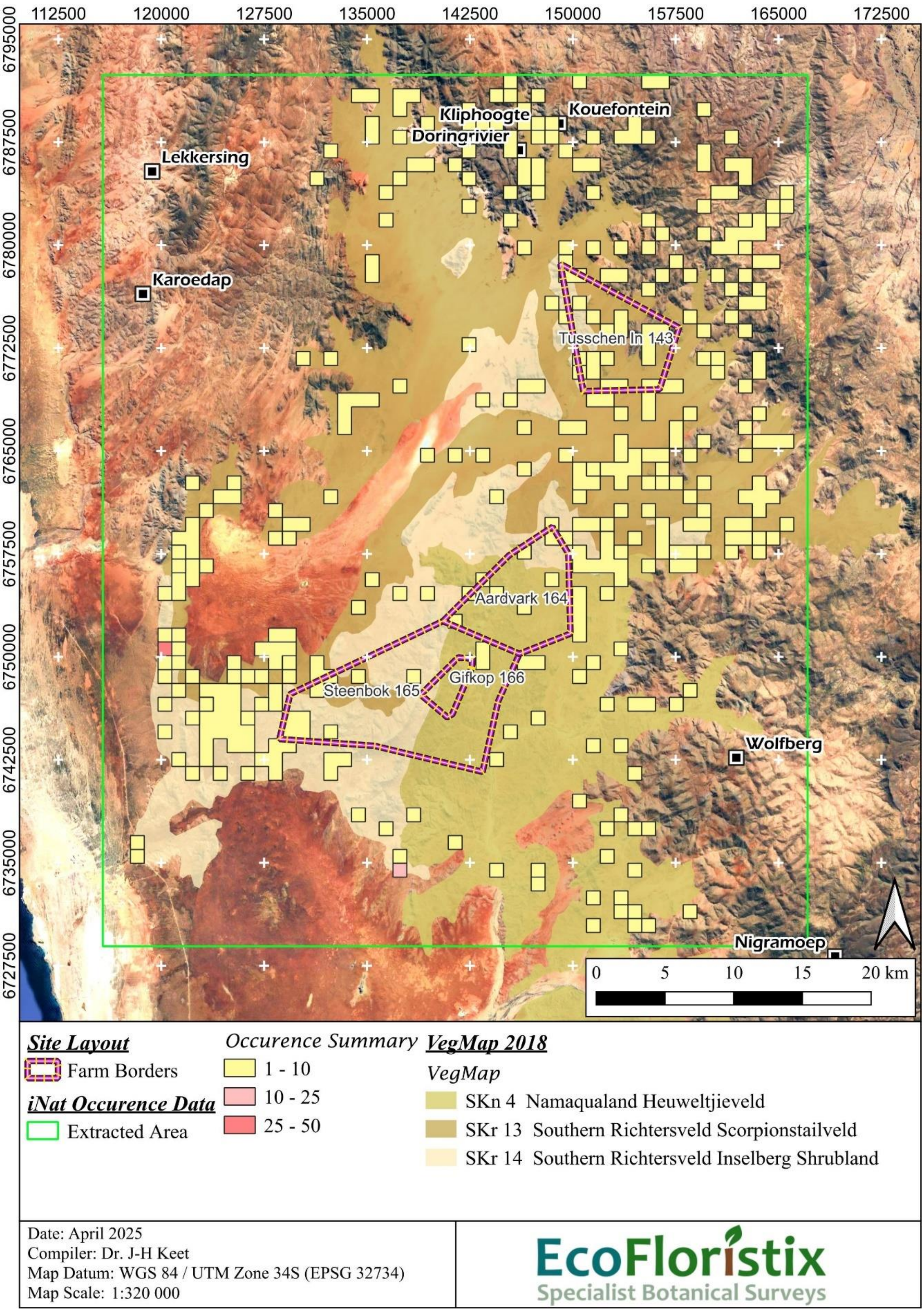


Figure 54: Plant species occurrence data from iNaturalist, displayed as the number of records per each 1 x 1 km grid square (i.e., the small square blocks). Also shown are the mapped vegetation types (from VegMap) underlying the Project Area. (EcoFloristix)

A combined total of 1 989 records were extracted from the online databases. These records consisted of a combined total of 1 730 plant species that have been recorded within the extracted area with the top three representative families being Aizoaceae (254 spp.), Asteraceae (244 spp.), and Crassulaceae (95 spp.).

This list included a total of 203 SCC, including 99 threatened species. It should be noted that the high number of SCC is likely due to the use of an excessively large area for species record collection. Consequently, it is highly improbable that many of these species would be present within the target areas. A total of 482 protected plant species are listed, consisting of 479 provincially protected species and 3 nationally protected trees. Finally, the online screening report also revealed the potential presence of 25 Sensitive Species (some of these might have been included in the other online databases). It is anticipated that additional fieldwork will be necessary at selected prospecting sites to confirm the presence of SCC's. This fieldwork will provide essential data for refining ecological sensitivities.

Ecosystem Threat Status

According to the Red List of Ecosystems for South Africa (2021) spatial dataset the Project Area and all the target areas overlap Least Concern ecosystem types, namely Namaqualand Heuweltjieveld, Southern Richtersveld Scorpionstailveld, and Southern Richtersveld Inselberg Shrubland (see following figure).

Given that these areas are listed as Least Concern, and the fact that their current extents far surpass proposed conservation targets they are unlikely to be impacted to any significant degree by prospecting activities.

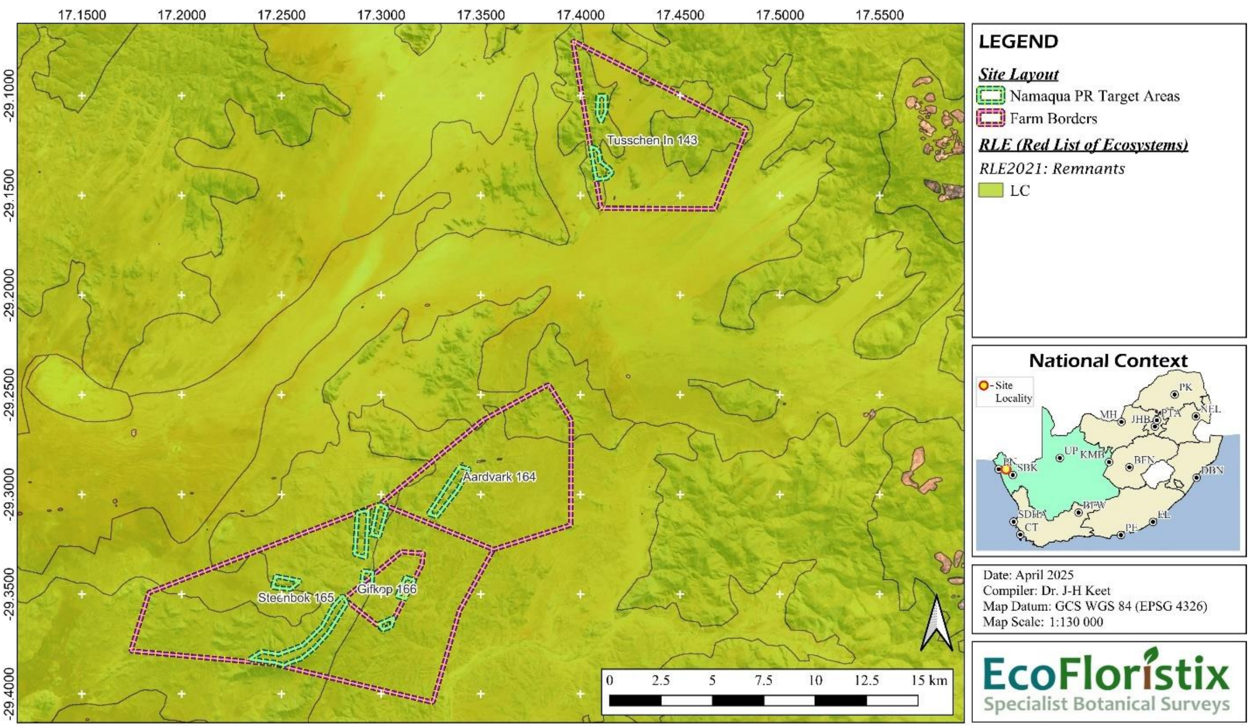


Figure 55: Ecosystem Threat Status, according to the Red List of Ecosystems for South Africa (2021), associated with the Project Area and surrounds. (EcoFloristix)

Critical Biodiversity Areas (CBA) and Ecological Support Areas (ESA)

The target areas are located either in CBA 1 or CBA 2 areas (Figure 56 - 58). More specifically, only one target area on farm Aardvark No 164/1 and part of one target area on the farm Steenbok No 165 (Figure 56), and a small part of one target area on the farm Tuschen-In No 143 (Figure 58) occur in CBA 2 areas; the rest of the target areas all occur in CBA 1 areas.

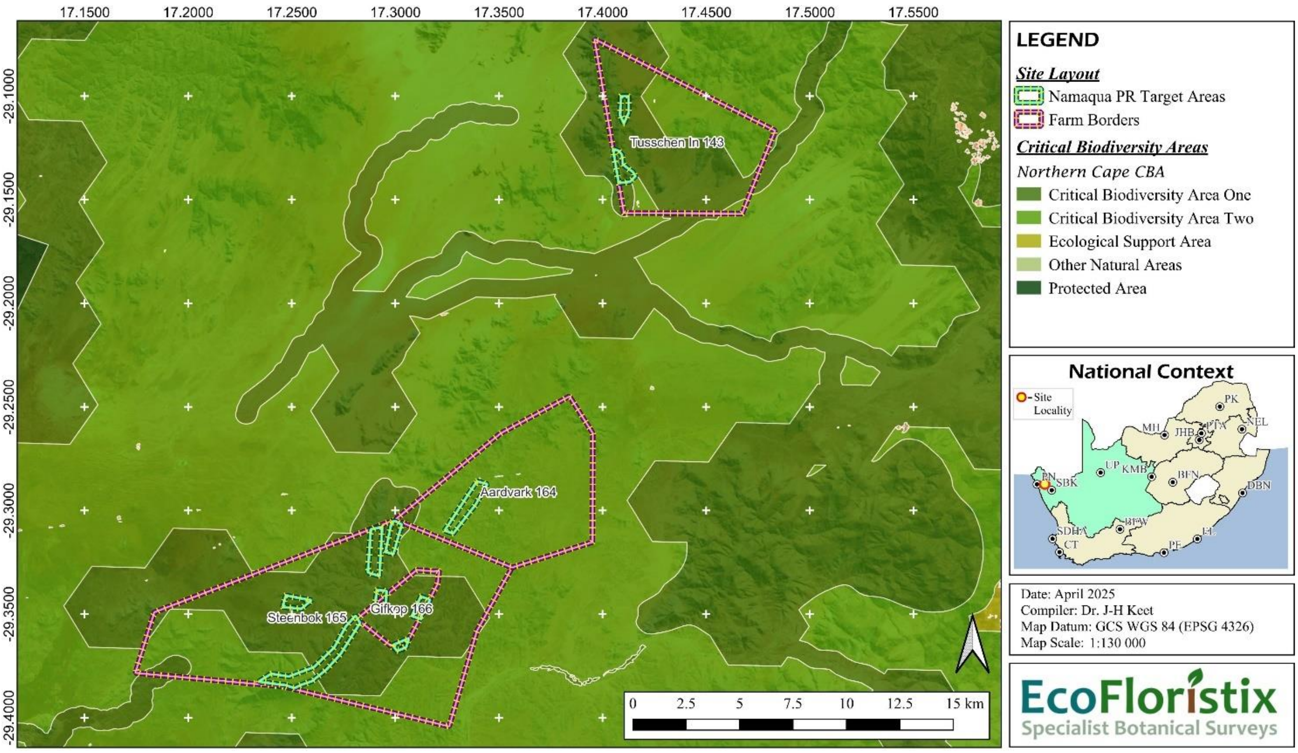


Figure 56: Layout of Critical Biodiversity Areas within the Project Area and surrounds. (EcoFloristix)

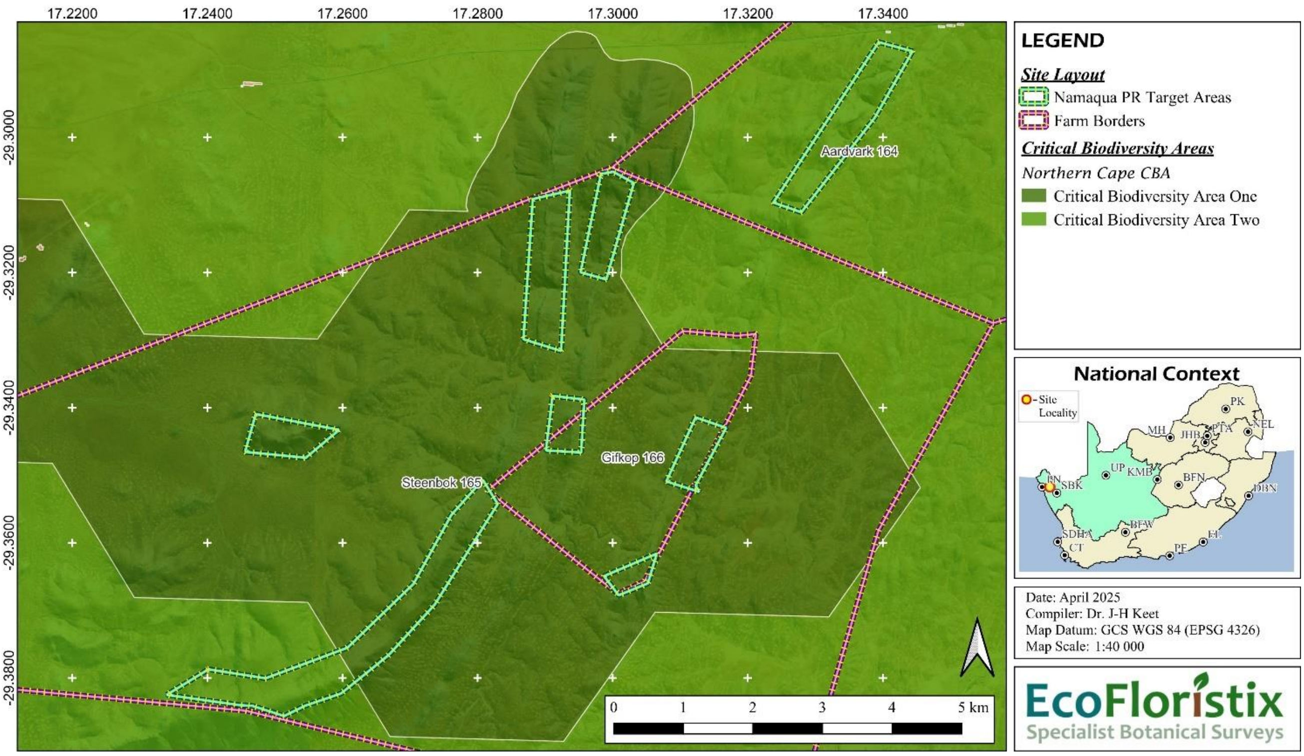


Figure 57: CBAs for the target areas on farms Aardvark No 164, Steenbok No 165, and Farm No 166 (Gifkop). (EcoFloristix)

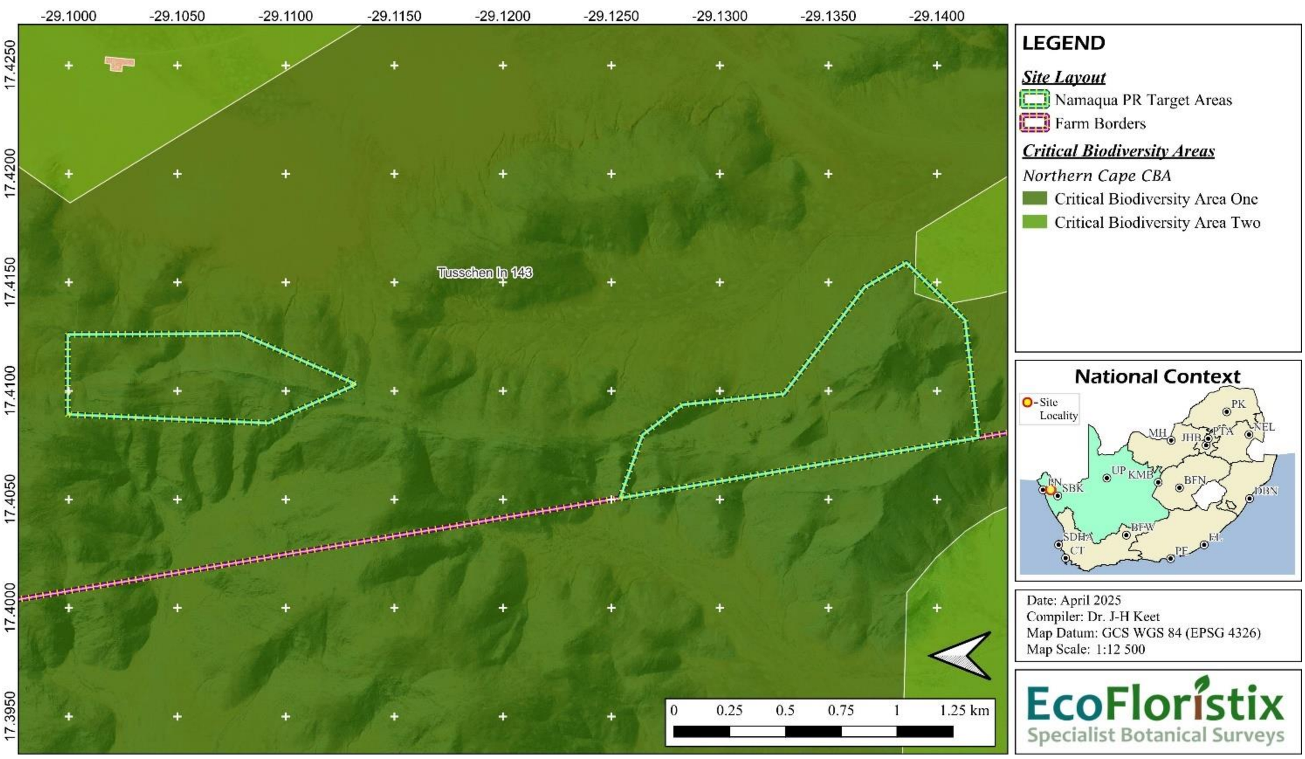


Figure 58: CBAs for the target areas on farm Tuschen-In No 143. (EcoFloristix)

CBA1 and CBA2 areas are considered critical for meeting biodiversity targets for species, ecosystems, or ecological processes and infrastructure. Thus, they are of high biodiversity and ecological value and must preferably be kept in a natural or near-natural state, with no further loss of habitat or species. This is, however, more crucial for ecosystems that have suffered great loss in terms of their original extents. Where the majority of specific ecosystems and/or vegetation types are still extant — as is this case here — activities such as prospecting would be considered to have a minimal impact. Large areas of intact ecosystems offer ecological benefits, including acting as reservoirs for species and genetic diversity for potential recolonization and resilience, sustaining vital processes like water regulation, soil stability, and carbon sequestration, providing buffer zones and supporting wildlife movement, and offering essential baseline data for impact assessment and enhancing the potential for natural regeneration and ecosystem recovery.

National Protected Area Expansion Strategy

All of the target areas, except for target area 3 on Aardvark No 164/1, are located within NPAES Focus Areas, all of which constitute the Richtersveld Focus Area (following figure). The target areas do not occur in or near any national parks (the closets of which is ± 18 km northeast of the target areas on Steenbok No 165, namely the Richtersveld National Park) or protected areas (the closest of which is ± 14 km to the north of the northernmost target area of Tuschen-In No 143, namely the Richtersveld Cultural & Botanical Landscape).

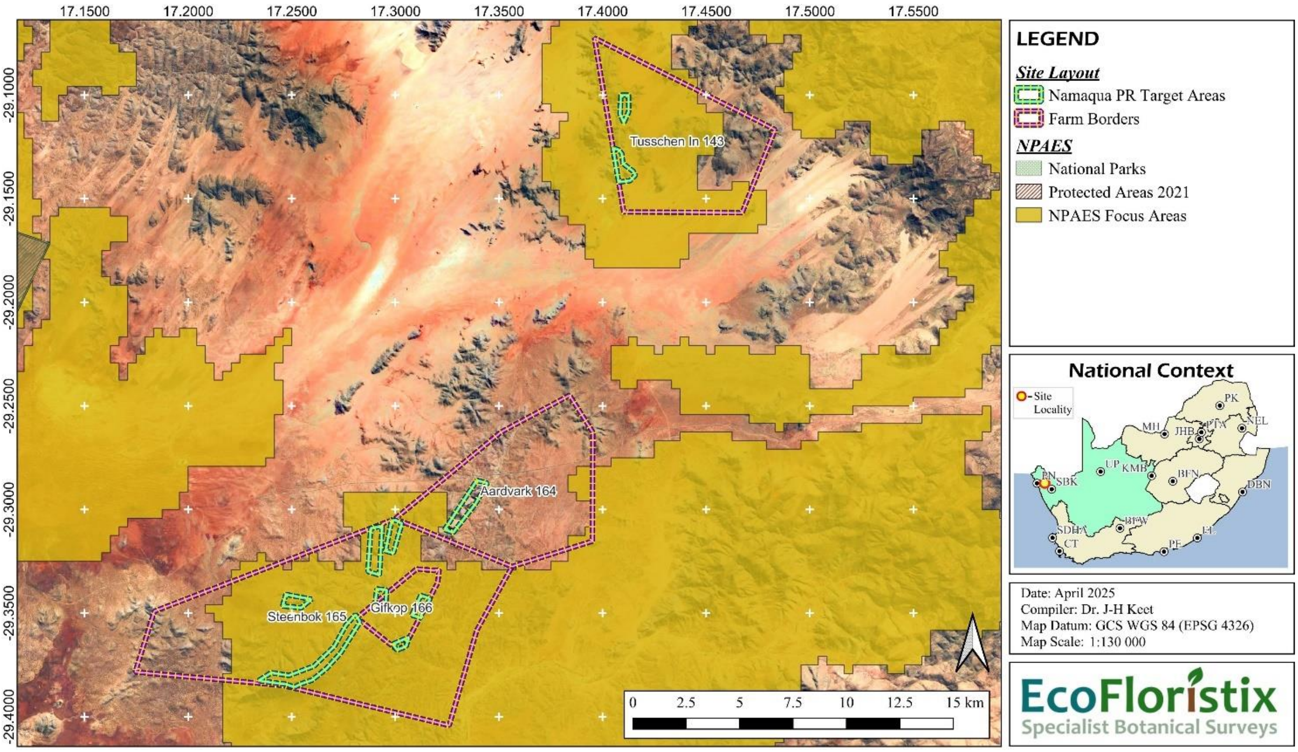


Figure 59: Project Area and target areas in relation to designated areas of the National Protected Area Expansion Strategy. (EcoFloristix)

NPAES areas provide the best opportunities for meeting ecosystem-specific protected area targets. Given that the current extents of these areas far surpass proposed conservation targets, they are unlikely to be impacted to any significant degree by prospecting activities.

National Biodiversity Assessment Protected Areas

According to the National Biodiversity Assessment 2018 spatial dataset the target areas are located either within NP (Southern Richtersveld Scorpionstailveld or Southern Richtersveld Inselberg Shrubland) or MP (Namaqualand Heuweltjieveld) ecosystems. Despite their low levels of ecosystem protection, the current extents of these areas are such that they are unlikely to be impacted to any significant degree by prospecting activities.

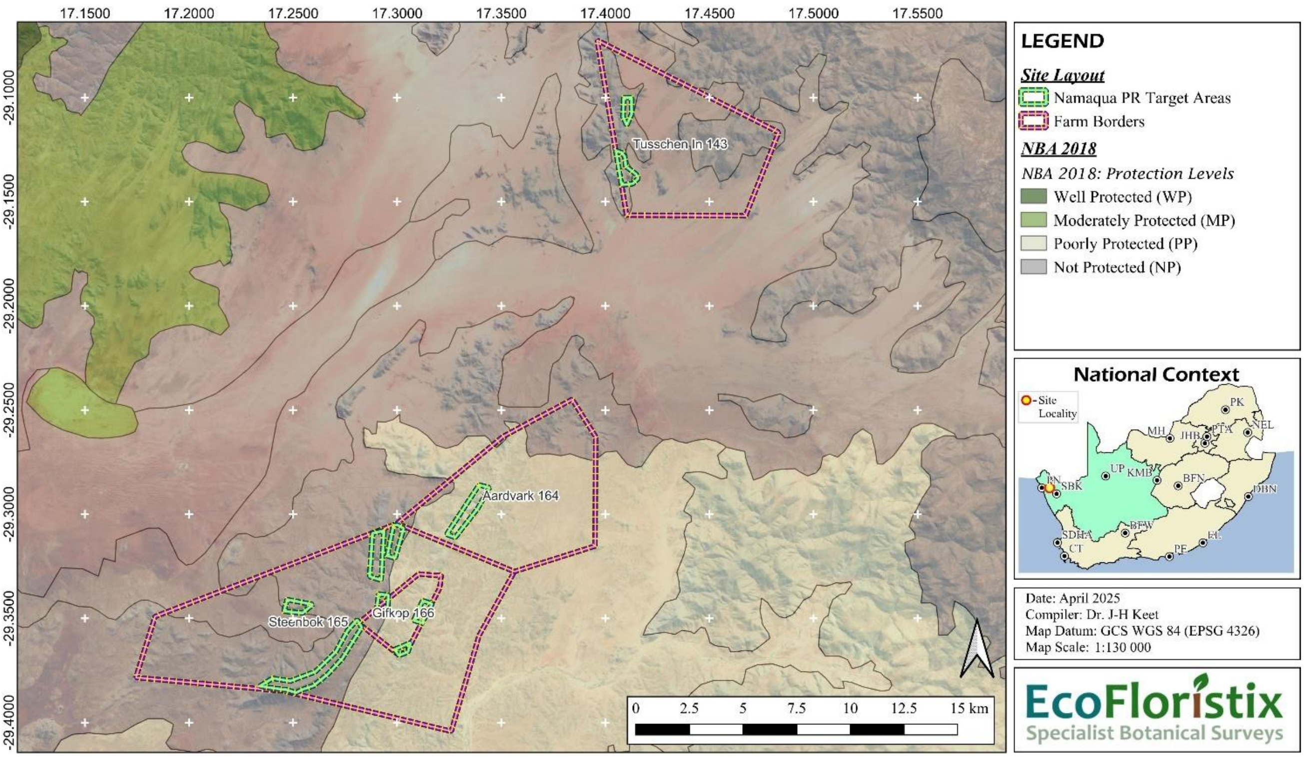


Figure 60: Ecosystem Protection Levels within the Project Area and surrounds. (EcoFloristix)

Final Sensitivities

Although the target areas vary in their sensitivity combinations, none were scored as having areas of Low or Very Low sensitivity (see Figure 4, 6 & 7). The primary reasons for this include the fact that all of the target areas occur either in CBA1 or CBA2 area, as well as occurring in either Poorly Protected or Not Protected ecosystems. Furthermore, all of the target areas, with the exception of target area 3 on Aardvark 164/1, occur in an NPAES Focus area (Richtersveld Focus Area). Thus, despite the fact that all of the target areas occur in Least Concern ecosystems, the presence of these areas contribute significantly to their higher sensitivities. Nevertheless, the extents of the ecosystems in which the target areas occur currently far surpass their proposed conservation targets, and they are unlikely to be impacted to any significant degree by prospecting activities.

Endangered (*Aloidendron ramosissimum* and *Albuca unifoliata*) and Vulnerable (*Schlechteranthus maximilianii*) plant species have been recorded on the farm Tusschen-In No 143 according to online databases, and their buffer zones specifically overlap with target area 1. Despite the fact that the mentioned threatened plant species have only been recorded in or near target area 1, they are known to occur widely within the region, and especially within habitats that characterize the target areas, all of which comprise arid mountain slopes. It is highly likely that these plant

SCC will occur in at least some of the target areas. Fortunately, these plant SCC can likely easily be avoided, which is why Site Sensitivity Verifications (SSV) are recommended.

From the final sensitivity ratings, the preferred target areas in order of preference are 3, 8, 10, and 2 (See Figure 4, 6 & 7 and Table 17). This is based firstly on having the largest percentage of medium sensitivity area. It is preferable to conduct activities affecting the environmental in areas with the lowest assigned sensitivities. Thereafter, the remaining target areas were ranked by the specialist based on having the lowest percentage of Very High sensitivity areas, and their order of preference is 7, 5, 6, 4, 1 and finally target 9.

The Minrom report considered the top 5 target areas, in order of preference, to be areas 1, 2, 3, 4, and 5 (names are based on preferred rank). The Terrestrial Desktop Sensitivity report supports the preference of target areas 2, 3, and 5, since these contain optimum levels of overall sensitivity: target area 3 has a large percentage of Medium sensitivity, while target area 2 has the smallest percentage of Very High sensitivity. Target area 5 has the third lowest percentage of Very High sensitivity, even though it has no Medium sensitivity areas. Target areas 4 and 1, however, ranked third and second to last given that they have the third and second highest levels of Very High sensitivity (apart from areas with Medium sensitivity), with no or almost no Medium sensitivity areas.

It should be noted that all of the area calculations are based on the target area boundaries and not added buffered areas surrounding the target areas. Despite the aforementioned, it must be stressed that these are only based on desktop evaluations and ground truthing of onsite conditions (presence of sensitive micro habits, levels of disturbance, presence of Species of Conservation Concern, etc) might alter sensitivities. It is thus strongly recommended that field studies (i.e., SSVs) be done prior to commencement of prospecting activities to determine the accuracy of sensitivities presented here.

It is expected that minimal levels of disturbance will be found within the target areas given the nature of the areas in which they occur (inaccessible mountainous terrain) and their localities (in arid areas with a sparse human population). This might alter the sensitivity levels that have been presented by EcoFloristix.

Conclusion

The final sensitivity layer created for the terrestrial ecosystems are crucial for planning purposes. It is imperative to avoid sensitive areas wherever possible, particularly those classified as “Very High” sensitivity, to protect the environment and minimize project risks. These layers should be utilized alongside other informative data, such as geological surveys, to pinpoint potential prospecting locations.

Furthermore, it's anticipated that additional fieldwork will be necessary at selected prospecting sites (once approved). This fieldwork will provide essential data for refining ecological sensitivities.

The property owner of Tusschen-In No 143 (Mr Mulder) has lived and farmed in the Richtersveld since 1949, gaining significant local ecological knowledge. His understanding of veld conditions and grazing practices must inform the mitigation of prospecting impacts.

SITE SPECIFIC CULTURAL AND HERITAGE ENVIRONMENT (INCLUDING PALAEONTOLOGY)

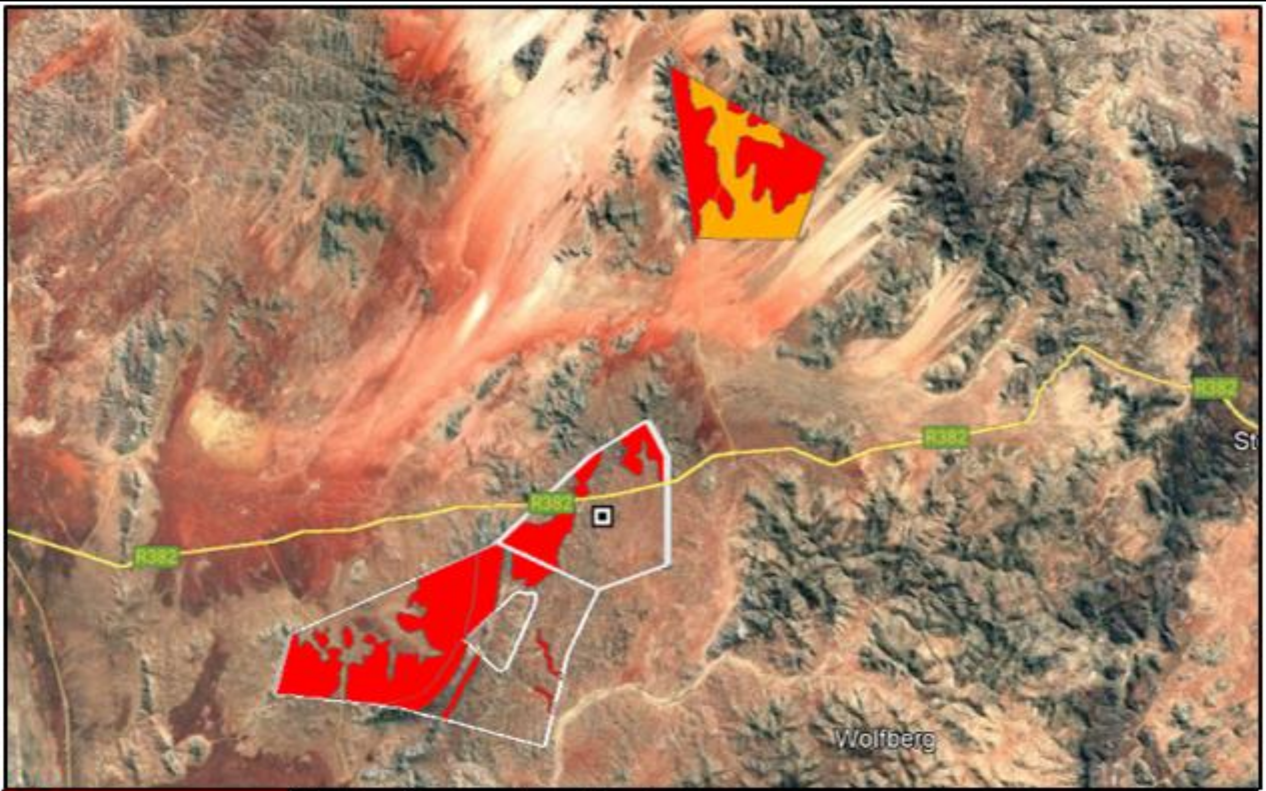
(Information extracted from the Heritage Impact Assessment for the Proposed Prospecting Application on 21 217.1756 hectares near Steinkopf in the Northern Cape Province, 2025 – Appendix G)

Beyond Heritage was appointed to conduct a Heritage Impact Assessment (HIA) for the proposed prospecting application that is located over the properties listed in Table 1. The aim of the study was to assess the proposed development footprint on a desktop level as well as a targeted survey 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 high-level site visit was therefore conducted in targeted areas of the Project.

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 expected on rocky outcrops, hills, and watercourses. Low density scatters relating to the ESA, MSA, and MSA can also be expected in flat plains. Site sensitivity of the Project areas is illustrated in the following figure.



High	Rocky outcrops and granite outcrops
High	Pans, seasonal water holes or fissures that hold water after the rains
Medium	Red sand dunes
Medium	Mixed calcrete and quartz flats
Low	Flat grassy plains with red sandy soils

Figure 61: Site sensitivity of the project areas with regard to potential Heritage Resources (Beyond Heritage).

Beyond Heritage selected and visited targeted areas within each farm. Within these target areas heritage resources recorded included graves, a low-density lithic scatter, a historical well, a historical dipping trench, ruins of a historical road, a historical house, an historical water reservoir, and a degraded modern house. The recorded heritage resources are briefly described in the following table and illustrated in the next figure.

Table 19: Sites recorded in the study area (Beyond Heritage).

LABEL	DESCRIPTION	SIGNIFICANCE
AV001	Historical well or prospecting pit	Low – Medium Significance GP B
AV002	Small degraded historical grave	High Significance 3A
AV003	Historical dipping trench	Low Significance GP C
AV004	Historical road and railway running between Steinkopf and Port Nolloth	Low – Medium Significance GP B
SB001	Degraded farmstead of modern origin.	Low Significance GP C
TC001	Historical Farmhouse that is degraded but still intact.	Medium Significance GP B
TC002	Historical Water reservoir that is square shaped.	Low Significance GP C
TC003	Low density MSA and LSA scatter.	Low Significance GP C
TC004	Small monument or burial site with the inscription Basson Maansie en Kitte 19 Mei 2002.	High Significance 3A

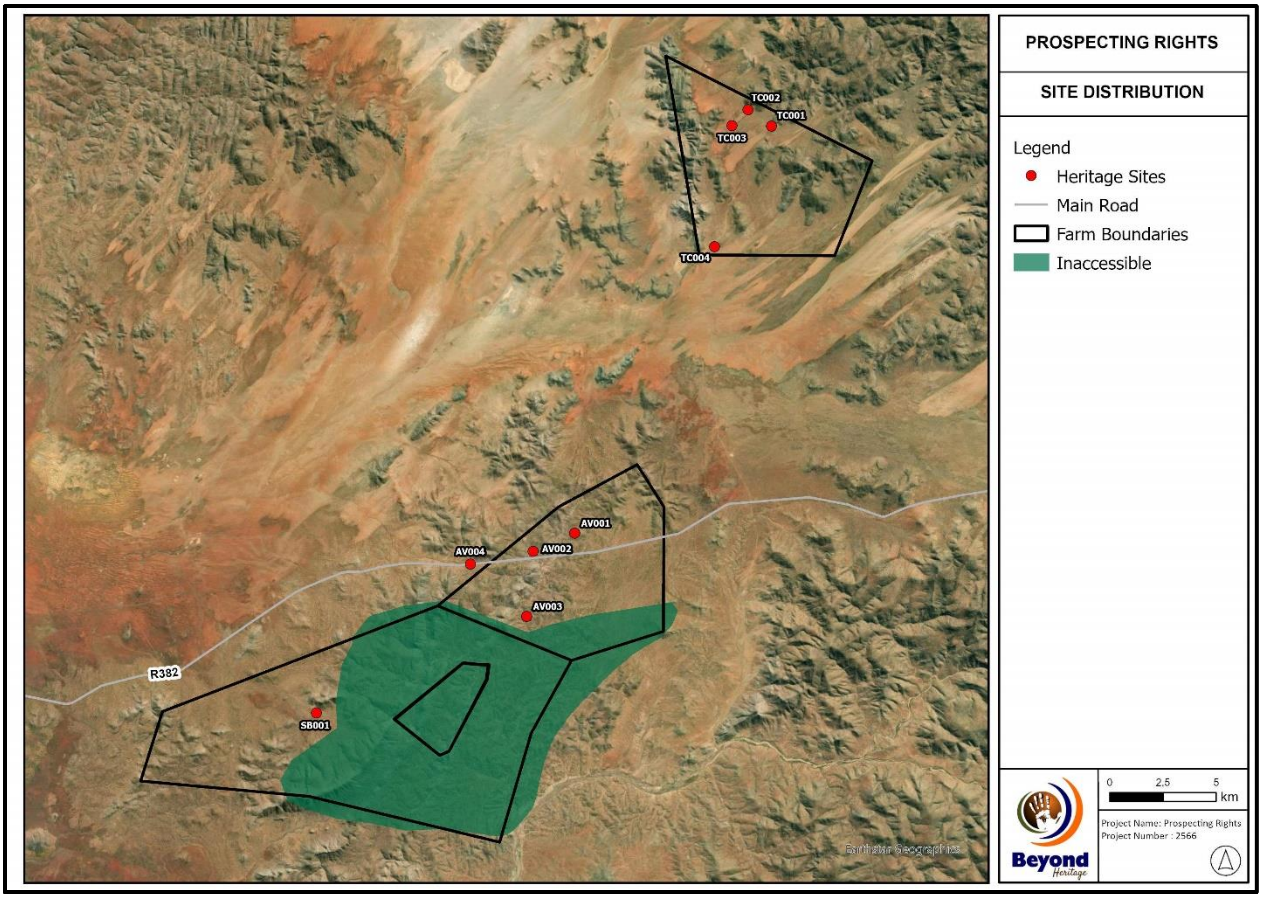


Figure 62: Site distribution of the project area (Beyond Heritage).

Cultural Landscape

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. The landscape has also been subject to copper mining from the mid to late 17th century with further mining taking place in recent decades of other minerals. The region is mineralogically rich, and mining is a great driving force in the economic sector.

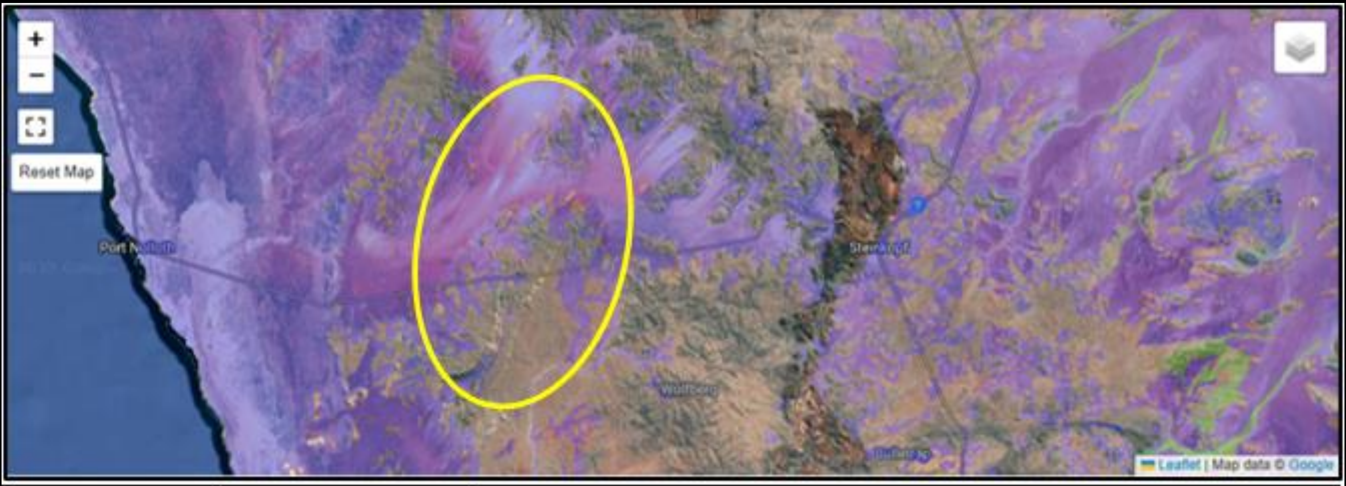
Palaeontological Heritage

(Information extracted from the Palaeontological Impact Assessment for four prospecting right applications near Steinkopf, Namaqualand, Northern Cape Province, 2025 – Appendix H)

The sites for prospecting are in the mineral-rich but fossil-poor Namaqua-Natal Sequence. Sands do not preserve fossils because they are friable and oxidized; fossils require burial in anoxic conditions to prevent the degradation of organic matter by bacteria, fungi and insects. Sands might obscure features such as pans or springs where fossils can occur, but no such feature is visible in the satellite imagery. It is unlikely that any fossils occur in the aeolian or fluvial sands.

The geological structures suggest that the rocks are the wrong type to preserve fossils (metamorphosed igneous rocks) or transported sands. Since there is a very small chance that transported fragmentary fossils from the sands may be disturbed a Fossil Chance Find Protocol has been added to this report. Taking account of the defined criteria, the potential impact to fossil heritage resources is very low.

According to the SAHRA palaeontological sensitivity map, the various study areas are indicated as of insignificant/zero and low palaeontological sensitivity (following figure), and no further studies are required for this aspect however a protocol for finds is required.



Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

Figure 63: Palaeontological sensitivity of the approximate study area (yellow polygon) as indicated on the SAHRA palaeontological sensitivity map (Beyond Heritage).

Conclusion

Due to the geographical size of the exploration application and the fact that no intrusive activities will occur at this point of the application, it was deemed not feasible to conduct fieldwork across the entire proposed project area and the high level survey focused on target areas within each farm to establish the heritage potential which proved to be in line with what similar studies of the landscape have yielded. During the survey of the targeted areas, heritage resources recorded included graves, a low-density lithic scatter, a historical well, a historical dipping trench, ruins of a historical road, a historical house, a historical water reservoir, and a degraded modern house.

It is clear from the studies conducted that the general landscape is archaeologically rich with a cultural layering dating back to the Stone Age with scatters and sites dating to the ESA, MSA and LSA. Sites and artefacts dating to these periods are scattered over the landscape with MSA and LSA sites centred on rocky outcrops, pans and watercourses and similar sites are expected to occur in the project areas. Due to the great archaeological significance of the landscape, especially relating to the Stone

Age, rocky outcrops, hills, and watercourses such as drainage lines and pans should be avoided as significant Middle and Late Stone Age sites are more likely to be found within these topographical features.

According to the SAHRA Paleontological sensitivity map the study areas are insignificant and of low palaeontological sensitivity and no further studies are required for this aspect however a protocol for finds is required.

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

The proposed prospecting area has very little site infrastructure. Some farmyards occur on the farms and stock fences are present. A few windmills and associated watering structures were noted. However, the majority of the area is without anthropogenic structures.

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 map is attached as Appendix B.

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 mainly 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**

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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium			**Final Project Proposal**		**Degree of Mitigation: Partial**		
3	4	3	3.3	3	5	4	**13.2**

Potential negative impact on the watercourses and FEPA 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 toxic heavy metal contaminants due to prospecting.

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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
Rating: Medium			**Final Project Proposal**		**Degree of Mitigation: Full**		
4	4	5	4.3	4	2	3	**12.9**

Potential impact on fauna within the footprint area.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
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.

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

Erosion of denuded areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	Significance
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 as a result of the proposed prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Final Project Proposal**		**Degree of Mitigation: Full**		
4	4	5	4.3	2	5	3.5	**15**

Loss and fragmentation of vegetation communities within the CBA ecosystem.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Final Project Proposal**		**Degree of Mitigation: Full**		
4	4	5	4.3	2	5	3.5	**15**

Fragmentation of ecosystems affecting safe movement of faunal species.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
Rating: Medium-High			**Final Project Proposal**		**Degree of Mitigation: Full**		
4	4	5	4.3	2	5	3.5	**15**

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 20: 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 21: 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 22: 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 23: 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 24: 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 25: 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 26: 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 27: 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 28: 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 copper, zinc, lead, silver, lithium, baryte, sillimanite-corundum, wolframite / tungsten, and/or feldspar sources within the earmarked areas.
- Work opportunities for 15 - 20 community members including associated growth development opportunities.
- Compensation of landowners during operational phase.
- The invasive prospecting proposed for this project 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 29: 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
• Operational phase. • Cumulative impacts.	• Potential negative impact on the identified CBA. • Potential impact on sensitive/protected flora within the footprint area.	• Medium • Medium	• Low • Low-Medium

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
	• Reduced ability to meet national conservation obligations and targets as a result of the proposeed prospecting. • Loss and fragmentation of vegetation communities within the CBA ecosystems.	• Medium-High • Medium-High	• Low • Low
• Operational phase.	• Potential negative impact on the watercourses and FEPA of the study area. • Increase in toxic heavy metal contaminants due to prospecting.	• Medium-High • Low-Medium	• 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-High	• 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
• Operational phase. • Decommissioning phase.	• Erosion of denuded areas. • Erosion of roads, veichle tracks and/or denuded areas.	• Low-Medium • Low-Medium	• Low • Low

ACTIVITY	POTENTIAL IMPACT	SIGNIFICANCE (BEFORE MITIGATION)	SIGNIFICANCE (AFTER MITIGATION)
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 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*, 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 (if available) 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 (or as previously), 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 and FEPA of the study area

The potential of the prospecting activities having a negative impact on the FEPA and/or watercourses 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.
- The findings of the hydrologist, with the drill plan, must be submitted to the DMPR 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 32 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

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:

- 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 ecologist must engage with the Applicant and landowner before finalising the drill site sensitivity map.
- The findings of the ecologist, with the drill plan, must be submitted to the DMPR 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.
- Prospecting must avoid all known wildlife corridors where physically possible, including the fenced area on the eastern slopes of Tusschen-In No 143. Movement of vehicles and noise-generating equipment must be restricted to daylight hours and designated routes on all properties.

CULTURAL AND HERITAGE ENVIRONMENT (INCLUDING PALAEONTOLOGY)

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:

- The medium significant sites (AV004) and graves (AV002, TC004) must be avoided when the placing of drilling sites is considered.
- 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. The results of the site based heritage study must be submitted to SAHRA for perusal and approval prior to commencement of invasive prospecting.
- 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, 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;
- 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.
- The fossil chance find protocol (as listed in the PIA) must be implemented if fossils are seen on the surface and when drilling commences.

LAND USE

Mitigating the Loss of Agricultural Land for Duration of Prospecting

- Prior to invasive prospecting the Applicant must hold a site-specific consultation meeting with the landowner to confirm no-go areas (e.g. lambing camps, water points, or veld under recovery).
- The Applicant/contractor must walk the targeted drill zones with the landowner to confirm which areas can or cannot be accessed. These areas must be mapped to avoid e.g. sensitive grazing camps or fenced wildlife corridors.
- Following this meeting, a detailed grazing and veld condition map must be developed with the landowner to avoid critical grazing camps during sensitive seasons. Veld rehabilitation must use indigenous species and align with rotational grazing schedules.
- A Surface Use Agreement in terms of the MPRDA must be developed and signed between the landowner and the Applicant before site activities commence. This agreement must address access, temporary land use, and infrastructure impacts.
- If, during activities, conditions change (e.g sudden veld deterioration, lambing season), the landowner must contact the appointed ECO or project manager and can request temporary halting or re-routing of prospecting activities.
- An independent Environmental Assessment Practitioner (EAP) must conduct annual environmental audits in accordance with the approved EMPR. The audit reports must evaluate compliance with all environmental and landowner-related commitments. Copies of these reports must be made available to all affected landowners and Interested and Affected Parties (I&APs) upon request, and a summary of findings must be shared proactively with directly affected landowners.

- Once drilling in an area is completed a joint walk-through with the landowner must confirm that the topsoil was returned correctly, vegetation re-establishment is underway, and fences or gates, if disturbed are repaired.
- 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.

Management of safety and security risk posed by prospecting activities to residents

- Detailed prospecting phases, timeframes and access requirements must be shared with each landowner 21 calendar days prior to any invasive activity.
- Employees to be appointed must be vetted prior to inception of contract.

- No employees may be allowed to reside or stay overnight within the prospecting area unless provided for in the Surface Use Agreement.
- Prospecting employees must be educated to report suspicious looking person/s and/or matters to site management.
- Direct communication between the prospector and the landowners must be maintained for the duration of the site establishment-, operational, and decommissioning phases.
- The prospecting contractor may not enter negotiations with farm employees.
- Prospecting may only take place during normal business hours unless otherwise authorised by the landowner.
- No alcohol or prohibited drugs may be allowed on site.
- Attendance registers must be maintained, and all prospecting vehicles/machinery must be pre-registered with the landowner/security.
- No firearms will be allowed on site.

Fire Risk Management

- No open fires are permitted on any of the sampling sites. Contained fires for heating and cooking (i.e. in a fire drum) but be restricted to designated areas at the site camp.
- Employees must be prevented from setting fires randomly outside designated areas.
- No fuel or chemicals may be stored under trees.
- Gas may not be stored in the same storage area as liquid fuel.
- Smoking may only occur at designated areas (>3 m from fuel or chemical storage areas) equipped with sand buckets for the disposal of cigarette buds.
- Ensure Work Site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site.
- Specific fire safety precautions must be implemented during welding activities associated with construction work. Ensure a working fire extinguisher is immediately at hand if any "HOT WORK" is undertaken e.g. welding, grinding, gas cutting etc,
- Any fires noted on site must be reported to the responsible SHE rep and/or fire officer.
- The site must implement fire emergency procedures for the duration of the site establishment-, operational-, and decommissioning phases.
- In the event of large fires all personnel must assemble at a safe assembly point to be transported from site. The fire department or local fire watch must be informed of the fire to ensure that the fire is brought under control as soon as possible.

ix) Motivation where no alternative sites were considered.

Not applicable.

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

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

Refer to Part A(1)(h) *Full description of the process followed to reach the proposed preferred site* above, and Part A(1)(I)(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: Partial**		
1	3	1	1.6	1	4	2.5	**4**

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: 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

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

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

Potential negative impact on the watercourses and FEPA of the study area

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

Increase in toxic heavy metal contaminants due to prospecting.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

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

Erosion of denuded areas.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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).**

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: 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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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.

Severity	Duration	Extent	Consequence	Probability	Frequency	Likelihood	**Significance**
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)**

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 as a result of the proposed prospecting.

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**

Loss and fragmentation of vegetation communities within the CBA 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 30: 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	- Visual intrusion because of site camp.	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
⅋ Operational Phase	⅋ Visual intrusion because of invasive prospecting.					
Invasive Prospecting (Phase 4 & 6): ⅋ Operational Phase ⅋ Cumulative Impacts	⅋ Potential negative impact on the identified CBA. ⅋ Potential impact on sensitive/protected flora within the footprint area. ⅋ Reduced ability to meet national conservation obligations and targets as a result of the proposed prospecting. ⅋ Loss and fragmentation of vegetation communities within the CBA ecosystems.	Impact may affect the biodiversity richness of the area.	Operational Phase	⅋ Medium ⅋ Medium ⅋ Medium-High ⅋ Medium-High	<u>Control:</u> 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 and FEPA of the study area. ⅋ Increase in toxic heavy metal contaminants due to prospecting.	Impact may affect water resources in a water scarce area.	Operational Phase	⅋ Medium-High ⅋ Low-Medium	<u>Control & Stop:</u> Implementing the proposed mitigation measures.	⅋ Low ⅋ Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
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-High	Control & Stop: Implementing good management practices.	• Low • Low
Invasive Prospecting (Phase 4 & 6): • Operational Phase • Decommissioning Phase	• Infestation of the prospecting area with invader plant species. • Infestation of the reinstated areas with invader plant species.	This will impact on the biodiversity of the receiving environment.	Operational Phase	• Low-Medium • Low-Medium	Control: Implementing invader plant control measures.	• Low • Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
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 - 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	- Low-Medium - Low-Medium	Control & Remedy: Proper housekeeping and storm water management.	- Low - Low
Invasive Prospecting (Phase 4 & 6): - Operational Phase	- Deterioration of the access roads due to prospecting activities.	Collapse of the road infrastructure will	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	- Low

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
		affect the landowners.			better condition than prior to prospecting.	
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	<u>Control, Stop & Remedy:</u> 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	<u>Control, Stop & Remedy:</u> 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 agricultural practices of the area.	Operational Phase	• Medium	<u>Control:</u> Implementing good housekeeping and emergency risk procedures.	• Low

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

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 31: 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 21 217.1756 hectares near Steinkopf in the Northern Cape. *(See Appendix G for a full copy of the document)*	**Recommendations:** - Avoidance of the medium significance recorded sites (AV004) and graves (AV002, TC004) for consideration of drilling sites; - 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 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 or pans must be avoided as far as possible as these areas could be sensitive from a heritage point of view; - 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 (of the HIA).	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
	Chance Find Procedure: 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 (of the HIA). This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below. - 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		

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
	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 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		

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
	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 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.		

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
Palaeontological Impact Assessment For four prospecting right applications near Steinkopf, Namaqualand, Northern Cape Province. *(See Appendix H for a full copy of the document)*	**<u>Recommendation:</u>** - Based on experience and the lack of any previously recorded fossils from the area, it is extremely unlikely that any fossils would be preserved in the overlying soils or sands of the Quaternary. The target rocks for exploration are metamorphosed igneous rocks of the Namaqua-Natal Sequence and they do not preserve fossils. There is a very small chance that fragments of transported fossils may occur in the sands and alluvium so a Fossil Chance Find Protocol should be added to the EMPr. If fossils are found by the environmental officer, or other responsible person once drilling has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample. The impact on the palaeontological heritage would be very low, as far as the palaeontology is concerned, so the project should be authorised. <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	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
	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.		
Terrestrial Desktop Sensitivity For a prospecting right application for targeted blocks on farms Tusschen-In 143, Aardvark 164, Steenbok 165, and Gifkop 166 near Steinkopf, Northern Cape Province, South Africa *(See Appendix F for a full copy of the document)*	**<u>Conclusion and summary of recommendations</u>** It is imperative to avoid sensitive areas wherever possible, particularly those classified as “Very High” sensitivity, to protect the environment and minimize project risks. These layers should be utilized alongside other informative data, such as geological surveys, to pinpoint potential prospecting locations. Although a 32 m buffer was deemed adequate for avoiding sensitive watercourse habitats, it must be noted that any listed activity proposed within a 100 m of a watercourse will require a water use licence (WUL). All watercourses and their buffered areas are classified as having a Very High sensitivity, and they should be avoided wherever possible. It is it is highly recommended that fieldwork studies — that is, Site Sensitivity Verifications (SSVs) — also be conducted prior to commencement of prospection activities so that desktop findings can either be validated or discredited with more accurate information. To ensure its relevance, it is strongly advocated that an SSV, in the context of this project, be conducted shortly before	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 DMPR 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
	prospecting activities commence. A significant delay between the SSV and the commencement of prospecting is not advised, as the verification must be as current as possible. Finally, it is imperative that the SSV be completed prior to the undertaking of any prospecting work.		

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 copper, zinc, lead, silver, lithium, baryte, sillimanite-corundum, wolframite / tungsten, and feldspar over ±21 217 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 all the earmarked farms are classified as Low. The farms are mainly used for livestock grazing. The Applicant will engage the landowners of the earmarked properties regarding Surface Use 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 ±300 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

Minrom concluded that the proposed PR footprint has reasonable potential for industrial minerals such as garnet, kyanite, and sillimanite, which are known to occur in the region and on adjacent properties.

The Project does not have direct indications for copper or pegmatite mineralisation, as observed in the remote sensing and regional data analysed; however, based on the limitations of the desktop aspects of the study, it is recommended that reconnaissance geological mapping and sampling be performed to directly inspect the potential for industrial minerals and any indications of base or precious metals.

The identified targets on the earmarked farms were ranked as follows, although the rankings are subjective as most have similar prospectivity:

1. Tusschen-In No 143;
2. Steenbok No 165;
3. Aardvark No 164/1;
4. Farm No 166 (Gifkop).

Hydrology

EcoFloristix noted that the target areas are outside SWSA's and that there are no wetlands of concern. An unnamed NFEPA river originates within the southwest part of target area 2 on Steenbok No 165, and the majority of Tusschen-In No 143 and a part of the southwestern corner of Steenbok No 165 extends across areas classified as a river FEPA.

The specialist recommended that the identified drainage lines (Figure 4, 6 & 7) be avoided irrespective of their sensitivity and ecosystem threat status. Presently, an aquatic impact buffer of 32 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 DMPR prior to commencement of invasive activities.

Groundcover, Fauna, and Biodiversity Conservation

The Terrestrial Desktop Sensitivity notes that:

- it is highly improbable that many of the SCC's would be present within the target areas.
- the identified ecosystems are listed as Least Concern, and their current extents far surpass proposed conservation targets they are therefore unlikely to be impacted to any significant degree by prospecting activities.
- despite the low levels of ecosystem protection, the current extents of these areas are such that they are unlikely to be impacted to any significant degree by prospecting activities.

In conclusion the report supports the preference of target areas 2, 3, and 5, since these contain optimum levels of overall sensitivity. The final sensitivity layer created for the terrestrial ecosystems are crucial for planning purposes. It is imperative to avoid sensitive areas wherever possible, particularly those classified as “Very High” sensitivity, to protect the environment and minimize project risks. These layers should be utilized alongside other informative data, such as geological surveys, to pinpoint potential prospecting locations.

Furthermore, it's anticipated that additional fieldwork will be necessary at selected prospecting sites (upon approval). This fieldwork will provide essential data for refining ecological sensitivities.

Cultural and Heritage Environment (including Palaeontology)

The heritage impact assessment 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.

According to the SAHRA Paleontological sensitivity map the study areas are insignificant and of low palaeontological sensitivity and no further studies are required for this aspect however a protocol for finds is required.

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, and that invasive prospecting will be conducted on portions of the following farms:

1. Tusschen-In No 143;
2. Steenbok No 165;
3. Aardvark No 164/1;
4. Farm No 166 (Gifkop).

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 DMPR for approval prior to the commencement of invasive activities.

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 copper, zinc, lead, silver, lithium, baryte, sillimanite-corundum, wolframite / tungsten, and/or feldspar sources within the earmarked areas.
- Work opportunities for 15 - 20 community members including associated growth development opportunities.
- Compensation of landowners during operational phase.
- The invasive prospecting proposed for this project 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 32: 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
- 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 33: 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 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.	- 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
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, 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. Compliance to be monitored by the Environmental Control Officer.	- 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.	- Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		- 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 (if available) 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 (or as previously), 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 and FEPA.	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. - Submit the findings of the hydrologist, with the drill plan, to the DMPR 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 and/or FEPA 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 32 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 ecosystems.	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 ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants. - Ensure that the ecologist engage with all (Applicant and landowner) before finalising the drill site sensitivity map. - Submit the findings of the ecologist, with the drill plan, to the DMPR for approval prior to commencement. - Clearly demarcate the prospecting boundaries and contain all operations to the approved area.	- 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. • Avoid all known wildlife corridors where physically possible, including the fenced area on the eastern slopes of Tusschen-In No 143. Restrict movement of vehicles and noise-generating equipment to daylight hours and designated routes on all properties.	• Disturbance to fauna is minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
CULTURE AND HERITAGE ENVIRONMENT Archaeological, Heritage and Palaeontological Aspects.	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer.	- Avoid the medium significant sites (AV004) and graves (AV002, TC004) when the placing of drilling sites is considered. - Arrange a heritage walk down once the drill sites have been confirmed prior to the commencement of invasive prospecting activities. Submit the results of the site based heritage study to SAHRA for perusal and approval prior to commencement of invasive prospecting. - 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 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. - 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	- Impact to cultural/heritage resources is avoided or at least minimised.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		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 SAHRA. • Work may only continue once the go-ahead was issued by SAHRA. - Implement the fossil chance find protocol (as listed in the PIA) if fossils are seen on the surface and when drilling commences.	
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.	- Prior to invasive prospecting arrange a site-specific consultation meeting with the landowner to confirm no-go areas (e.g. lambing camps, water points, or veld under recovery). - Walk the targeted drill zones with the landowner to confirm which areas can or cannot be accessed. Map these areas to avoid e.g. sensitive grazing camps or fenced wildlife corridors. - Following this meeting, develop a detailed grazing and veld condition map with the landowner to avoid critical grazing camps during sensitive seasons. Use indigenous species and align veld rehabilitation with rotational grazing schedules.	- Prospecting has the least possible impact on the operation of the property.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		- Develop and sign a Surface Use Agreement in terms of the MPRDA with each landowner before site activities commence. Ensure that the agreement addresses access, temporary land use, and infrastructure impacts. - If, during activities, conditions change (e.g sudden veld deterioration, lambing season), the landowner must contact the appointed ECO or project manager and can request temporary halting or re-routing of prospecting activities. - Appoint an EAP to conduct annual environmental audits in accordance with the approved EMPR. Ensure that the audit reports evaluate compliance with all environmental and landowner-related commitments. Make copies of these reports available to all affected landowners and I&APs upon request and share a summary of findings proactively with directly affected landowners. - Once drilling in an area is completed conduct a joint walk-through with the landowner to confirm that the topsoil was returned correctly, vegetation re-establishment is underway, and fences or gates, if disturbed are repaired. - If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised.	
EXISTING INFRASTRUCTURE Access Road Mitigation	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR.	- Divert storm water around the access road to prevent erosion.	- The access road remains accessible to the landowner during the operational phase, and upon closure, the road is returned in a

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	• 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.	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. Compliance to be monitored by the Environmental Control Officer.	• 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. • 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.	• Wastes are appropriately handled and safely disposed of at a recognised waste facility.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		♣ 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. ♣ 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.	♣ 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.	♣ The prospecting activities do not pose a health and safety risk to employees, land users and/or animals.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
	Compliance to be monitored by the Environmental Control Officer.	• 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.	
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.	• Share the detailed prospecting phases, timeframes and access requirements with each landowner 21 calendar days prior to any invasive activity. • Screen employees to be appointed prior to inception of contract. • Do not allow employees to reside or stay overnight within the prospecting area unless provided for in the Surface Use Agreement. • 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. • Do not enter negotiations with the farm employees. • Only allow prospecting during normal business hours unless otherwise authorised by the landowner. • Do not allow alcohol or prohibited drugs on site. • Maintain attendance registers, and pre-registered all prospecting vehicles/machinery with the landowner/security. • Do not allow firearms on site.	• 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	- Prospecting activities do not result in uncontrolled fires.

MANAGEMENT OBJECTIVES	ROLE	MANAGEMENT ACTION	MANAGEMENT OUTCOME
		from site. Inform the fire department or local fire watch of the fire to ensure that the fire is brought under control as soon as possible.	

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 47 016. The table below shows the proposed cost regarding site rehabilitation of the applicable phases of invasive prospecting.

Table 34: 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 47 016

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 Energy Minerals & Resources (Pty) Ltd underwritten by Scipion Capital. Strata Energy Minerals & Resources (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 earmarked farms are all of Low sensitivity. The farms are mainly used for grazing. As mentioned earlier, the Applicant will engage the landowners of the earmarked properties regarding Surface Use 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 ±300 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 medium significance without mitigation and low significance once the mitigation measures are implemented.

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

  The prospecting activity will contribute the emissions of the prospecting equipment 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 in drainage lines or other water resources without prior authorisation by the DWS. 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 effect 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).

It is clear from the studies conducted that the general landscape is archaeologically rich with a cultural layering dating back to the Stone Age with scatters and sites dating to the ESA, MSA and LSA.

According to the South African Heritage Resource Authority (SAHRA) Paleontological sensitivity map the study areas are of insignificant and low palaeontological sensitivity.

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 L 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 DMPR for approval when available.

d) Description of impact management objectives including management statements

i) Determination of closure objectives.

(Ensure that the closure objectives are informed by the type of environment described in 2.4 herein)

The primary objective, once invasive prospecting concludes, is to obtain a closure certificate in as short a time as possible whilst still complying with the requirements of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) [MPRDA]. To realise this, the following main objectives must be achieved:

- Remove all infrastructure and waste from the site camp as per the requirements of this EMPR and of the Provincial Department of Minerals and Petroleum Resources.
- 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 DMPR. 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.

Each target area will be rehabilitated within 60 days of conclusion of the prospecting activities, upon which it can be signed back to the landowner if he/she so wishes. The jeep tracks (internal roads) will be temporary and will be rehabilitated once prospecting ceases and if the landowner do not wish the track to remain.

The following procedure is proposed regarding the rehabilitation of the boreholes and trenches:

BOREHOLE REHABILITATION PROCEDURE

Borehole Inspection

- Visual Inspection: Check the borehole for signs of contamination, instability, or other issues.

- Log Data: Document the condition and depth of the borehole.

Decommissioning the Borehole

- Seal the Borehole: Depending on regulations, use a suitable sealing method. This may include:
  - Cement Grouting: Filling the borehole with cement or a similar material.
  - Clay Sealing: Using clay to prevent water migration.
  - Remove Equipment: Safely remove any casing, tubing, or other equipment from the borehole area.

Site Restoration

- Backfill and Grading: Fill the area around the borehole and grade it to blend with the surrounding landscape.
- Revegetation: If necessary, plant indigenous vegetation to restore the ecosystem.

Monitoring

- Post-Rehabilitation Monitoring: Conduct follow-up assessments to ensure that the rehabilitation measures are effective.

Documentation

- Record Keeping: Maintain detailed records of the rehabilitation process, including methods used, materials, and any follow-up monitoring results.

Reporting

- Submit Reports: Provide necessary documentation and reports to relevant authorities as required by regulations.

The Applicant will also comply with the minimum closure objectives as prescribed by DMPR 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 DMPR 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 DMPR 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 (DMPR).

Once the prospecting area was rehabilitated the Applicant is required to submit a closure application to the Department of Minerals and Petroleum 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).

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

The drilling operation require ±1 000 l of water per day. Potable water will daily be transported to site by the employees, while the process water (for dust suppression) will be bought from a registered local source (to be identified) in the vicinity of the prospecting activities and transported to site in a water truck(s).

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 35: 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	<u>Site Camp</u>: ±0.2 ha <u>Drilling</u>: 300 m² per borehole site	**<u>Loss of Agricultural Land for Duration of Prospecting:</u>** - Prior to invasive prospecting the Applicant must hold a site-specific consultation meeting with the landowner to confirm no-go areas (e.g. lambing camps, water points, or veld under recovery). - The Applicant/contractor must walk the targeted drill zones with the landowner to confirm which areas can or cannot be accessed. These areas	Use of agricultural land must be managed in accordance with the: - CARA, 1983	Throughout the site establishment-, and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			must be mapped to avoid e.g. sensitive grazing camps or fenced wildlife corridors. • Following this meeting, a detailed grazing and veld condition map must be developed with the landowner to avoid critical grazing camps during sensitive seasons. Veld rehabilitation must use indigenous species and align with rotational grazing schedules. • A Surface Use Agreement in terms of the MPRDA must be developed and signed between the landowner and the Applicant before site activities commence. This agreement must address access, temporary land use, and infrastructure impacts. • If, during activities, conditions change (e.g sudden veld deterioration, lambing season), the landowner must contact the appointed ECO or project manager and can request temporary halting or re-routing of prospecting activities. • An independent Environmental Assessment Practitioner (EAP) must conduct annual environmental audits in accordance with the approved EMPR. The audit reports must		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			evaluate compliance with all environmental and landowner-related commitments. Copies of these reports must be made available to all affected landowners and Interested and Affected Parties (I&APs) upon request, and a summary of findings must be shared proactively with directly affected landowners. - Once drilling in an area is completed a joint walk-through with the landowner must confirm that the topsoil was returned correctly, vegetation re-establishment is underway, and fences or gates, if disturbed are repaired. - 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.		
Invasive Prospecting (Phase 4 & 6): - Site Establishment - Operational Phase	Site Establishment- & Operational Phase	Site Camp: ±0.2 ha Drilling: 300 m² per borehole site	**Visual Mitigation** - 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.	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
			- 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: 300 m² per borehole site	**Management of the impact on floral species, and fragmentation of vegetation communities within the CBA:** - 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	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
			and keep prospecting from sensitive areas/plants. - The ecologist must engage with the Applicant and landowner before finalising the drill site sensitivity map. - The findings of the ecologist, with the drill plan, must be submitted to the DMPR 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	Drilling: 300 m² per borehole site	**Management of the impact on watercourse and FEPA of the study area:** - Once the invasive prospecting programme is available additional	All watercourses and FEPA 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. - The findings of the hydrologist, with the drill plan, must be submitted to the DMPR 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>: 300 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,	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
			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).	• 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
			• Best practice measures shall be implemented during the stripping of topsoil to minimize potential dust impacts.		
Invasive Prospecting (Phase 4 & 6): • Operational Phase	Operational Phase	Drilling: 300 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: 300 m² per borehole site	**Protection of Fauna:** • The site manager must ensure no fauna is caught, killed, harmed, sold, or played with.	Fauna must be managed in accordance with the: • NEM:BA 2004	Throughout the and operational phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			- 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. - Prospecting must avoid all known wildlife corridors where physically possible, including the fenced area on the eastern slopes of Tusschen-In No 143. Movement of vehicles and noise-generating equipment must be restricted to daylight hours and designated routes on all properties.		
Invasive Prospecting (Phase 4 & 6): - Operational Phase - Decommissioning Phase	Operational and Decommissioning Phase	<u>Drilling</u>: 300 m² per borehole site	**<u>Management of Invader Plant Species:</u>** - An invasive plant species management plan must be implemented on site to control weeds and invasive plants on denuded- and reinstated areas in terms of the NEM:BA, 2004 and CARA, 1983. - 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.	Invader plants must be managed in accordance with the: - CARA, 1983 - NEM:BA 2004	Throughout the operational, and decommissioning phase.

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			• 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.		
Invasive Prospecting (Phase 4 & 6): • Operational Phase • Decommissioning Phase	Operational and Decommissioning Phase	Drilling: 300 m² per borehole site	**Waste Management:** • 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	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
			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.		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			- 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	<u>Drilling</u>: 300 m² per borehole site	**<u>Archaeological, Heritage and Palaeontological Aspects:</u>** - The medium significant sites (AV004) and graves (AV002, TC004) must be avoided when the placing of drilling sites is considered. - 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. The results of the site based heritage study must be submitted to SAHRA for perusal and	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
			approval prior to commencement of invasive prospecting. - 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 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; - 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		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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	Drilling: 300 m² per borehole site	**Erosion Control and Storm Water Management:** - An aquatic impact buffer of 32 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	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
			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.		
Invasive Prospecting (Phase 4 & 6): - Operational Phase	Operational Phase	Drilling: 300 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.	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
			- 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.		
Invasive Prospecting (Phase 4 & 6): - Operational Phase	Operational and Decommissioning 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.	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:** - Detailed prospecting phases, timeframes and access requirements must be shared with each landowner 21 calendar days prior to any invasive activity. - Employees to be appointed must be vetted prior to inception of contract. - No employees may be allowed to reside or stay overnight within the prospecting area unless provided for in the Surface Use Agreement. - Prospecting employees must be educated to report suspicious looking person/s and/or matters to site management. - Direct communication between the prospector and the landowners must be maintained for the duration of the site establishment-, operational, and decommissioning phases. - The prospecting contractor may not enter negotiations with farm employees. - Prospecting may only take place during normal business hours and	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
			unless otherwise authorised by the landowner. - No alcohol of prohibited drugs may be allowed on site. - Attendance registers must be maintained, and all prospecting vehicles/machinery must be pre-registered with the landowner/security. - No firearms will be allowed on site.		
Invasive Prospecting (Phase 4 & 6): - Operational Phase	Operational Phase	Drilling: 300 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. - 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.	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
			• 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		

ACTIVITIES	PHASE	SIZE AND SCALE OF DISTURBANCE	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
			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 36: Impact Management Outcomes

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
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..)		In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure))	(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.	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
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	The impact may affect the agricultural operations of the property.	Site Establishment- & Operational Phase	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	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
	earmarked for invasive prospecting.			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	Control: Implementing proper housekeeping.	Management of the prospecting area must be in accordance with the: • MPRDA, 2008 • NEMA, 1998
Invasive Prospecting (Phase 4 & 6): • Operational Phase • Cumulative Impacts	• Potential negative impact on the identified CBA. • Potential impact on sensitive/protected flora within the footprint area. • Reduced ability to meet national conservation obligations and targets as a result of the proposed prospecting. • Loss and fragmentation of vegetation communities within the CBA ecosystems.	Impact may affect the biodiversity richness of the area.	Operational Phase	Control: 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
Invasive Prospecting (Phase 4 & 6): • Operational Phase	• Potential negative impact on the watercourses and FEPA of the study area. • Increase in toxic heavy metal contaminants due to prospecting.	Impact may affect water resources in a water scarce area.	Operational Phase	Control & Stop: Implementing the proposed mitigation measures.	All watercourses and FEPA must be managed in accordance with the: • NWA, 1998
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	Control: Dust suppression methods and proper housekeeping.	Dust generation must be managed in accordance with the: • NEM:AQA. 2004 Regulation 6(1) • National Dust Control Regulations, GN No R827 • ASTM D1739 (SANS 1137:2012)
Invasive Prospecting (Phase 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

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
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. - Infestation of the reinstated areas 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
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)

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
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
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

ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	MITIGATION TYPE	STANDARD TO BE ACHIEVED
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 37: 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): - Operational Phase - Cumulative Impacts	- Potential negative impact on the identified CBA. - Potential impact on sensitive/protected flora within the footprint area. - Reduced ability to meet national conservation obligations and targets as a result of the proposed prospecting. - Loss and fragmentation of vegetation communities within the CBA 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
Invasive Prospecting (Phase 4 & 6): - Operational Phase	- Potential negative impact on the watercourses and FEPA of the study area.	Control & Stop: Implementing the proposed mitigation measures.	Throughout the operational, phase.	All watercourses and FEPA must be managed in accordance with the: - NWA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
	• Increase in toxic heavy metal contaminants due to prospecting.			
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): • Operational Phase Cumulative Impact	• Potential impact on fauna within the footprint area. • Fragmentation of ecosystems affecting safe movement of faunal species.	Control & Stop: Implementing good management practices.	Throughout the operational phase.	Fauna must be managed in accordance with the: • NEM:BA 2004
Invasive Prospecting (Phase 4 & 6):	• Infestation of the prospecting ara 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

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
• Operational Phase • Decommissioning Phase	• Infestation of the reinstated areas with invader plant species.			• 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.	<u>Control & Remedy:</u> Proper housekeeping and implementation of an emergency response plan.	Throughout the operational and decommissioning phase.	Prospecting related waste must be managed in accordance with the: • NWA, 1998 • NEM:WA, 2008 • NEM:WA, 2008: National norms and standards for the storage of waste (GN 926) • NEMA, 1998 (Section 30)
Invasive Prospecting (Phase 4 & 6): • Operational Phase	• Potential impact on area/infrastructure of heritage or cultural concern.	<u>Control & Stop:</u> Implementing good management practices, as well as the chance-find protocol.	Throughout the operational phase.	Cultural/heritage aspects must be managed in accordance with the: • NHRA, 1999
Invasive Prospecting (Phase 4 & 6): • Operational Phase • Decommissioning Phase	• Erosion of denuded areas. • Erosion of roads, vehicle tracks and/or denuded areas.	<u>Control & Remedy:</u> Proper housekeeping and storm water management.	Throughout the operational-and decommissioning phase.	Storm water must be managed in accordance with the: • CARA, 1983 • NEMA, 1998 • NWA, 1998

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
Invasive Prospecting (Phase 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 rehabilitation. Closing boreholes at the end of each day.	Throughout the operational phase.	All prospecting activities must be in accordance with the: • MPRDA, 2002; • NEMA, 1998
Invasive Prospecting (Phase 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 DMPR.

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

The draft Basic Assessment Report, stipulated all the environmental objectives related to closure and was available for perusal by the landowners, registered I&AP's and stakeholders over a 30-days commenting period. The comments received on the DBAR were incorporated into this report, the FBAR & EMPR.

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

The 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 will comply with the minimum closure objectives as prescribed by DMPR 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 DMPR 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 DMPR 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 (DMPR).

(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	- Copper, - Zinc, - Lead, - Silver, - Lithium, - Baryte, - Sillimanite-corundum, - Wolframite / Tungsten, and - Feldspar.
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 DMPR Master Rates table for financial provision of 2025 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	178 817	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	23 797	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 38: Calculation of closure cost

CALCULATION OF THE QUANTUM							
Site Name:	Strata Energy Minerals & Resources Prospecting Right			**Location:**	Namakwa Magisterial District (Port Nolloth & Steinkopf areas)		
Evaluators:	C Fouché			**Date:**	09 May 2025		
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)	m²	0	23	1.00	1.10	R 0.00
2(A)	Demolition of steel buildings and structures	m²	0	323	1.00	1.10	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m²	0	476	1.00	1.10	R 0.00
3	Rehabilitation of access roads	m²	0	58	1.00	1.10	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	561	1.00	1.10	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	306	1.00	1.10	R 0.00
5	Demolition of housing and/or administration facilities	m²	0	646	1.00	1.10	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	0	338 597	0.04	1.10	R 0.00
7	Sealing of shaft, audits and inclines	m³	0	174	1.00	1.10	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0	225 731	1.00	1.10	R 0.00
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	ha	0	281 144	1.00	1.10	R 0.00

8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	816 575	0.51	1.10	R 0.00
9	Rehabilitation of subsided areas	ha	0	189 016	1.00	1.10	R 0.00
10	General surface rehabilitation	ha	0.45	178 817	1.00	1.10	R 88 514.42
11	River diversions	ha	0	178 817	1.00	1.10	R 0.00
12	Fencing	m	0	204	1.00	1.10	R 0.00
13	Water Management	ha	0	67 992	0.17	1.10	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	0.2	23 797	1.00	1.10	R 5 235.34
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 93 749.76
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 93 749.76		**Sub Total 1**	R 98 437.24

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00	R 5 906.23
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00	-
2	Contingency	10.0% of Subtotal 1	R 9 843.72
		Sub Total 2 (Subtotal 1 plus management and contingency)	R 114 187.20
		Vat (15%)	R 17 128.08
		GRAND TOTAL (Subtotal 3 plus VAT)	**R 131 315.28**

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 131 315.28.**

The Applicant proposes the payment schedule as presented in the following table regarding the financial provision amount:

Table 39: Financial provision proposed payment schedule

PHASE	ACTIVITY	TIMEFRAME	PROPOSED REHABILITATION GUARANTEE AMOUNT (ANNUALLY CUMULATIVE)
1	Financial provision payment should the EA Application be approved.	Upon Departmental Request prior to the granting of the prospecting right.	R 65 657.64
2	Payment of Remainder	End Year 1	R 65 657.64
		Total Financial Provision	R 131 315.28

(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	**<u>Socio-Economic Environment / Land Use:</u>** - 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 DMPR. - Discuss property access with the landowners. - Surface Use Agreement in terms of the MPRDA signed with each landowner. - Grazing and veld condition map.	<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> - Prior to invasive prospecting arrange a site-specific consultation meeting with the landowner to confirm no-go areas (e.g. lambing camps, water points, or veld under recovery).	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
		- Complaints register. - Annual environmental performance assessments.	- Walk the targeted drill zones with the landowner to confirm which areas can or cannot be accessed. Map these areas to avoid e.g. sensitive grazing camps or fenced wildlife corridors. - Following this meeting, develop a detailed grazing and veld condition map with the landowner to avoid critical grazing camps during sensitive seasons. Use indigenous species and align veld rehabilitation with rotational grazing schedules. - Develop and sign a Surface Use Agreement in terms of the MPRDA with each landowner before site activities commence. Ensure that the agreement addresses access, temporary land use, and infrastructure impacts. - If, during activities, conditions change (e.g sudden veld deterioration, lambing season), the landowner must contact the appointed ECO or project manager and can request temporary halting or re-routing of prospecting activities. - Appoint an EAP to conduct annual environmental audits in accordance with the approved EMPR. Ensure that the audit reports evaluate compliance with all environmental and landowner-related	

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**
			commitments. Make copies of these reports available to all affected landowners and I&APs upon request and share a summary of findings proactively with directly affected landowners. - Once drilling in an area is completed conduct a joint walk-through with the landowner to confirm that the topsoil was returned correctly, vegetation re-establishment is underway, and fences or gates, if disturbed are repaired. - If needed, sign prospected/rehabilitated areas back to agricultural use once the cover crop stabilised	
Invasive Prospecting (Phase 4 & 6): - Site Establishment - Operational Phase	**<u>Visual Characteristics:</u>** - Visual intrusion because of site camp. - Visual intrusion because of invasive prospecting.	- Parking areas for equipment. - Good housekeeping practices.	<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> - Contain prospecting to the approved boundaries.	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**
			- 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.	
Invasive Prospecting (Phase 4 & 6): - Operational Phase - Cumulative Impacts	**<u>Groundcover, Fauna, and Biodiversity Conservation:</u>** - Potential negative impact on the identified CBA. - Potential negative impact on	- Phase two assessment by qualified ecologist and approval of the drilling plan by the DMPR. - Pre-clearance go-ahead from ECO.	<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.	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
	sensitive/protected flora within the footprint area. - Reduced ability to meet national conservation obligations and targets as a result of the proposed prospecting. - Loss and fragmentation of vegetation communities within the CBA ecosystems.	- Employee induction meetings.	Responsibility: - Arrange additional fieldwork by a qualified ecologist at the selected prospecting sites to refine ecological sensitivity and keep prospecting from sensitive areas/plants. - Ensure that the ecologist engage with all (Applicant and landowner) before finalising the drill site sensitivity map. - Submit the findings of the ecologist, with the drill plan, to the DMPR 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 and FEPA of the study area.	- Phase two assessment by qualified hydrologist and approval of the drilling plan by the DMPR.	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
	- Increase in toxic heavy metal contaminants due to prospecting.	- Visible beacons indicating the boundary of the 32 m buffer areas.	- 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 sensitivity and keep prospecting from impacting watercourses. - Submit the findings of the hydrologist, with the drill plan, to the DMPR 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.	- 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): - Operational Phase	**<u>Air Quality and Noise Ambiance:</u>** - 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.	<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> - Control the liberation of dust into the surrounding environment using; inter alia, 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	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
			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.	
Invasive Prospecting (Phase 4 & 6): - Operational Phase	**<u>Noise Ambiance:</u>** - 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.	<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> - 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	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
			terms of the National Road Traffic Act, 1996. • Implement best practice measures to minimise potential noise impacts.	
Invasive Prospecting (Phase 4 & 6): • Operational Phase • Cumulative Impact	**Fauna:** • Potential impact on fauna within the footprint area. • Fragmentation of ecosystems affecting safe movement of faunal species.	• Toolbox talks to educate employees how to handle fauna that enter the work areas. • Map showing no-go 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: • 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. • Avoid all known wildlife corridors where physically possible, including the fenced area on the eastern slopes of Tusschen-In No 143. Restrict movement of vehicles and noise-generating equipment to daylight hours and designated routes on all properties.	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
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 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.	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	**Waste Management:** - Potential soil contamination associated with littering	- Oil spill kit. - Sealed drip trays.	Role: - Site Manager to ensure day-to-day compliance with the guidelines as stipulated in the EMPR.	Applicable throughout site establishment-, operational-, and decommissioning 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
- Decommissioning Phase	and/or hydrocarbon spillages. - Potential impact associated with litter/hdyrocabon spills left at the prospecting area.	- Formal waste disposal system with waste registers.	- 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. - 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	- 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
			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. - 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.	

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	- Potential impact on areas/infrastructure of heritage or cultural concern.	- Results of the heritage walk down prior to commencement. - SAHRA approval of HIA. - Visible beacons indicating the boundary of the 30 m buffer areas. - Contact number of an archaeologist and palaeontologist that can be contacted when a discovery is made on site.	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: - Avoid the medium significant sites (AV004) and graves (AV002, TC004) when the placing of drilling sites is considered. - Arrange a heritage walk down once the drill sites have been confirmed prior to the commencement of invasive prospecting activities. Submit the results of the site based heritage study to SAHRA for perusal and approval prior to commencement of invasive prospecting. - 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 or pans as far as possible as these areas could be sensitive from a heritage point of view.	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

			- Avoid burial sites, memorials, and graves with a 30 m buffer zone.
			- 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 professional	

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
			archaeologist for an assessment of the finds who will notify SAHRA. • Work may only continue once the go-ahead was issued by SAHRA. - The fossil chance find protocol (as listed in the PIA) must be implemented if fossils are seen on the surface and when drilling commences.	
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 32 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	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
			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	**<u>Existing Infrastructure:</u>** - Deterioration of the access road due to prospecting activities.	- Grader to restore the road surface 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> - 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.	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
			- 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. 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.	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
			- 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.	
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. - Signed Surface Use Agreement in terms of the MPRDA signed with each landowner.	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: - Share the detailed prospecting phases, timeframes and access requirements with each landowner 21 calendar days prior to any invasive activity. - Screen employees to be appointed prior to inception of contract. - Do not allow employees to reside or stay overnight within the prospecting area unless provided for in the Surface Use Agreement.	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. - Do not enter negotiations with the farm employees. - Only allow prospecting during normal business hours unless otherwise authorised by the landowner. - Do not allow alcohol or prohibited drugs on site. - Maintain attendance registers, and pre-registered all prospecting vehicles/machinery with the landowner/security. - Do not allow firearms on site.	
Invasive Prospecting (Phase 4 & 6): - Operational Phase	**<u>General:</u>** - Increased fire risk during operational phase.	- Fire beaters and -extinguishers. - Toolbox talks and emergency preparedness plan.	<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	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
		- Contact number of the fire association/-brigade.	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. - 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.	

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			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 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	<u>**Geology:**</u> - Topsoil Management.	- Earthmoving equipment to strip, stockpile and spread the topsoil. - Stormwater control infrastructure. - Designated team to control weeds/invader plant species that may	<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.	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
		germinate on the topsoil heaps. - Cover crop to vegetate topsoil heaps (when needed) and reinstated soil.	Responsibility: - Strip and stockpile the upper 300 mm (if available) 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.	

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
			- Spread the topsoil evenly, to a depth of 300 m (or as previously), 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 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 DMPR 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.

Site Management:

- Stay within boundaries of site – do not enter adjacent properties.
- Keep tools and material properly stored.
- Smoke only in designated areas.
- Use toilets provided – report full or leaking toilets.

Water Management and Erosion:

- Check that rainwater flows around work areas and are not contaminated.
- Report any erosion.
- Check that dirty water is kept from clean water.

Waste Management:

- Take care of your own waste.
- 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 DMPR 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, X and

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

Christine Fouché

Signature of the environmental assessment practitioner:

Greenmined Environmental (Pty) Ltd

Name of Company:

25 August 2025

Date:

3. UNDERTAKING

I,…..*Lionel Koster*…………………….the undersigned and duly authorised thereto by……*Strata Energy Minerals & Resources (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 Somerset West this 26th day August 2025.

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 ……………………… 2025.

REGIONAL MANAGER
NORTHERN CAPE

-END-

APPENDIX A1

REGULATION 42 PROJECT MAP

APPENDIX A2

REGULATION 2(2) PROJECT MAP

APPENDIX B

LOCALITY AND LAND USE MAP OF APPLICATION AREAS

APPENDIX C

REHABILITATION PLAN

APPENDIX D1

PRELIMINARY SITE PLAN – TUSSCHEN-IN NO 143

APPENDIX D2

PRELIMINARY SITE PLAN – AARDVARK NO 164

APPENDIX D3

PRELIMINARY SITE PLAN – STEENBOK NO 165 AND FARM NO 166 (GIFKOP)

APPENDIX E
LITERATURE REVIEW AND TARGET GENERATION REPORT

APPENDIX F

TERRESTRIAL DESKTOP SENSITIVITY REPORT

APPENDIX G

HERITAGE DESKTOP ASSESSMENT

APPENDIX H

PALAEONTOLOGICAL DESKTOP ASSESSMENT

APPENDIX I1

COMMENTS AND RESPONSE REPORT

APPENDIX I2
PROOF OF PUBLIC PARTICIPATION PROCESS

APPENDIX J
SUPPORTING IMPACT ASSESSMENT

APPENDIX K
PHOTOGRAPHS OF THE SITE

APPENDIX L

CV AND PROOF OF EXPERIENCE OF THE EAP