

APPENDIX D₁

Heritage Report

Phase 1 Heritage Impact Assessment for new cemetery development on Erf 431 or Erf 1376 and Erf 1654, Kakamas NC Province.

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Summary

The proposed development footprint is underlain by palaeontologically insignificant intrusive rocks that are capped by palaeontologically sterile superficial deposits (Kalahari Group calcretes and sandy soils). As far as the palaeontological heritage is concerned, the proposed developments on Erf 431 or Erf 1376 and Erf 1654 may proceed with no further palaeontological assessments required. The sites are not considered archaeologically vulnerable, and there are no major archaeological grounds to suspend the proposed developments, provided that all excavation activities are confined to within the confines of the development footprint. All the study areas are considered to be of low archaeological significance and is assigned a site rating of Generally Protected C.

Introduction

A Phase 1 Heritage Impact Assessment was carried out for two new cemetery developments, namely the proposed expansion of an existing cemetery onto Erf 431, Kakamas, that also includes an alternative site located on the adjacent Erf 1376, as well as a new cemetery located on Erf 1654 Kakamas (**Fig. 1**).

The extent of the proposed development (over 5000 m²) falls within the requirements for a Heritage Impact Assessment (HIA) as required by Section 38 (Heritage Resources Management) of the South African National Heritage Resources Act (Act No. 25 of 1999). The site visit and subsequent assessment took place in November 2018. The task involved identification of possible archaeological and paleontological sites or occurrences in the proposed zone, an assessment of their significance, possible impact by the proposed development and recommendations for mitigation where relevant.

Site Information

1 : 50 000 scale topographic map 2820DC Kakamas

1 : 250 000 scale geological map 2820 Upington

Site centroid coordinates

Existing Cemetery between Erf 431 & 1376: 28°46'56.39"S 20°37'35.66"E

Erf 1654: 28°47'38.06"S 20°36'44.53"E

The proposed expansion and alternative site on Erf 431 and Erf 1376 respectively covers 3.25 ha and 2.6 ha of severely degraded terrain and is located on Binne Street in Kakamas (**Fig. 2 & 3**). The proposed new cemetery site situated on Erf 1654 is located next to a landfill site and covers 4.4 ha of open rocky terrain, about 2.5 km south of the Kakamas CBD (**Fig. 4 & 5**).

Methodology

The palaeontological and archaeological significance of the affected area was evaluated through a desktop study and carried out on the basis of existing field data, database information, published literature and maps. This was followed up with a field assessment by means of a pedestrian survey and investigation of all exposed sections within the footprint. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes.

Site significance classification standards prescribed by SAHRA (2005) were used to indicate overall significance and mitigation procedures where relevant (**Table 1**).

Background

Palaeontology

According to the 1 : 250 000 scale geological map of the area (2820 Upington, Council for Geoscience, Pretoria) the proposed development footprints are underlain by well-developed, superficial deposits located on intrusive Makolian rocks of the Kakamas Terrane (pink weathering Riemvasmaak gneiss, *Mrm*, **Fig. 6**). These rocks are not considered to be palaeontological significant because of the intrusive nature of the strata. The superficial sediments within the study area are made up of Kalahari Group (Quaternary) windblown sand and calcretes. While carbonate-rich overbank deposits associated with large river courses can

be potentially fossiliferous, there are currently no records of Quaternary fossil localities within the vicinity of the proposed study areas.

Archaeology

The presence of Early, Middle and Later Stone Age artefacts on the Middle Orange River landscape bears evidence of long-term human habitation during prehistoric times (Rudner 1969; Beaumont et al 1995). Archaeological and historical evidence also show that the region was extensively occupied by Khoi herders and San hunter-gatherers during the last 2000 years. Khoi groups such as the Einiqua occupied the area around and east of the Augrabies Falls while the Korana occupied the Middle-Upper Orange River further to the east (Burchell 1822; Penn 2005). A large number of burial cairns were recorded on the Orange River in the Kakamas area on the farms Renosterkop, Rooipad and Augrabies Town and appear to be related to Khoekhoen people, specifically the Einiqua, and historical data shows that a large number of the graves date to the 18th and early 19th centuries (Dreyer & Meiring 1937; Morris 1992, 1995). Rock engraving sites are known to occur along rocky outcrops within the younger valley fills associated with the Orange River in the region (Van Riet Lowe 1941).

Field Assessment

Erf 431 and Erf 1376

Both study areas consists of severely degraded terrain capped by an admixture of weathered bedrock (gneiss) as well as Kalahari Group calcretes, sandy soils and alluvium. Investigation of superficial cuttings and shallow excavation pits located within the study area revealed no evidence of Quaternary fossil remains or exposures. There is no aboveground evidence of intact Stone Age archaeological assemblages or sites, prehistoric structures, graves or historically significant structures older than 60 years. The proposed footprints largely consists of degraded terrain as a result of previous and ongoing human activities related to informal settlement.

Erf 1654

The site has been heavily degraded by rubbish dumping from the nearby landfill site. There is no aboveground evidence of intact Stone Age archaeological assemblages or sites, prehistoric structures, graves or historically significant structures older than 60 years.

Impact Statement and Recommendations

Erf 431 and Erf 1376

The chances of palaeontological impact resulting from the proposed development are considered to be improbable because of the nature of the underlying geology. As far as the palaeontological heritage is concerned, the proposed development affecting both Erf 431 and Erf 1376 may proceed with no further palaeontological assessments required. If, in the unlikely event that localized fossil material is discovered within the superficial overburden during the construction phase of the project, it is recommended that a professional palaeontologist be called in to record and rescue the fossils where necessary. The study areas are located within a region that has previously yielded ample archaeological as well as historical evidence of the early movement and settlement of Khoi herders and San hunter-gatherers along the Orange River during the last 2000 years. However, the proposed development footprint is located on fairly degraded terrain resulting from previous and ongoing human activities related to informal settlement.

The terrain is not considered archaeologically vulnerable, and there are no major archaeological grounds to suspend the proposed development, provided that all excavation activities are confined to within the confines of the development footprint. The study area is considered to be of low archaeological significance and is assigned a site rating of Generally Protected C (**Table 1**).

Erf 1654

The chances of palaeontological impact resulting from the proposed development are considered to be improbable because of the nature of the underlying geology. As far as the palaeontological heritage is concerned, the proposed development may proceed with no further palaeontological assessments required.

The study area is located within a region that has previously yielded ample archaeological as well as historical evidence of the early movement and settlement of Khoi herders and San hunter-gatherers along the Orange River during the last 2000 years. However, the proposed development footprint is located on fairly degraded terrain resulting from previous and ongoing human activities related to rubbish dumping.

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activities are confined to within the confines of the development footprint. The study area is considered to be of low archaeological significance and is assigned a site rating of Generally Protected C (**Table 1**).

References

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DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.

A handwritten signature in black ink, appearing to read 'L Rossouw', written in a cursive style.

27 / 08 / 2019

Tables and Figures

Table 1. Field rating categories as prescribed by SAHRA.

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction



Figure 1. Aerial view of the study areas in and near Kakamas.

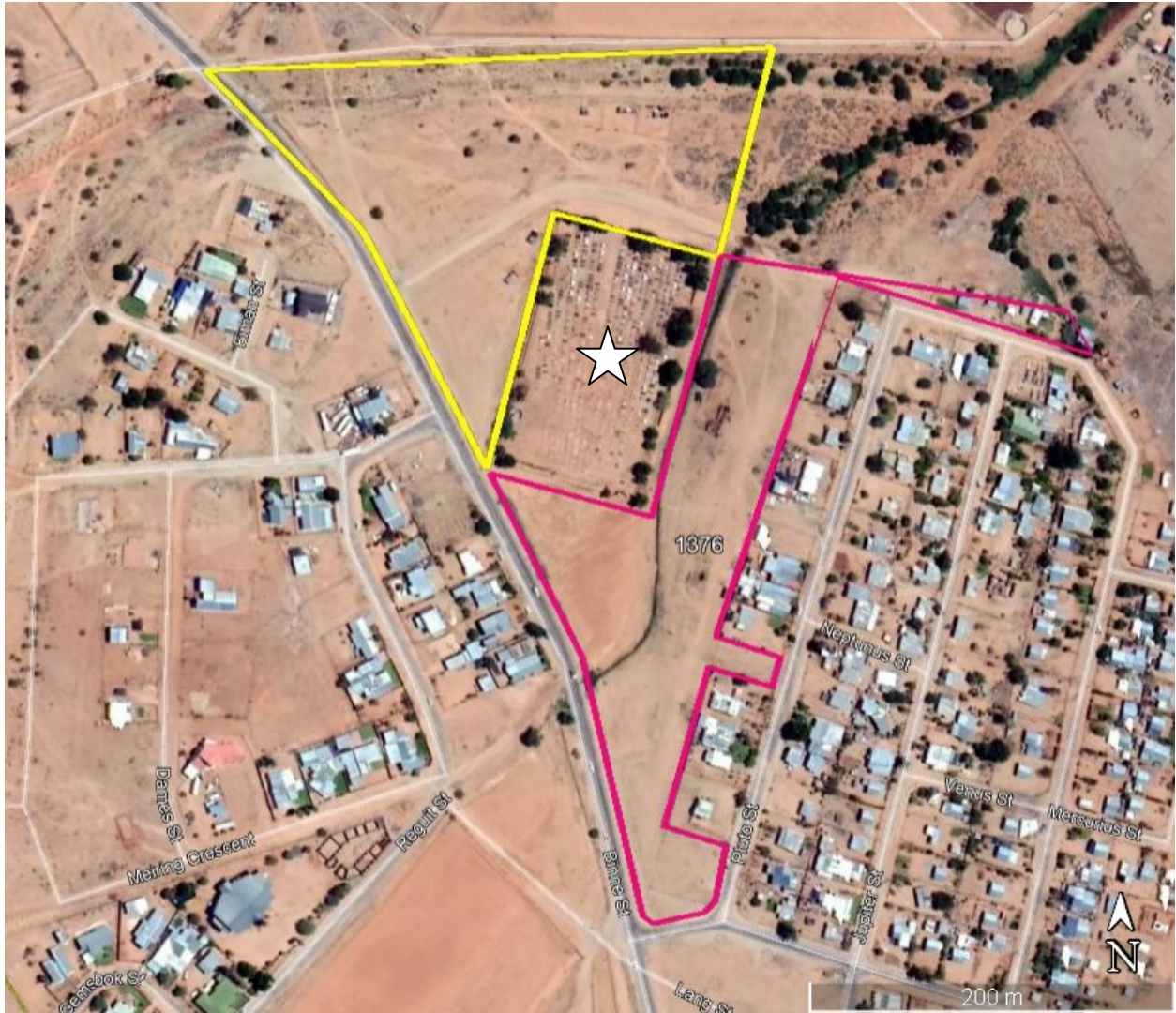


Figure 2. Aerial view of proposed expansion of an existing cemetery (white star) onto Erf 431, (yellow polygon) and the alternative site located on the adjacent Erf 1376 (pink polygon).



Figure 3. General view of study area on Erf 431, looking east (above) and south (below).



Figure 4. Aerial view of proposed new cemetery site located on Erf 1654, and situated next to a landfill site (white star).



Figure 5. General view of study area on Erf 1654, looking north (above) and south (below).

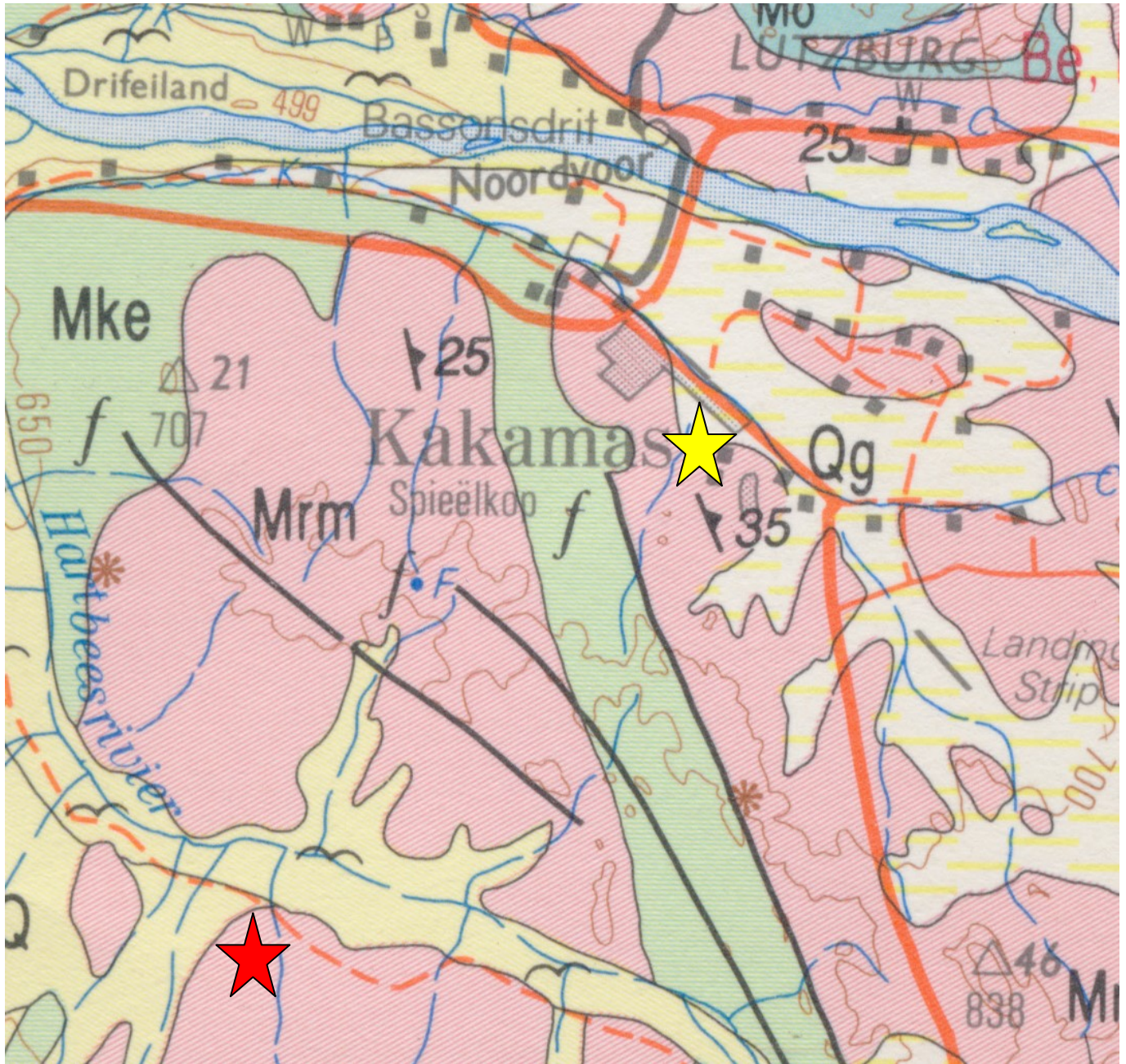


Figure 6. According to the 1 : 250 000 scale geological map of the area (2820 Upington, Council for Geoscience, Pretoria) the proposed development footprints (yellow and red stars) are underlain by well-developed, superficial deposits located on intrusive Makolian rocks of the Kakamas Terrane (pink weathering Riemvasmaak gneiss, *Mrm*)