

**PROPOSED PROSPECTING RIGHT ON PORTION  
1,2, 3 AND THE REMAINDER OF THE FARM  
KLIPVLEY KAROO KOP 153, WEST COAST  
DISTRICT MUNICIPALITY  
WESTERN CAPE PROVINCE  
SITE SENSITIVITY REPORT**



**JULY 2023**

***REFERENCE NUMBER: WC 30/5/1/3/3/2/1/ 10433 PR***

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## **EXECUTIVE SUMMARY**

The applicant Mineral Sands Resources (Pty) Ltd, applied for environmental authorisation (EA) and a prospecting right to prospect Garnet (Abbrasive), Heavy Minerals (General) Leucoxene, (Heavy Mineral) Monazite (Heavy Mineral), Rare Eaths, Rutile (Heavy Mineral), Zirconium Ore, Ilmenite (hereafter referred to as mineral resource) over Portion 1,2, 3 and the Remainder of the farm Klipvley Karoo Kop 153, West Coast District Municipality, Western Cape Province.

The proposed project triggers listed activities in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) and the Environmental Impact Assessment Regulations 2014 (as amended 2017) 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, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy) when considering the environmental authorisation. This report, the Draft Basic Assessment Report, forms part of the departmental requirements, and presents the first report of the EIA process.

### **Project description**

In light of the above, Mineral Sands Resources (Pty) Ltd (hereinafter referred to as “the Applicant”) intends applying for a prospecting right to prospect the above-mentioned mineral resource on Portion 1,2, 3 and the Remainder of the farm Klipvley Karoo Kop 153, West Coast District Municipality, Western Cape Province.

The proposed prospecting footprint applied for was approximately 3970 ha over the above-mentioned properties and all activities will be contained within the boundaries of the site. The proposed prospecting area is a natural area. And will involve the following invasive activities:

#### **■ Surface Sampling**

Where heavy mineral concentrations are noted on surface 25-liter surface samples will be collected manually with a shovel and plastic sampling bag for concentration and laboratory analysis to determine the type of minerals present and the tenor of mineralization. Each pit will be ~ 50cm x 50cm in size and dug to a maximum depth of 1m. Each sample locality will be backfilled and fully rehabilitated concurrently with sampling.

#### **■ Auger Drilling.**

Handheld engine operated auger drill. The auger is portable and will be walked to site from the closest track. Approximately 100 auger drill holes are anticipated to be drilled. The auger is in essence a corkscrew-type drill where the helical ridge raises the drilled material to the surface for sampling purposes. A total of 100 drill holes are planned for initially to be collected over an estimated 18-month period.

### ■ **Evaluation Air core Drilling**

Air-core drilling uses steel or tungsten blades to bore a hole into unconsolidated ground. The drill cuttings are removed by the injection of compressed air into the hole. This method of drilling is used to drill unconsolidated sands and soft sediments. Where possible, air-core drilling is preferred over RAB drilling as it provides a more representative sample. Air-core drilling is relatively inexpensive and is often used in first pass exploration drill programs. Air-core drilling is limited to depths of 50-60m.

The prospecting site will contain the following:

- Surveying Equipment;
- Chemical toilet
- Drilling equipment;
- Geophysical logging equipment;
- Field Vehicles;
- Sample Analysis equipment; and
- Other relevant field equipment.



Figure 1: Satellite view showing the position of Site Alternative 1 (purple polygon) within the surrounding landscape. **no alternative was identified for this site.**

This report addresses the findings of the Screening Tool Report (Appendix K), generated from the National Web Based Environmental Screening Tool, and provides motivation for the various specialist studies identified to be conducted. As per the Screening Tool Report, the proposed site is located within a medium area from an agricultural perspective, a high sensitivity area from an animal species perspective, a very high sensitivity area from an aquatic biodiversity perspective, a low sensitivity area from a civil aviation perspective, a medium sensitivity area from a plant species perspective, a low sensitivity area from a defense perspective, a very high sensitivity from a paleontology perspective and a very high sensitivity area from a terrestrial biodiversity perspective.

## 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 1: 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
<p>The screening report identified the following list of specialist assessment for inclusion in the assessment report:</p> <ul style="list-style-type: none"> <li>■ Agricultural Impact Assessment;</li> <li>■ Archaeological and Cultural Heritage Impact Assessment;</li> <li>■ Paleontology Impact Assessment;</li> <li>■ Terrestrial Biodiversity Impact Assessment;</li> <li>■ Aquatic Biodiversity Impact Assessment;</li> <li>■ Hydrology Assessment;</li> <li>■ Noise Impact Assessment;</li> <li>■ Radioactivity Impact Assessment;</li> <li>■ Traffic Impact Assessment;</li> <li>■ Geotechnical Assessment;</li> <li>■ Socio-economic Assessment;</li> <li>■ Plant Species Assessment;</li> <li>■ Animal Species Assessment.</li> </ul>			

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<p> <span style="color: green;">■</span> Agricultural Impact Assessment (AIA):         </p> <p>           As per the Soil Impact Assessment (Appendix M3), two dominant soil forms, the more sensitive forms identified within the assessment area are the Clovelly and Tongwane soil forms. The baseline findings and land capability sensitivity concur with each other, in most areas indicating a “Low” to “Moderate” land capability sensitivity. In some areas which were identified with a “Low” are characterized with soils with a good potential following the verified soil baseline findings. Overall, the area can be classified as “Medium” following the verified soil baseline on-site.         </p> <p>           Furthermore, the available climate also limits crop production significantly. The climatic conditions are associated with low annual precipitation and high evapotranspiration potential demands of the area, which might not be favourable for most cropping practices.         </p> <p>           There is no segregation of crop fields or land with a high land potential and capability identified within the proposed area. It is the specialist’s opinion that the proposed project will have limited impacts on the agricultural production ability of the land, and the proposed prospecting mining project may be favourably considered.         </p> <p> <span style="color: green;">■</span> Archaeological and Cultural Heritage Impact Assessment (HIA) &amp; Paleontology Impact Assessment (PIA):         </p> <p>           The prospecting programme will consist of invasive prospecting activities which includes surface sampling, auger drilling and air core drilling. It was noted during the screening phase that the Palaeontology Theme of the area had a high sensitivity. As per the Palaeontological Impact Assessment (Appendix M4) There are no known outcrops of sensitive fossiliferous strata in the Project Area that require protection as NO-GO sites, such as spots where fossils occur in obvious abundance. The palaeontological resources are predominantly subsurface and consequently considerations of fossil potential do not         </p>			

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<p>result in preferred sites and the particular locations of surface sampling and drilling do not affect this assessment. If the mitigation measures and monitoring programmes proposed in the PIA be implemented, then no fatal flaws could be identified that prevents the activity continuing.</p> <p>Terrestrial Biodiversity Impact Assessment (TBIA) &amp; Animal Species Assessment (ASA):</p> <p>According to the Terrestrial Impact Assessment (Appendix M1), no animal species of conservation concern were recorded on the development footprint. However common, non-threatened species are likely to inhabit the footprint and immediate surrounds. Given that area surrounding the development footprint is natural and mostly undisturbed, any faunal species that are found on the development footprint would be able to find refuge outside of the footprint.</p> <p>As per the Avifauna Impact Assessment (AIA) (Appendix M5), the total number of individual species accounts for approximately 34.3% of the total number of expected species Eight SCC was recorded within the PAOI during the survey period <i>Phalacrocorax capensis</i> (Cape Cormorant), <i>Phoenicopterus roseus</i> (Greater Flamingo), <i>Sagittarius serpentarius</i> (Secretarybird), <i>Afrotis afra</i> (Southern Black Korhaan), <i>Neotis ludwigii</i> (Ludwig's Bustard), <i>Ardeotis kori</i> (Kori Bustard), <i>Geocolaptes olivaceus</i> (Ground Woodpecker), <i>Polemaetus bellicosus</i> (Martial Eagle) and they were recorded 46 times during the surveying period.</p> <p>The SEI of the proposed PAOI was found to be Very High. However, the overall residual impacts expected for the prospecting activities is low. Management measures include ensuring the prospecting footprints are minimised and restored after prospecting. Considering the provided information in the AIA, the</p>			

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<p>specialist believes the project may be favourably considered on condition that all the mitigation and recommendations provided in this report and other specialist reports are implemented.</p> <p>■ Aquatic Biodiversity Impact Assessment (ABIA) &amp; Hydrology Assessment (HA):</p> <p>The proposed site falls within the Olifants/ Doorn Water Management Area, in the E33G quaternary catchment area. According to the Aquatic Biodiversity Compliance Statement, it was confirmed during the site inspection that depression wetland and non-perennial rivers were present on the prospecting right application area.</p> <p>The depression wetland is considered natural with limited disturbance impacts. The wetland has a high clay content and due to heavy rainfall, little to no plants are found within the depression. With heavy rainfall, the depression will be saturated and is highly likely to function as a foraging ground and habitat for various fauna. This is also given the large natural and intact area around the depression which supports a high diversity plant species</p> <p>The non-perennial river supports a high abundance and diversity of large shrubs such as <i>Roepora morgsana</i>, <i>Caroxylon aphyllum</i>, <i>Osteospermum monstrosum</i>, and <i>Lycium cinereum</i>. These rivers are in good ecological condition and are likely to support a variety of ecosystem services such as foraging ground for fauna. Some of the identified non-perennial rivers are included in Ecological Support Areas (ESA). Given that the rivers are in good condition, these specific rivers are expected to contribute significantly to functioning of the ESA. The rivers have been subject to some disturbance, including the development of roads and downstream mining activities which is expected to affect the functioning of these rivers. Present Ecological State (PES) is a measure of aquatic ecosystem condition, compared to that of the system in its natural or “reference” condition. The depression wetland and the perennial rivers have PES scores of B. The watercourses are largely natural with few modifications. A small change in natural habitats and biota may have taken</p>			



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<p>place but the ecosystem functions are essentially unchanged. Factors that have contributed are changes in the catchment hydrology and land use that contributes the small changes in flow, and changes to the channel characteristics by the development of a roads.</p> <p>The wetland and the rivers can be classified as have an EIS category of B, thus being classified as ecologically important and sensitive. Biodiversity may be sensitive to flow and habitat modifications. These watercourses have been impacted by current and past agriculture, and road infrastructure. The habitat and species richness are ecologically significant. During high rainfall events, the river can provide some stormwater management, erosion control, flood attenuation and does provide a breeding and feeding ground to various faunal species.</p> <p>The proposed prospecting works are planned within delineated rivers and a wetland. Buffer/regulated areas around the watercourses have been recommended based on Buffer Zone Guidelines for Wetlands, Rivers, and Estuaries. A general 17 m buffer around the rivers and 15 m around depression wetland has been recommended to mostly reduce the risk of sediment loading and erosion.</p> <p>The specific drilling sites are expected to be within 500m and 100m of the rivers and a wetland. However, the rivers area expected to be overall impacted by grazing, downstream mining activities and the development of a road . The PES and EIS of the rivers and wetland is concluded to be B.</p> <p>In terms of conservation significance, the rivers included in the Ecological Support Areas as a whole are expected to contribute to the Ecological Support area functioning and objectives. The wetland and rivers are likely to inhabit various aquatic fauna and flora, provide ecosystem services and has good levels of ecosystem functioning. Therefore, the rivers and wetland are still necessary for some species to be maintained and efforts to improve the condition of the rivers should be invested in.</p>			

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<p>Taking into consideration the expected sensitivity of the footprint, sensitive features identified by the Screening Tool, the results from the expected baseline biodiversity and ecosystem of the site, it can be concluded that the development footprint is of low sensitivity for the Aquatic Biodiversity Theme, given that the drilling sites will avoid the watercourses and their respective buffers. Should the drilling sites be developed in the watercourses or within the buffers, the sensitivity rating will be increased to medium-high. The applicant is in the process of applying for a water uses authorisation to the Department of Water and Sanitation, in terms of the National Water Act, 1998 (Act No 36 of 1998) which will be submitted for the Section 21 (c) and (i) waters uses.</p> <p>■ Noise Impact Assessment (NIA):</p> <p>The potential impact on the noise ambiance of the receiving environment is expected to be of low significance and representative of the vehicles already operational at the property. Due to the small scale of the operation a NIA is not deemed applicable.</p> <p>■ Radioactivity Impact Assessment</p> <p>A radioactivity impact assessment is not deemed necessary for the proposed mining operation that will not store any chemicals on site, perform activities of radioactive nature or generate hazardous waste of radioactive nature.</p> <p>■ Traffic Impact Assessment (TIA):</p> <p>The Applicant will use the existing road to access the prospecting area. No upgrading of the road is needed prior to commencement. In light of the small scale of the proposed operation a TIA is not deemed necessary, should the Applicant implement the mitigation measures to be proposed in the EMPR.</p>			

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<p>■ Geotechnical Assessment:</p> <p>No reason for a geotechnical assessment could be identified as no permanent infrastructure will be established at the proposed prospecting area.</p> <p>■ Socio-economic Assessment (SEA):</p> <p>The application is for a prospecting right as the aim of the exploration activity is to verify the geology, historical data and any and all site data for the project, as well as to produce a most up-to-date current surface geological and geotechnical map of the mineralised zone. Results of this will determine of future mining activities will be feasible. In light of this a SEA is not deemed applicable to this project.</p> <p>■ Plant Species Assessment:</p> <p>According to the Terrestrial Impact Assessment (Appendix M1), the proposed development footprint is situated in- and is surrounded by a Critical Biodiversity Area (CBA), Other Natural Areas and Aquatic Ecological Support Areas. Most of the prospecting footprint is in good ecological condition and represents the indigenous vegetation types. These are likely to contribute to the overall ecological functioning of the area. These areas are also of conservation importance given that they are classified as a Critical Biodiverse Area/Other Natural Area. The Site Ecological Importance (SEI) of the footprint was evaluated as Medium for each of the habitat units. Therefore, impacts should be minimised, and restoration activities should follow disturbance. Development activities of medium impact acceptable followed by appropriate restoration activities.</p> <p>In addition, some species of conservation were recorded in the prospecting footprint and the area is likely to provide habitat for those species (as identified by the DFFE Screening Tool) not observed during the site inspection. It must also be noted that various provincially protected species were recorded on</p>			

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<p>the footprint (not identified by the Screening Tool). For the aforementioned species, a Plant Removal Permit must be applied for before they can be removed. It is recommended that search and rescue operations be conducted prior to construction to ensure that all SCC's are properly translocated to suitable alternative habitats.</p>			

