

**SITE SENSITIVITY VERIFICATION REPORT FOR THE
PROPOSED STONE AGGREGATE AND
GRAVEL QUARRY ON PORTION 0 OF PORTION 0 OF
FARM 94, ABERDEEN, EASTERN CAPE.**



REFERENCE NUMBER: EC30/5/1/3/2/10980 MP

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EXECUTIVE SUMMARY

The Applicant, Power Construction (Pty) Ltd has applied for a Mining Permit and Environmental Authorisation (EA) for the extraction of dolerite aggregate from Portion 0 of Farm 94 (Perseverance), situated approximately 10 km south of Aberdeen within the Dr Beyers Naudé Local Municipality, Sarah Baartman District Municipality, Eastern Cape Province. The proposed quarry footprint covers approximately 5 hectares and is located on a rocky dolerite outcrop characterised by shallow soils, sparse Nama-Karoo vegetation, and low agricultural potential.

The proposed development entails the establishment of a small-scale open-cast quarry to supply aggregate for local construction, infrastructure development, road maintenance projects, and renewable energy developments within the Aberdeen region. Mining will be undertaken using conventional quarrying methods, including drilling, controlled blasting, excavation, crushing, screening, stockpiling, and transportation of aggregate material. The operation will follow a phased mining approach to minimise environmental disturbance and facilitate concurrent rehabilitation of disturbed areas. The mining permit is anticipated to be valid for an initial period of two years, with the option of a further three-year extension in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).

Access to the quarry will be obtained via an existing gravel road connecting to the R61 provincial road, with a new access road and internal haul roads constructed within the approved mining permit area. Extracted material will be processed on-site using a mobile crushing and screening plant before being stockpiled and transported to customers via the existing road network. Power will be supplied through generators and/or solar installations, while water requirements will be limited primarily to dust suppression and domestic use.

The project aims to provide a strategically located source of aggregate material to support infrastructure development and economic growth within the Dr Beyers Naudé Local Municipality and surrounding areas. By reducing haulage distances and improving the availability of construction materials, the quarry will contribute to more efficient project implementation, support local employment opportunities, and stimulate regional economic activity.

The proposed activity 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). Consequently, a Basic Assessment Process is required to identify and assess project-specific environmental impacts, evaluate reasonable alternatives, facilitate public participation, and develop appropriate mitigation measures through an

Environmental Management Programme (EMPr). The findings of the assessment will inform the decision-making process of the Department of Mineral and Petroleum Resources (DMPR) regarding the Environmental Authorisation application. This Draft Basic Assessment Report (DBAR) forms part of the statutory application process and is submitted for public review and comment as part of the Environmental Impact Assessment process.

Project description

The proposed quarry footprint covers approximately 5 hectares and is situated on Portion 0 of Farm 94 (Perseverance), approximately 10 km south of Aberdeen in the Eastern Cape Province. The site is located within a semi-arid Karoo landscape characterised by shallow soils, rocky dolerite outcrops, sparse Nama-Karoo vegetation, and low-intensity livestock grazing. Mining activities will be undertaken within the approved mining permit boundaries and implemented in a phased manner to minimise environmental disturbance and facilitate progressive rehabilitation.

The proposed mining method will consist of open-cast quarrying for the extraction of dolerite aggregate. Mining operations will commence with the stripping and stockpiling of topsoil for later use during rehabilitation. Thereafter, drilling and controlled blasting will be undertaken to fragment the rock, followed by excavation and loading using earth-moving equipment. Material will be hauled to a mobile crushing and screening plant where it will be processed into various aggregate sizes. Processed material will be stockpiled within designated areas before being transported off-site to clients by tipper trucks. Active mining areas will be limited to discrete sections at any given time, allowing for concurrent rehabilitation of completed sections before mining advances to new areas.

The proposed mining area extends over approximately 5 hectares, and the mining permit is anticipated to be valid for an initial period of two years, with the option of a further three-year extension in accordance with the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002). The extracted dolerite aggregate will supply construction, infrastructure, road maintenance, and renewable energy projects within the Aberdeen region and surrounding areas. The project will contribute to regional infrastructure development by providing a reliable and strategically located source of construction aggregate while reducing haulage distances and associated transportation costs.

The mining activities will consist of the following:

- Demarcation of the approved mining area and site establishment;
- Stripping and stockpiling of topsoil;

- ✦ Drilling and controlled blasting of rock;
- ✦ Excavation, loading, and hauling of material to the processing area;
- ✦ Crushing and screening of aggregate;
- ✦ Stockpiling and transportation of processed aggregate;
- ✦ Progressive rehabilitation of mined areas;
- ✦ Sloping, landscaping, and stabilisation of disturbed areas upon closure; and
- ✦ Replacement of available topsoil and promotion of natural revegetation.

The mining site will contain the following infrastructure and facilities:

- ✦ Drilling equipment, excavators, front-end loaders, and earth-moving equipment;
- ✦ Mobile crushing and screening plant;
- ✦ Access and internal haul roads;
- ✦ Site office and workshop containers;
- ✦ Parking and laydown areas;
- ✦ Site vehicles and light delivery vehicles;
- ✦ Chemical ablution facilities;
- ✦ Bunded diesel and oil storage facilities;
- ✦ Generator and/or solar power supply;
- ✦ Weighbridge; and
- ✦ Designated general and hazardous waste storage areas.

The proposed project will not require a connection to the national electricity grid. Power will be supplied through on-site generators and/or solar installations. Diesel and hazardous substances will be stored in appropriately bunded facilities and managed in accordance with applicable safety and environmental requirements.

Access to the proposed quarry will be obtained via an existing gravel road connecting to the R61 provincial road. A new access road will be constructed within the approved mining permit area to provide access to the quarry and associated laydown area. Internal haul roads will connect the active mining areas, processing plant, and stockpile areas. These roads will be extended as mining progresses and rehabilitated as part of the final closure and rehabilitation process. All aggregate transported from the site will utilise the existing provincial road network, including the R61.

Water requirements for the operation will be limited primarily to dust suppression and domestic use. Water will be sourced from authorised supplies and transported to site where necessary.

Dust suppression measures will include the application of water to haul roads and operational areas, subject to operational requirements and water availability.



Figure 1: Figure 1: Satellite view of the proposed mining permit area (red polygon) of Power Construction (Pty) Ltd (image obtained from Google Earth).

This report addresses the findings of the Screening Tool Report (Appendix D), 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 low sensitivity area from an agricultural perspective, a medium sensitivity area from an animal species perspective, a low sensitivity area from an aquatic biodiversity perspective, a low sensitivity area from a civil aviation perspective, a low sensitivity area from a plant species perspective, a low sensitivity area from a defense perspective, a medium sensitivity form a paleontology perspective and a low 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 for an environmental authorisation, as required in terms of the 2014 NEMA EIA Regulations on portion of Portion 2 the farm Bonne Esperance 83, Tulbagh, Western Cape Province. The report identified the following list of specialist assessment for inclusion in the assessment report:</p> <ul style="list-style-type: none"> ■ Agricultural Impact Assessment; ■ Archaeological and Cultural Heritage Impact Assessment; ■ Palaeontology Impact Assessment; ■ Terrestrial Biodiversity Impact Assessment; ■ Aquatic Biodiversity Impact Assessment; ■ Hydrology Assessment; ■ Noise Impact Assessment; ■ Radioactivity Impact Assessment; ■ Traffic Impact Assessment; ■ Geotechnical Assessment; ■ Socio-economic Assessment; ■ Plant Species Assessment; ■ Animal Species Assessment. <p>Power Construction (Pty) Ltd (hereafter referred to as the applicant) appointed Greenmined Environmental (Pty) Ltd as the environmental impact assessment practitioner (EAP) to undertake the EIA associated with the mining permit application. In light of this Greenmined would like to respond as follows to the list of required specialist studies:</p>			

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<p> ■ Agricultural Impact Assessment (AIA): </p> <p> According to the Screening Tool Report, the Agricultural Theme Sensitivity of the area is very high therefore the agricultural potential of the mining area was assessed as part of the EIA, with the input opinion of an AIA specialist as follows also attached as Appendix M Agriculture Impact Assessment. </p> <p> The assessment confirms the site's high agricultural sensitivity and its suitability for viable rainfed crop production. Without effective rehabilitation, the proposed mining activity may lead to a reduction in the agricultural production potential, impacting national food security. Given the small area affected (less than 5 hectares), the impact is considered of medium significance without mitigation, but low significance with proper mitigation. </p> <p> To minimize the impact on agricultural productivity, the following rehabilitation steps are recommended: </p> <p> <u>Topography and Surface Restoration:</u> </p> <p> The area should be smoothed to allow for cultivation post-mining. </p> <p> <u>Drainage:</u> </p> <p> No depressions should be left that could lead to water ponding. </p> <p> <u>Erosion Control:</u> </p> <p> Erosion across and downslope of the mined area should be prevented. </p>			

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<p><u>Crop Establishment:</u></p> <p>Successfully establish a crop across the rehabilitated area.</p>			
<p>Archaeological and Cultural Heritage Impact Assessment (HIA) & Paleontology Impact Assessment (PIA):</p> <p>According to the Screening Tool Report, the Archaeological and Cultural Heritage Theme Sensitivity of the area is low. The Paleontology Theme Sensitivity of the area was deemed medium. As per the NID application submitted to Heritage Western Cape (HWC) (appendix M3) The historical core of Saron (a mission station with several historical structures) lies more than 4 km from the site, with no anticipated cultural impacts. The surrounding mountains are visually significant, but the temporary nature of the project minimizes landscape impact. Sparse Early Stone Age artifacts (8 pieces) were identified on-site, far fewer than neighboring sites that warranted mitigation. The density of artifacts was deemed too low to require further intervention. The site lies on Quaternary sands, terrace gravels, and rocks from the Malmesbury Group, which have undergone metamorphosis, destroying any potential fossils. Surface materials (sands and gravels) lack conditions for fossil preservation. No significant graves, slavery-related sites, or other notable heritage resources were identified. The mining site and activities are expected to have no significant impacts on archaeological, paleontological, or other heritage resources. Since there is very low to zero chance of fossils occurring in the rocks to be mined, it is recommended that, as far the palaeontology is concerned, the project should be authorised. There is a very small chance that fossil shells might be present so a Fossil Chance Find Protocol is included in this comment.</p> <p>Dr. Jayson Orton, an archaeologist and heritage consultant, recommended approving the development. All mining activities should stay within approved boundaries, with proper closure and rehabilitation processes followed. The project has been cleared regarding heritage concerns under Section 38 of the National Heritage Resources Act, as no significant impacts were identified. The assessments concluded that the proposed mining activities would not significantly affect archaeological, cultural, or paleontological resources. As such, the project received approval with recommendations to maintain operational boundaries and follow rehabilitation guidelines.</p>			
<p>Terrestrial Biodiversity Impact Assessment (TBIA), Animal Species Assessment (ASA), Plant Species Assessment (PSA) - attached as Appendix M2:</p> <p>As per the Terrestrial Biodiversity Impact Assessment the report concludes that the proposed development site has been classified as "Very Low" in ecological sensitivity based on assessments. The surveys revealed no significant natural vegetation or Species of Conservation Concern (SCC) within the site or in the immediate surrounding areas. Additionally, the site does not include any ecosystems under threat nor areas designated as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs). Consequently, the proposed project is deemed to have minimal impact on terrestrial biodiversity and plant species, with no fatal flaws identified that would prevent project approval.</p>			

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<p>The report provides several impact management actions to minimize environmental disturbance during construction and operation:</p> <p><u>Vegetation Management:</u></p> <p>Ensure strict controls to prevent the spread of alien or invasive species. Any alien plants identified on-site should be removed and managed in accordance with regulations, and no non-native plants should be introduced.</p> <p><u>Erosion Control:</u></p> <p>Erosion prevention measures by limiting disturbed areas, utilizing existing roads and pathways where possible, and monitoring for signs of erosion, especially in areas vulnerable to runoff should be implemented.</p> <p><u>Waste and Pollution Control:</u></p> <p>All staff should be educated in environmental protection measures, including proper handling of waste, avoiding littering, and managing potential pollution sources like chemical spills.</p> <p><u>Indigenous Vegetation Preservation:</u></p> <p>Avoid disturbing Any disturbance on indigenous vegetation outside the designated project footprint should be avoided and vehicle movement should be restricted to demarcated areas to prevent unnecessary habitat fragmentation.</p> <p><u>Regular Monitoring:</u></p> <p>Conduct ongoing monitoring for erosion and alien plant regrowth, with follow-up treatments as needed to maintain environmental integrity</p>			

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	<p>■ Aquatic Biodiversity Impact Assessment (ABIA) & Hydrology Assessment (HA): The proposed project does require a Water Use Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No 36 of 1998). As per the Risk Matrix Assessment (please see Appendix M1). The assessment process indicated low-risk impacts, it's crucial to note that it was conducted without on-site verification. Given the potential for unforeseen ecological consequences, particularly regarding vegetation disturbance, water quality degradation, and sediment runoff, a cautious approach is necessary. Although the project may qualify for General Authorisation, it is imperative to implement robust mitigation measures and consider additional on-site verification to minimize environmental impact and ensure sustainable development. A non-prioritised man-made wetland is located within 500m of the site. This wetland appears to be a small dam system considering the surrounding landscape characteristics, it is possible that the wetland system could extend into the site footprint. Although the extensive history of agricultural farming on the site would suggest that the wetland unit is likely to be highly degraded. Any water required for the implementation of the project will be sought from an authorised source and transported to site. The use of potable water for dust suppression should be avoided.</p>		
	<p>■ Noise Impact Assessment (NIA): The mining permit application is for a borrow pit that will be mined by direction excavation only. Mining does not necessitate blasting or excessive processing of the material once mined. Mining will be conducted during normal working hours and will not be within proximity to any sensitive receptors such as tourism facilities, farmhouses etc. The mining area is also directly adjacent to the access road and therefore not in a pristine environment. Therefore, the potential impact on the noise ambience of the receiving environment is expected to be of very low significance. Due to the small scale of the proposed operation and its location in an already compromised environment a NIA is not deemed applicable. The potential impact on the noise ambience of the receiving environment is expected to be of low significance due to the location of the proposed mining area being far away from residential dwellings. Due to the small scale of the operation a NIA is not deemed applicable.</p>		
	<p>■ Radioactivity Impact Assessment A radioactivity impact assessment is not deemed necessary for the proposed borrow pit, as the mine will not store any chemicals on site, perform activities of radioactive nature or generate hazardous waste of radioactive nature.</p>		

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<p>■ Traffic Impact Assessment (TIA):</p>	<p>Material from the proposed borrow pit will be used for construction industry in the vicinity by providing material to the Berg and Zen Wind Farm projects and other related and non-related projects in the area. Therefore, access to the borrow pit will be along the existing road that has formal access onto the R44. The operation will be temporary as part of construction in the area. Therefore, a TIA is not deemed necessary.</p>		
<p>■ Geotechnical Assessment:</p>	<p>No reason for a geotechnical assessment could be identified as no permanent infrastructure will be established at the proposed mining area.</p>		
<p>■ Socio-economic Assessment (SEA):</p>	<p>The material to be sourced from the mining area will be used for the Berg and Zen Wind Farm projects and other related and non-related projects in the area, directly and indirectly creating jobs and resulting in a boost to the local economy. The proposed borrow pit, being close to the Berg and Zen Wind Farm projects, will result in less environmental impacts due to reduced distances for hauling material thereby resulting in reduced CO2 emissions, reduced dust, less impact on the condition of roads and reduced safety risk. road that directly borders the site. Should any additional workers be required on this mining activity they will be sourced from the local community. Workers will daily be transported to the site. The establishment of the mining area on the farm will supply much needed material Berg and Zen Wind Farm projects that is of national importance and is ideally located within direct proximity to the construction works. The landowner agrees with the application and the proposed project will assist the property owner in the diversification of his income. Considering this and the small scale of the project a SEA is not deemed applicable to this project.</p>		

