

**SITE SENSITIVITY VERIFICATION REPORT FOR THE  
PROPOSED PROSPECTING RIGHT ON FARM  
KAREHOUTE KLOOF 221, FOR URANIUM ORE IN  
THE NAMAQUALAND MAGISTERIAL DISTRICT IN  
THE NORTHERN CAPE PROVINCE.**



**REFERENCE NUMBER:** NC 30/5/1/1/2/14026 PR

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## **EXECUTIVE SUMMARY**

Solium Energy (Pty) Ltd (“hereinafter referred to as “the Applicant”), applied for environmental authorisation (EA) and a prospecting right for Uranium Ore on farm Karehoute Kloof 221 within the Namaqualand Magisterial District in the Northern Cape Province. The proposed activity will make use of non-invasive as well as invasive prospecting that will include borehole drilling to retrieve geological core samples. No bulk sampling will be done.

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**

The proposed prospecting footprint applied for is 18 866 ha on farm Karehoute Kloof 221 for Uranium Ore within the Namaqualand Magisterial District in the Northern Cape Province.

The proposed activity will make use of non-invasive as well as invasive prospecting activities that will include borehole drilling to retrieve geological core samples. No bulk sampling will be done. Prospecting sites will be moved to various area depending on sensitivity and accessibility.

Prospecting activities will entail the following:

Non-Invasive Prospecting:

- Desktop geological studies (Year 1),
- Surface Mapping (Year 2-3),
- Radon Emanometry (Year 2-3),
- Interpretation and Analysis of Field Results (Year 2-3).

## Invasive Prospecting:

- Target Drilling (Year 4),
- Infill Drilling (Year 4).

Once the target areas were identified (during non-invasive prospecting) and the invasive prospecting commences (only in year 4), site establishment will entail discussions with the landowner regarding access to the property, the clearance of vegetation (where necessary) from the areas to be prospected, the stripping and stockpiling of the topsoil, and the introduction of the prospecting equipment.

Drill site will entail Reverse Circulation (RC) and Diamond (Core) drilling methods approximately (10m x 10m) in area at a maximum of 4 sites at any given time. Total disturbance less than 0.04 ha.

Boreholes will vary between 10 - 30 boreholes to be drilled throughout the prospecting area. Total disturbance less than 0.3 ha for the entire life of the prospecting right area.

Approximately 5 tons of drill core are expected to be generated during each drilling phase. The entirety of this material will be transported off-site, with approximately 10% being sent to a laboratory for analysis. The transportation of the core is typically carried out using standard single-cab bakkie using existing roads.

The prospecting activities does not require bulk sampling nor the use of any permanent equipment/infrastructure. Chemical ablutions will be established. All chemicals/hydrocarbons will be kept in the storage containers with drip trays.

### ■ Testing:

Approximately 5 tons of drill core are expected to be generated during each drilling phase and will be sent to an off-site laboratory to be crushed, split, pulverized, and analysed.

### ■ Electricity Need:

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

Water Use:

Water will be used for drilling, and dust suppression at the prospecting sites and access roads. Potable water will daily be transported to site, while the process water will be bought from a local source (to be identified) in the vicinity of the prospecting activities.

Waste Handling:

Due to the small scale of the activity, the generation of general waste is expected to be minimal. General waste will be managed responsibly by collecting it daily in refuse bags to maintain cleanliness and environmental compliance. The collected waste will then be transported and disposed of at a recognized waste disposal facility that adheres to relevant environmental regulations. This approach ensures that waste handling aligns with best practices for minimizing environmental impact while maintaining the efficiency and sustainability of the activity.

Hazardous waste will be contained in designated hazardous waste containers to be removed by a registered contractor. 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. When needed maintenance/servicing of the equipment will be performed at a contractor's off-site workshop.



*Figure 1: Satellite view of the proposed prospecting right area of Solium Energy (Pty) Ltd (image obtained from Google Earth).*



This report addresses the findings of the Screening Tool Report (Appendix L), generated from the National Web Based Environmental Screening Tool, and provides a motivation for the various specialist studies identified to be conducted. As per the Screening Tool Report, the proposed site is located within a high sensitivity 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 high 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 medium sensitivity form 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 following specialist studies were identified in the screening report; however, none were conducted to date due to the minimal and temporary nature of the proposed prospecting activities, as detailed below:</p> <ul style="list-style-type: none"> <li>• Agricultural Impact Assessment.</li> <li>• Archaeological and Cultural Heritage Impact Assessment.</li> <li>• Palaeontology 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; and</li> </ul>			

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<ul style="list-style-type: none"> <li>Animal Species Assessment.</li> </ul>			
<p>  Agricultural Impact Assessment (AIA):         </p> <p>An agricultural impact is a temporary or permanent change to the future agricultural production potential of land. The significance of the agricultural impact is directly proportional to the extent of the change in production potential, which is a function of:</p> <ol style="list-style-type: none"> <li>the length of time for which the change in production potential lasts</li> <li>the total footprint of land whose production potential will be changed.</li> <li>the baseline production potential (particularly cropping potential) of that land</li> </ol> <p>The proposed activities involve minimal surface disturbance (less than 0.3 hectares for the entire project) and do not require bulk sampling or permanent infrastructure. Topsoil stripping will be limited to small, designated drill sites (10m x 10m), and the topsoil will be stockpiled for rehabilitation. The temporary nature of</p> <p>  Archaeological and Cultural Heritage Impact Assessment (HIA) &amp; Paleontology Impact Assessment (PIA):         </p> <p>As per the screening report, the area has a low heritage impact and according to the SAHRA Paleontological sensitivity map the study area extend over an area of insignificant/zero (grey) concern.</p>			

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<p>Once the drill sites have been confirmed these areas have to be subjected to a heritage walk through, which should be conducted prior to the commencement of prospecting activities. The Applicant will implement a chance-find protocol on site for the duration of the site establishment, operational- and decommissioning phase. Should sensitive areas be identified, the boreholes will move accordingly.</p> <p>The project area will undergo a walk-through by specialists before invasive activities commence to identify sensitive sites, including potential archaeological and cultural heritage areas. The ability to adjust drill sites ensures that such sites can be avoided, reducing the need for a standalone assessment.</p> <p>Terrestrial Biodiversity Impact Assessment (TBIA) &amp; Plant Species Assessment (PSA) &amp; Animal Species Assessment (ASA):</p> <p>The prospecting activities involve small-scale vegetation clearance and temporary site establishment. Sensitive areas, including ecologically significant zones, will be identified during the pre-activity specialist walk-through and designated as no-go zones. Adjusting drill sites based on ecological sensitivity reduces the necessity for a detailed biodiversity study at this stage.</p> <p>With this said, the drilling sites will have to be fully rehabilitated as per the mitigation measures set out in this document as well as in consultation with the landowner / landowners. Should this prospecting right be granted farm owners will be consulted prior to commencement of any activities to ensure that safety of animals and workers.</p> <p>Plant Species Assessment (PSA):</p> <p>Sensitive plant species will be identified during the pre-activity walk-through by ecological specialists. Drill sites will be adjusted to avoid these areas, reducing the need for a detailed plant species study.</p>			



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<p> <span style="color: green;">■</span> Aquatic Biodiversity Impact Assessment (ABIA) &amp; Hydrology Assessment (HA):             Drilling locations will avoid wetlands and watercourses, as identified during the specialist walk-through. The limited scale of disturbance and adherence to buffer zones ensure minimal impact on aquatic ecosystems, eliminating the need for a separate aquatic assessment. Existing roads will be used, and strict erosion and sediment control measures will be implemented to protect nearby water resources. No permanent infrastructure or activities likely to alter surface or groundwater flows are planned, making a hydrology assessment unnecessary.         </p> <p> <span style="color: green;">■</span> Noise Impact Assessment (NIA):             Noise generation will be limited to operational hours and confined to small, localized drilling areas. Given the short-term nature of the prospecting activities and the lack of nearby noise-sensitive receptors, the impacts are expected to be negligible, reducing the need for an assessment.         </p> <p> <span style="color: green;">■</span> Radioactivity Impact Assessment             The activities involve drilling for geological core samples without bulk sampling, making significant radioactivity risks unlikely. Any unexpected findings will be managed using established protocols, so no dedicated study is required.         </p> <p> <span style="color: green;">■</span> Traffic Impact Assessment (TIA):             The transport of drill cores will be conducted using standard single-cab bakkies on existing roads, generating minimal additional traffic. The temporary nature of the activity and the small number of vehicles involved ensure no significant impact on traffic flows, negating the need for an assessment, should the applicant implement the mitigation measures to be proposed in the EMPR.         </p>			

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<p> <span style="color: green;">■</span> Geotechnical Assessment:             The project does not involve construction or permanent infrastructure requiring a geotechnical foundation analysis. The localized nature of the disturbance limits the relevance of a geotechnical study.         </p> <p> <span style="color: green;">■</span> Socio-economic Assessment (SEA):             The activities are short-term and localized, with minimal disruption to surrounding communities. Discussions with landowners and adherence to access agreements ensure that socio-economic impacts remain negligible, obviating the need for an assessment.         </p>			

