

# HERITAGE IMPACT ASSESSMENT

## PROPOSED MINING ON THE REMAINDER OF THE FARM DIKDOORN NO. 535 NEAR GARIES NORTHERN CAPE

### SPECIALIST ARCHAEOLOGICAL STUDY

Prepared for

#### **SITE PLAN**

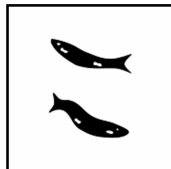
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### **Executive summary**

ACRM was appointed to conduct a Heritage Impact Assessment – specialist archaeological study - for the proposed mining (quarrying) of road gravel on the Remainder of the Farm Dikdoorn No. 535, near Garies in the Northern Cape.

Mining activities will be restricted to a previously disturbed area, but a largely undisturbed area has been identified for the stockpiling of quarried material.

The South African Heritage Resources Agency (SAHRA) was informed of the proposed activities (Case ID 1614), who requested that a letter of exemption from further archaeological study be obtained from a professional archaeologist.

ACRM was instead instructed by Site Plan Consulting to proceed with a Phase 1 Archaeological Impact Assessment (AIA) in order to confirm the presence or absence of any archaeological heritage in the proposed stockpiling area.

A survey of the proposed plant and logistics area, and the proposed and proposed alternative stockpiling area, was undertaken on 21 March 2013, in which the following observations were made:

- No pre-colonial archaeological heritage was encountered during the study.
- No visible graves were encountered during the study
- There are no old buildings, structures or features, or any old equipment in the proposed footprint area.

The results of the study indicate that the proposed stockpiling of road gravel on a portion of the Remainder of the Farm Dikdoorn No. 535 will not have any impact on the archaeological heritage.

The project is therefore deemed to be viable and the following recommendation is made:

1. No further archaeological mitigation is required.

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## 1. INTRODUCTION

ACRM was appointed by Site Plan Consulting to conduct a Heritage Impact Assessment – specialist archaeological study- for the proposed mining (quarrying) of road gravel on the Remainder of the Farm Dikdoorn No. 535, near Garies (Kamiesberg Local Municipality) in the Namaqualand region of the Northern Cape (Figure 1).

Gravel is required for road maintenance and rehabilitation work in the Garies area, and an abandoned quarry on the Farm Dikdoorn No. 535 has been identified which can meet the material requirements for the project. Mining activities will be restricted to the previously disturbed area, but a largely undisturbed area has been identified for the stockpiling of quarried material. Quarrying will occur as a blast and drill operation, and all source material will be screened, crushed and stockpiled on site. Material will later be transported elsewhere for use as road gravel, when required. Once mining has ceased, all disturbed areas will be rehabilitated.

The South African Heritage Resources Agency (SAHRA) was informed of the proposed activities (Case ID 1614) who requested that a letter of exemption from further archaeological study be obtained from a professional archaeologist. ACRM was instead instructed to conduct a Phase 1 Archaeological Impact Assessment (AIA) in order to confirm the presence or absence of any archaeological heritage on the affected site.

The aim of the study is to locate and map any archaeological heritage that may be impacted by the proposed project, to assess the significance of the potential impacts and to propose measures to mitigate the impacts.

## 2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m<sup>2</sup> is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

Archaeological study proposed mining on the Remainder of Farm Dikdoorn 535, near Garies

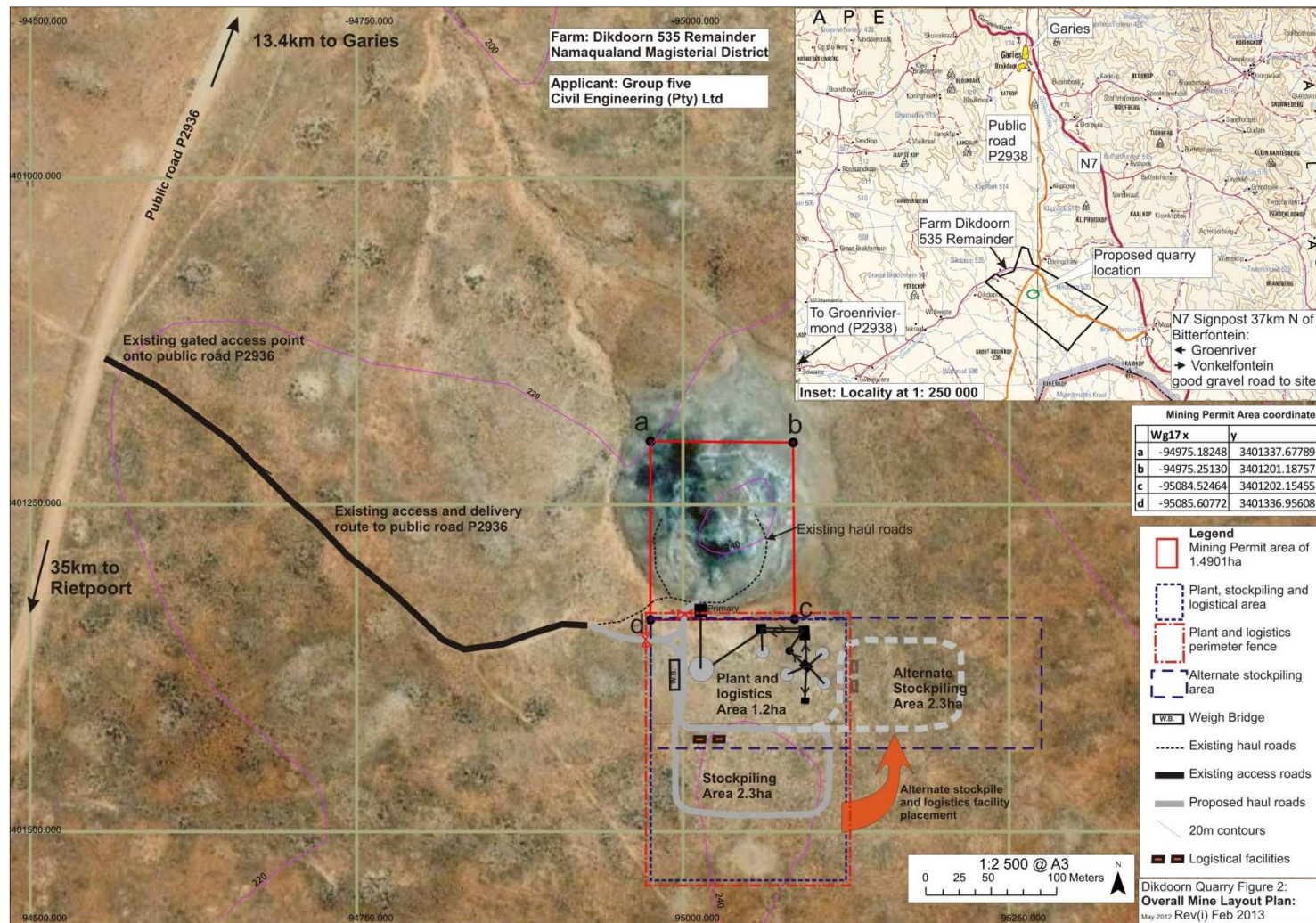


Figure 1. Locality map and Google Earth map illustrating the proposed mine layout plan

### **3. TERMS OF REFERENCE**

The terms of reference for the study were to:

- Determine whether there are likely to be any important archaeological heritage that may be impacted by the proposed activities;
- Identify potentially sensitive archaeological areas, and
- Recommend any further mitigation action.

### **4. DESCRIPTION OF THE RECEIVING ENVIRONMENT**

The farm Dikdoorn No. 535 is located about 18kms south of Garies, on the Groenrivier/Kotzesrus road (P2938) in the Namaqualand region of the Northern Cape Province. Access to the site is easiest from the N7/Groenrivier turnoff, where the existing quarry (a basalt hill) is located about 9kms west of the road.

According to the land owner, Mr Pieter Schreuder (pers. comm.) the old mine has been abandoned for many years, and all mining related equipment has since been removed from the area. Associated infrastructure includes gravel access and old haul roads.

Most of the proposed plant and logistics area (1.2 ha) is already previously disturbed and constitutes a heavily transformed landscape (Figures 3 & 5), but a largely undisturbed area has been identified for the stockpiling of mined material including a proposed alternative stockpiling area (refer to Figure 1).

The proposed 2.3 ha stockpiling area is covered in red sands and bush, and slopes gently from north to south (Figures 6 & 7). A gravel farm road intersects the site from east to west. Quartz gravels and stone are exposed where the top soils have been removed as a result of sheet wash and erosion. A small outcropping of quartz was also noted. There is very little surface stone covering the proposed footprint area, apart from the very rocky ledge overlooking the old plant area (Figure 8). There are a few small heuweltjies in the south eastern portion of the proposed site, but no significant landscape features.

The proposed alternative 2.3 ha stockpiling area is covered in red sand and bush and slopes gently to the east. Much of the site is covered in red sand and bush but there are also larger patches of quartz gravels where the top soils have been washed away (Figure 9). The north eastern portion is covered in thick bush (Figure 10).

There are no old buildings, structures or features, or any old equipment in the proposed footprint area, or in the surrounding area.

There are no visible graves in the affected area.

Surrounding land use is gravel roads, marginal grazing (goats) and vast tracts of vacant land/Wilderness area. The Groenrivier is located about 1.8kms northwest of the abandoned quarry.



Figure 2. View of the existing quarry facing east. Note the old haul roads.



Figure 3. View of the proposed plant & logistics area in the foreground.



Figure 4. View of the proposed plant & logistics area facing west.



Figure 5. View of the proposed stockpiling area facing south.



Figure 6. View of the proposed stockpiling area facing south.



Figure 7. View of the proposed stockpiling area facing north.





Figure 8. Overlooking the old mine and the proposed plant & logistics area.



Figure 9. View of the proposed alternative stockpiling area facing east.



Figure 10. View of the proposed alternative stockpiling are facing west.

## **5. STUDY APPROACH**

### **5.1 Method of survey**

A foot survey and inspection of the proposed plant and logistics area, and the proposed and proposed alternative stockpile area was undertaken by J. Kaplan on 21 March, 2013.

A track path of the survey was also done (refer to Figure 11)

A desk top study was undertaken.

### **5.2 Constraints and limitations**

There were no constraints or limitations associated with the study and archaeological visibility was very good.

### **5.3 Identification of potential risks**

The results of the study indicate that there are no archaeological risks associated with the proposed activity.

### **5.4 Results of the desk top study**

Very little archaeological work has been done in the Garies area, but much work has been done on the Namaqualand coast about 50kms west of the town. While this arid region receives less than 150 mm of rain a year, its rocky coastline and sandy shoreline is extremely productive, teeming with shellfish, crayfish, marine birds and mammals. Despite this unforgiving landscape, the shoreline attracted pre-colonial Stone Age hunter-gatherers, as it offered opportunities for the exploitation of marine foods, particularly shellfish. More than 1500 archaeological sites have been documented on the Namaqualand coast (Kaplan 1993). Most of these sites have been identified while conducting AIA's ahead of open-cast diamond and mineral sand mining operations on land owned by De Beers and Namakwa Sands (now Exxaro) (Halkett 2003; Halkett & Hart 1987; Hart & Halkett 1993, 1994a, 1994b; Hart & Lanham 1997; Parkington & Hart 1993, 1991a, b; Parkington & Poggenpoel 1990). With the recent discovery of natural gas deposits west of the mouth of the Groenrivier, more sites have been added to the archaeological data base (Kaplan 2007, Orton & Hart 2011). The studies have shown that there is an almost continuous distribution of shell midden and wind-deflated sites along the rocky shoreline, and adjacent to dune ridges and sandy beaches.

While the work done by Dewar (2006, 2007) has revealed that parts of Namaqualand were occupied by Early Stone Age (ESA) people more than a million years ago, the greatest amount of archaeological sites are those which relate to the ancestors of the San (hunter gatherers) and Khoekhoen (Herders) which have been dated to the last 5000 years (Webley 1992). Subsequent research including excavations at several localities between Brandsebaai and the mouth of the Orange River have now shown that Middle Stone Age (MSA) people have been exploiting coastal resources since the Last interglacial period about 120 000 years ago (Hart 2006).

In recent years, some of the near shore mining has shifted inland, where diffuse scatters of Later Stone Age (LSA) sites containing stone tools, shellfish, bone and pottery are associated with small heuweltjies dotted around the landscape (Orton 2007 & pers. com. 2012). An archaeological risk assessment for proposed mining of heavy mineral sands at Leeuvlei & Roode Heuwel, about 35 kms south west of Garies, on the Groenrivier road, encountered some surface archaeological heritage among the shifting red sands (Kaplan 2012). Sites inland from the coast, however, appear to be mainly concentrated along river courses, streams and floodplains, but unknown springs and pans may also occur further away from these obviously predictable water sources. Rocky outcrops and boulders would definitely have been targeted by Stone Age people in the past, and several such rock shelters with archaeological deposits, shellfish, stone tools, pottery, ostrich eggshell, and even rock art have been documented south of Groenrivier, near Kotzesrus (Orton & Hart 2011), as well as alongside the river (personnel observation).

Historical graves are usually well marked and mostly occur in small farm graveyards. Pre-colonial graves, on the other hand, can occur at any location where sand suitable for excavation and burial exists. This is particularly the case in the coastal area where dunes abound. Pre-colonial graves are unmarked and have been found in various locations throughout the western coastal region of South Africa, including several in Namaqualand. A human burial was found at the mouth of the Groenrivier (Jerardino *et al* 1992). Their locations cannot be predicted and no plans can be made to avoid intersecting such graves.

## **6. FINDINGS**

No pre-colonial archaeological heritage was encountered during the survey of the affected areas (i.e. the plant and logistics area, and the proposed and proposed alternative stockpiling area).

## **7. CONCLUSION**

The survey has identified no impacts to pre-colonial archaeological material.

The receiving environment is not a sensitive or threatened archaeological landscape.

## **8. RECOMMENDATIONS**

With regard to the proposed stockpiling of road gravel on a portion of the Remainder of the Farm Dikdoorn No. 535, the following recommendation is made:

1. No further archaeological mitigation is required.

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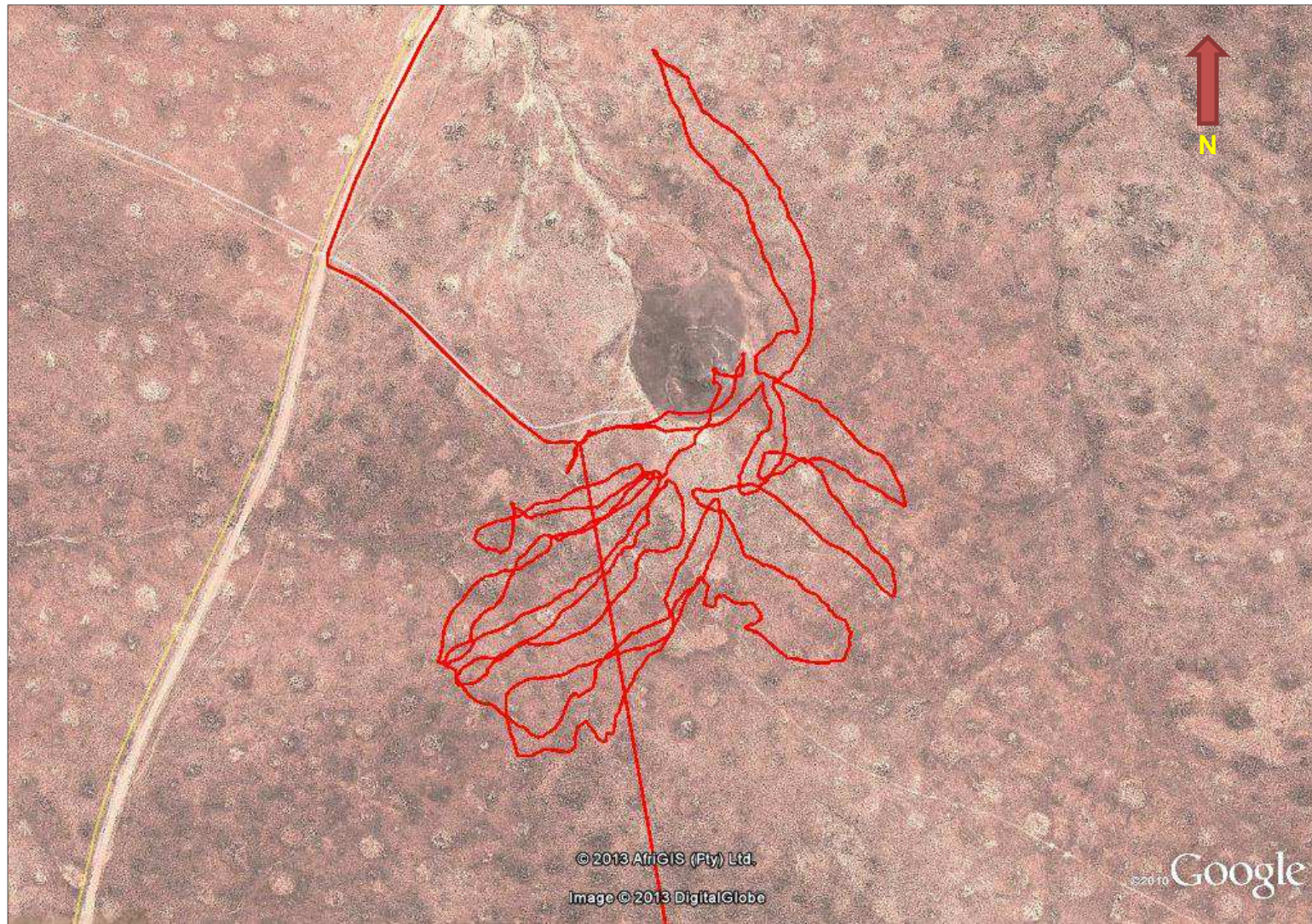


Figure 10. Track path of survey