

Phase 1 Heritage Impact Assessment of the Remaining
Extent of Portion 2 (Cypherfontein) and Portion 15 (On
Avon – a Portion of Portion 2) of the farm
Maraetchesfontein 54, near Schweizer Reneke,
Northwest Province.

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Summary

A phase 1 Heritage Impact Assessment was carried out for new mining development on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, near Schweizer Reneke, Northwest Province. The study area is underlain by Precambrian, Ventersdorp Supergroup lavas (basalts and andesites) of the Allanridge Formation and has been largely degraded by previous farming and mining activities. A foot survey of the terrain revealed no evidence for the accumulation and preservation of intact fossil material within the superficial Quaternary sediments. The pedestrian survey revealed no indication of *in situ* Stone Age archaeological material. Three Early Stone Age handaxes were recorded as isolated finds on the landscape. There are also no indications of prehistoric structures or graves within the boundaries of the impact area. A historically significance building older than 60 years and two engraving localities were recorded near the western boundary of the study area. Due to the degraded condition of the terrain as a result of previous farming and mining activities, impact on potential *in situ* archaeological remains or historically significant structures within the study area is considered unlikely. The spoil heaps and previously excavated areas are attributed to recent mining activities and are not considered to be historically significant. The farmstead and two rock engraving sites are assigned a field rating of Local Significance (conservation; mitigation not advised). It is advised that the engraving sites are fenced off and protected by a 10 meter wide no-go buffer zone. The remaining part of the proposed development footprint is assigned a field rating of Generally Protected C (low significance).

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Introduction

A phase 1 Heritage Impact Assessment was carried out for new mining development on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, near Schweizer Reneke, Northwest Province (**Fig. 1**). The assessment is required as a prerequisite for new development in terms of the National Environmental Management Act and is also called for in terms of the National Heritage Resources Act (NHRA) 25 of 1999. The region's unique and non-renewable archaeological heritage sites are 'Generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. As many such heritage sites are threatened daily by development, both the environmental and heritage legislation require impact assessment reports that identify all heritage resources in the area to be developed, and that make recommendations for protection or mitigation of the impact of such sites.

The NHRA identifies what is defined as a heritage resource, the criteria for establishing its significance and lists specific activities for which a heritage specialist study may be required. In this regard, categories relevant to the proposed development are listed in Section 34 (1), Section 35 (4), Section 36 (3) and Section 38 (1) of the NHR Act and are as follows:

34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- *b)* destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

- The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- The construction of a bridge or similar structure exceeding 50m in length;
- Any development or other activity which will change the character of the site
 - a) exceeding 5000 m² in extent; or
 - b) involving three or more existing erven or subdivisions thereof; or
 - c) involving three or more subdivisions thereof which have been consolidated within the past five years;
- The rezoning of a site exceeding 10 000 m²; or
- Any other category of development provided for in regulations by the South African Heritage Resources Agency (SAHRA).

Terms of Reference

The task involved the following:

- Identify and map possible heritage sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential heritage resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

Methodology

The heritage significance of the affected area was evaluated on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Maps and aerial photographs (incl. Google Earth) were consulted and integrated with data acquired during the on-site inspection.

Field Rating

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

Locality Data

Maps: 1:50 000 scale topographical map: 2725 AB Schweizer Reneke

1:250 000 scale geological map 2724 Christiana

The affected area is located on the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 (On Avon – a Portion of Portion 2) of the farm Maraetchesfontein 54, about 8 km north-northeast of Schweizer Reneke (**Fig. 1**).

Site coordinates of the proposed impact area as provided by the applicant and present farm owner (**Fig. 2**):

A) 27° 7'39.99"S 25°22'50.16"E

B) 27° 7'32.91"S 25°23'48.50"E

C) 27° 8'24.21"S 25°23'30.43"E

D) 27° 7'53.12"S 25°22'50.10"E

Background

According to the 1:250 000 scale geological map of the region (2724 Christiana), the study area is underlain by Precambrian, Ventersdorp Supergroup lavas (basalts and andesites of the Allanridge Formation, *Ra*), that are capped by geologically recent (Quaternary) aeolian sand, alluvium and residual soils (**Fig. 3**). The Allanridge Formation is not palaeontologically significant, but glacial striations are recorded in the basaltic andesites. The striations occurred about 300 million years ago when Southern Africa was near the South Pole and large ice sheets or glaciers (Dwyka) covered high-lying areas. As the glaciers moved, the rocks and rubble that became

embedded in their undersurface scoured out scratch marks (striations) on the underlying andesite rock pavements. Sections of these andesite glacial pavements, are exposed at numerous localities along the lower Vaal Basin including the Christiana area. The nearby Vaal River dates back to the late Cretaceous and is one of the principal fluvial conduits in southern Africa (De Wit 1993; Marshall 1996; Partridge & Maud 2000). The alluvial formations of the Vaal River basin are best developed along the lower 300 km of the river. These alluvial formations are well known for their unique record of the Pleistocene. Numerous Early Stone Age hand axes as well as the remains of Pleistocene mammalian fossils have been recovered in the region, from gravel deposits 20 m to 50 m above the current riverbed. Early to Middle Stone Age artifacts are derived from the Vaal gravels and include an abundance of Acheulian (Early Stone Age) hand axes, cleavers and core-axes, primarily made from quartzite (Sohnge *et al.* 1937; Cooke 1949). In addition, the gravel deposits are largely mantled by undifferentiated deposits of unconsolidated to semi-consolidated sediments, including calcrete, aeolianite, clay and Kalahari/Hutton Sands, of which the lower levels have shown evidence of high densities of Fauresmith blades, which is regarded as an important transitional stone tool industry at the beginning of the Middle Stone Age. Later Stone Age artifacts preserved in open-site scatters have been recorded on the modern land surfaces flanking the river and its tributaries.

No records exist for other archaeological or palaeontological features in the vicinity of Mareathesfontein, but the alluvial deposits flanking the adjacent Harts River are known to have produced Early and Middle Stone age artifacts. The overbank sediments and terraces of the Harts River may also be potentially fossiliferous, as the palaeontological footprint in the region is mainly associated with Late Neogene alluvial sediments and pedocretes. Surface deposits along water courses and erosional gullies in the central interior occasionally yield mammal vertebrate fossils, molluscs and other remains. .

The confluence of the Orange and Vaal rivers became an important settlement area for the Khoikhoi in their search for new pastures and it is thought that the settlement split into three groups after a major dispute. Koranna and Bushman bands occupied the Harts-Vaal valley by the beginning of the 19th century and competed for territory with the Tswana/Thlaping immigrants from the north. Another Khoikhoi group was the Griqua, who had moved into the region surrounding the confluence of the Orange and Vaal rivers by the end of the 18th century. In 1867 the discovery of diamonds near the Vaal/Gariep confluence brought about enormous changes in the social and

economic make-up of the region. Diamond diggers first located the diamondiferous alluvial gravels of the Vaal River in the vicinity of Christiana and Bloemhof in the mid 1880's and by 1912, the rich diggings on Mooifontein and London, south of Schweizer Reneke, had been discovered, as had the equally rich deposits to the southwest of Wolmaransstad. The bulk of the production from the field took place in the 1920's, although digging activities on a smaller scale have been more or less continuous since then.

Field Assessment

The study area (**Fig. 2**) has been largely degraded by previous farming and mining activities (**Fig. 4 & 5**). A foot survey of the terrain revealed no evidence for the accumulation and preservation of intact fossil material within the superficial Quaternary sediments. The pedestrian survey revealed no indication of *in situ* Stone Age archaeological material. Three unifacially (x2) and bifacially (x1) trimmed Early Stone Age handaxes were recorded as isolated finds on the landscape (**Fig. 6**). There are also no aboveground indications of prehistoric structures or graves within the boundaries of the demarcated impact area. A historically significance building older than 60 years (GPS: S27° 8'20.19" E25°23'30.05") and two engraving localities were recorded near the western boundary of the study area (**Figs. 7 – 9**). Site 1 (GPS: S27°07'51.1" E25°22'53.8") is a rocky outcrop roughly 130 meters east of the Harts River (**Fig. 10**). At least ten individual boulders depict rock art. Rock engravings are made by pecking, scraping or incising into the rock surface. All imagery here was made by pecking. An upright stone at this site was used as a rubbing post by large mammals (particularly rhino) to get rid of skin parasites for many millennia. Such rubbing posts are common indicators of San rock art in the vicinity. Imagery at the site includes a black rhino, human figure, giraffe, zebra, hartebeest, possible eland and some indeterminate, seemingly unfinished images. Site 2 (GPS: S27°07'45.1" E25°22'51.0") is a single engraved boulder close to the eastern bank of the Harts River, about 40 meters from the water's edge (**Fig. 10**). The imagery is depicted on the side of the boulder, not on the top which is the common practice. At least two quadruped animals can be distinguished, but the intended species are unclear. Around these two images are groupings of numerous peck marks of varying density. Judging by the straight lines of the soil stains at the top surface of this boulder, it is likely that it was turned onto its side during mining activities in the more recent past. This

boulder is situated only about 25 meters from old diggings and remnants of historically recent mining activities.

Impact Statement and Recommendation

The affected area is underlain by intrusive volcanic rocks that are considered to be of no paleontological significance. It is highly unlikely that fossil remains will be encountered during excavation activities within the study area. There are no major palaeontological grounds to suspend excavation activities within the proposed development footprint. Due to the degraded condition of the terrain as a result of previous farming and mining activities, impact on potential *in situ* archaeological remains or historically significant structures within the study area is considered unlikely. The old diggings and spoil heaps are attributed to recent mining activities (dating back to within the last 20 years according to the present farm owner) and are not considered to be historically significant (**Fig. 11**). The farmstead and two rock engraving sites are assigned a field rating of Local Significance (conservation; mitigation not advised) (see **Table 1**). It is advised that the engraving sites are fenced off and protected by a 10 meter wide no-go buffer zone. The remaining part of the proposed development footprint is assigned a field rating of Generally Protected C (low significance).

References

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AUTHOR DETAILS

Dr. Lloyd Rossouw specializes in the southern African Quaternary and has over twenty years of extensive fieldwork experience. He graduated with Archaeology and Cultural Anthropology for his BA degree and went on to receive training in southern African archaeology at Honors level at the University of Stellenbosch's Archaeology Department. He received specialized training in faunal osteology and Quaternary palaeontology for his MSc-degree at the Bernard Price Institute of Palaeontology (Wits) and obtained his PhD-degree at the University of the Free State, specializing in plant microfossil research. He is currently Head of the Archaeology Department at the National Museum in Bloemfontein and a member of the Association for Southern African Professional Archaeologists (ASAPA) and the Palaeontological Society of Southern Africa (PSSA).

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.



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Tables & 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

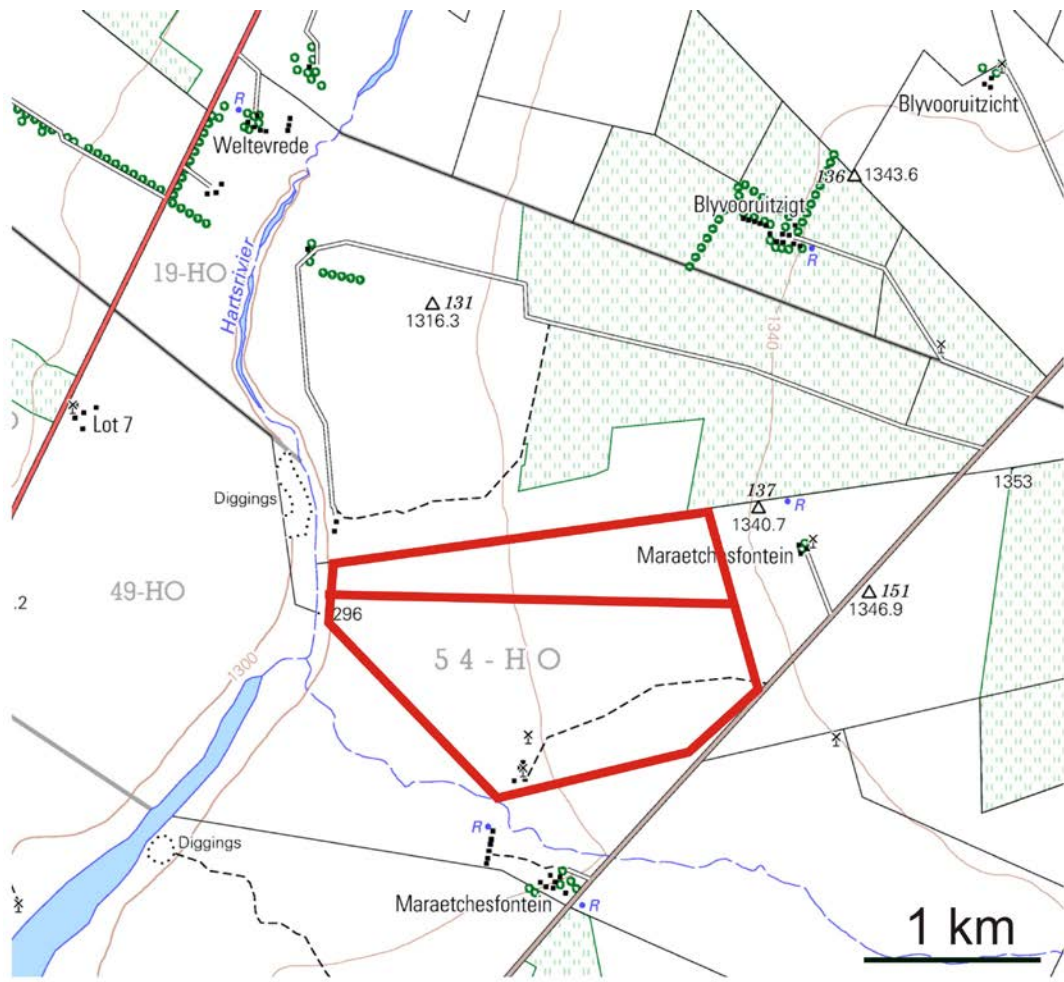


Figure 1. Map of the Remaining Extent of Portion 2 (Cypherfontein) and Portion 15 of the farm Maraetchfontein 54 marked on a portion of 1:50 000 scale topographic 2725 AB Schweizer Reneke (top) and the site's location relation to the position of Schweizer Reneke (below left).

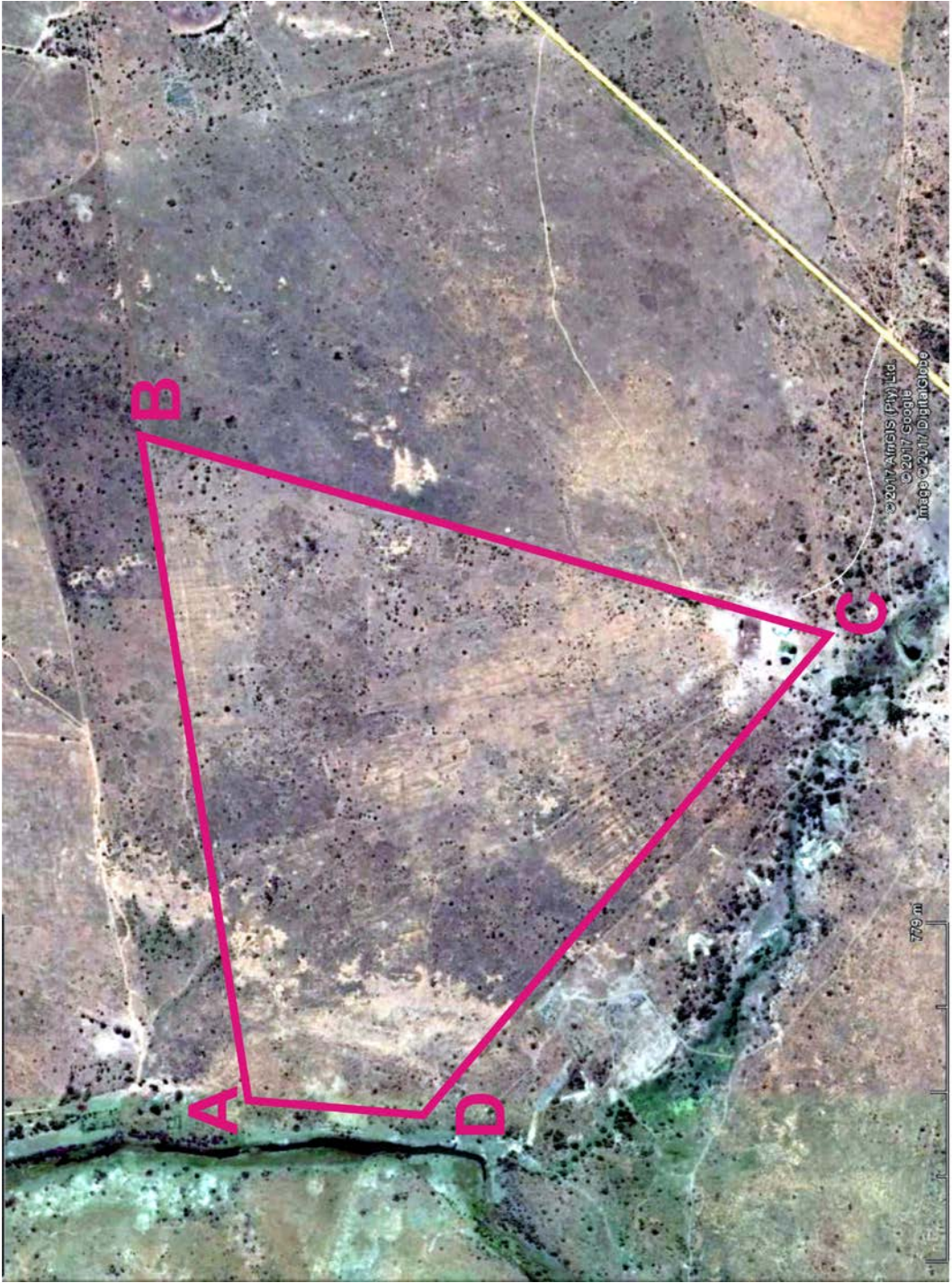


Figure 2. Aerial view of the survey area as specified by the applicant and current owner of the property.



Figure 3. According to the 1:250 000 scale geological map 2724 Christiana, the study area is underlain by Precambrian, Ventersdorp Supergroup lavas of the Allanridge Formation, (*Ra*), that are capped by geologically recent (Quaternary) aeolian sand, alluvium and residual soils.



Figure 4 Rehabilitated mining area, looking north



Figure 5. Old mining spoil heaps and general view of a disused pasture land (bottom).



Figure 6. Bifacially (top) and unifacially (below) trimmed handaxe surface finds.



Figure 7. Historical farmstead, looking southwest.



Figure 8. Rock engravings at Site 1.



Figure 9. Rock engraving at Site 2.



Figure 10. Aerial view of the rock engraving localities.

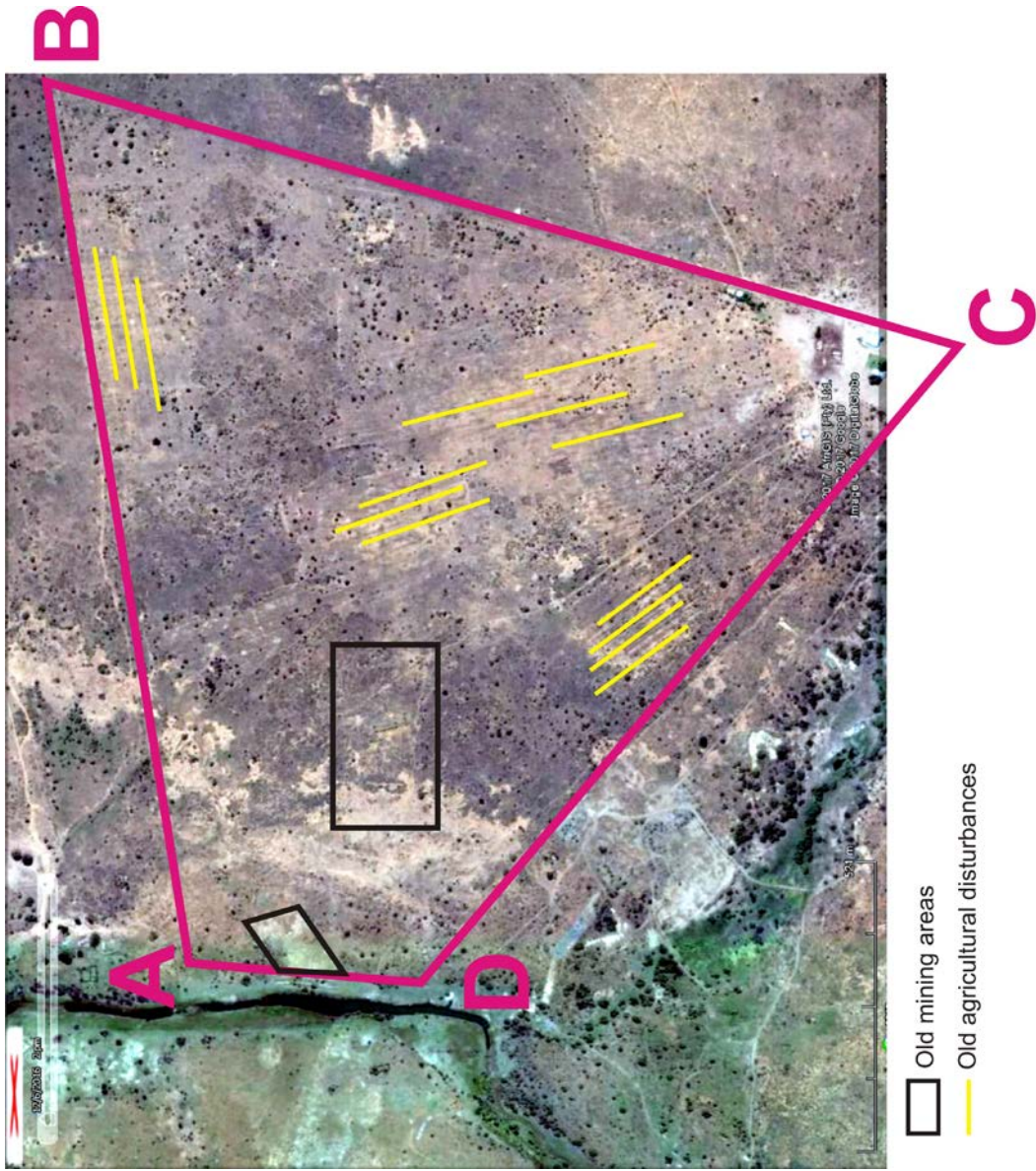


Figure 11. Aerial view of old diggings, spoil heaps and remnants of previous mining activities and agricultural disturbances on the landscape.