

**Phase 1 Heritage Impact Assessment for the proposed Tempe
Agrimark and Petrol Station development, Bloemfontein, Free State
Province - Confirmation of potential grave structure and Chance
Finds Protocol for Developer**

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21 / 02 / 2020

Introduction

The application relates to a proposed commercial development covering a 5.5 ha area situated on low-relief terrain near Tempe, about 1 km east-southeast of the Abrahamskraal Road turnoff on the R64, bound for Dealesville and about 17 km north-west of the Bloemfontein CBD (**Fig. 1 & 2**).

Site Coordinates: 29° 4'16.00"S 26° 8'34.34"E

Map Reference:

1:50 000 scale topographic 2926 AA Bloemfontein

1:250 000 scale geological 2926 Bloemfontein

Potential Grave Site Confirmation

One isolated feature, which resembles a rubble dump, but what could also be the remnants of an informal grave, has been avoided pending further investigation and confirmation by a professional archaeologist (**Fig. 3**).

Follow-up investigation by the author indicated that the feature does not bear the same characteristics as those of previously identified, unmarked historical grave sites found around Bloemfontein, namely a distinctive mound with occasional head markers and a characteristic **dolerite cobble** dome (e.g. **Fig. 4**). The feature appears to consist of discarded modern building debris (concrete rubble) that has been partially raised by an underground termite mound (**Fig. 5 -7**).

It is the opinion of the author that this feature is not a grave.

Chance Finds Protocol for Developer

Palaeontology

Given the depth of the Quaternary overburden and relatively low topography terrain, impact on palaeontological *remains within sedimentary bedrock* is generally considered low and the development can proceed provided that the following recommendations are followed:

- Any excavations required for laying of foundations or installation of underground fuel tanks, that *exceeds 1 m into bedrock*, will impact *in situ* sedimentary strata which could be palaeontologically sensitive. In this case the Dr Ragna Redelsdorf at SAHRA must be alerted accordingly since freshly exposed sedimentary rock will require contracting **a professional palaeontologist for appropriate monitoring for fossil remains by** during the construction phase.
- If any newly discovered palaeontological resources prove to be significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

If, in the event that localized fossil material is discovered exposed or eroding out of *intact superficial overburden* during the construction phase, it will in all probability resemble modern- looking, but more or less lithified animal bones and teeth and it will most likely be those belonging to bovids (Bovidae: the biological family of ruminant mammals that includes wildebeest, buffalo, antelopes, etc.) (Fig. 8 - 10).

- In the unlikely event of fossil discovery within previously undisturbed Quaternary overburden, a professional palaeontologist must be called in immediately to confirm and record the finds.
- If any newly discovered palaeontological resources prove to be significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA; The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.
- In the meantime, *ex situ* remains must be wrapped in paper towels or heavy duty tin foil and stored in a safe place. The material should not be washed or cleaned in any way. *In situ* material must be kept in place and protected from further damage by covering it with light but rigid object like a box, bucket or metal sheet until further confirmation by the palaeontologist.

Archaeology

- If any evidence of archaeological sites or remains, e.g. stone artefacts (**Fig. 11 & 12**), ostrich eggshell fragments, charcoal and ash heaps, or remnants of stone-made structures (**Fig. 13**) are found during the proposed development, SAHRA APM Unit (Phillip Hine 021 462 5402) must be alerted.
- In the meantime, *potential archaeological structures such as stone-build enclosures, buildings or graves* must be avoided by a no-go buffer zone until further confirmation by the archaeologist. Smaller *in situ* material must be kept in place and protected from further damage by covering it with light but rigid object like a box, bucket or metal sheet.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist must be contracted as soon as possible to inspect the findings.
- If the newly discovered heritage resources prove to be of archaeological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- The decision regarding the EA Application must be communicated to SAHRA and uploaded to the SAHRIS Case application.

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.





Figure 1. Aerial view of the development footprint.

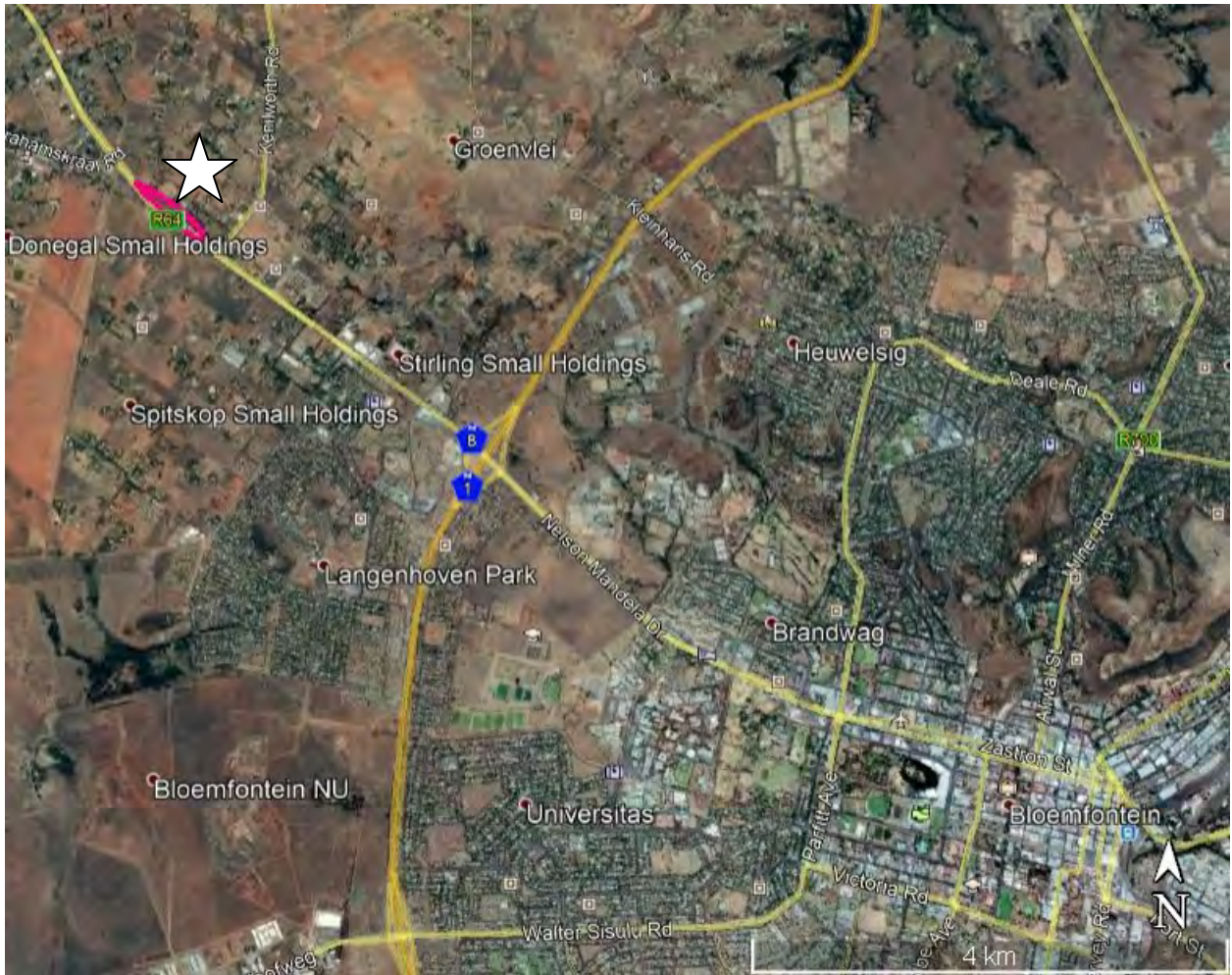


Figure 2. Position of the site (white polygon) in relation to Bloemfontein CBD.



Figure 3. Potential grave or evidence of dumping of refuse and building rubble?



Figure 4. Example of typical unmarked grave recorded around Bloemfontein - distinctive mound with occasional head markers and a characteristic **dolerite cobble** dome.



Figure 5. The feature appears to consist of discarded modern building debris (concrete rubble) that has been partially raised by an underground termite mound



Figure 6. Close-up view of concrete rubble.



Figure 7. Evidence of an underground termite mound



Figure 8. Example of intact bovid skeletal remains exposed within Quaternary overbank deposits (alluvium) from the Vaal River.



Figure 9. Side view (buccal view) of bovid lower dentition removed from jaw bone.



Figure 10. Example of post-cranial bovid skeletal elements including from left to right:
femur, humerus, radius, tibia, scapula and vertebrae (x 3).



Figure 11. Example of general appearance of Stone Age artifacts found rarely intact as open sites and largely derived as isolated scatter on the landscape



Figure 12. Example of rare stone tool knapping site occasionally found near dolerite intrusions in the region.



Figure 13. Example of historical stone-build enclosure frequently found in the region.