

# **Phase 1 Heritage Impact Assessment with regards to a 24G application for an existing toll blending plant located in Anderbolt, Boksburg, Gauteng Province.**

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## **Summary**

The site is situated on a relatively small, flat and highly degraded/disturbed area. The superficial overburden covering the study area is extensively degraded and is not considered to be palaeontologically significant with regard to Quaternary fossil remains. Sedimentary rocks underlying the study consists of coal-bearing sandstones and shales, but chances of negative impact on fossils as a result of operational activities at this stage are considered very low to non-existent. However, any future excavations within the development footprint larger than 1 m<sup>2</sup> that exceeds depths of >1 m into **unweathered/fresh** Vryheid Formation sediments, will need further monitoring by a professional palaeontologist. Given the extensive industrial development of the Boksburg area since the beginning of the 20<sup>th</sup> century, potential *in situ* Stone Age archaeological material, prehistoric structures or historically significant building structures that may have once been preserved in the area have most likely been destroyed even before the toll blending plant was established. The terrain in its current state is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

## **Introduction**

The report is an assessment of potential heritage impact with regard to a 24G application for an existing toll blending plant that blends oils and lubricants (**Fig. 1 & 2**). The site covers a 3ha, industrially developed area, situated on the corner of Main and Paul Smit Road in Anderbolt, Boksburg (**Fig. 3**).

Site coordinates: 26°11'58.59"S 28°16'25.05"E

1:50 000 scale topographical map 2628 AB Benoni

1:250 000 scale geological map 2628 East Rand

## Methodology

The assessment was carried out in accordance with National Heritage Resources Act 25 of 1999 with the aim to assess the potential impact on heritage resources that may result from the proposed development. The heritage significance of the affected area was evaluated on the basis of existing field data, database information and published literature. Maps and aerial photographs (incl. Google Earth) were consulted and integrated with data acquired during the on-site inspection.

## Assumptions and Limitations

The presentation of geological units present within the study area is derived from the and the 1:250 000 scale geological map of the region, which may vary in their accuracy. It is also assumed, for the sake of prudence, that fossil remains are always uniformly distributed in fossil-bearing rock units, although in reality their distribution may vary significantly.

## Background

According to the 1:250 000 scale geological map 2628 East Rand, the proposed development footprint is located within the outcrop area of the Early to Middle Permian, Vryheid Formation of the Ecca Group (Karoo Supergroup) (**Fig. 4**). The deltaic sandstones, shales coal beds and minor conglomerates of the Vryheid Formation is well-known for the occurrence of a rich variety of plant fossils (Glossopteris Flora), including tree trunks, stumps and roots, palynomorphs, rare insects, conchostracans and low diversity trace fossil assemblages.. Vertebrate fossils are absent from the Vryheid Formation (although the aquatic reptile, *Mesosaurus*, as well as fish (*Palaeoniscus capensis*), have been recorded in equivalent-aged strata in the Whitehill Formation in the southern part of the Karoo basin) Invertebrate trace fossils have been described in some detail by Mason and Christie (1986). Quaternary palaeontological sites are occasionally found in Pleistocene alluvial terraces and dongas along rivers and streams like the Vaal River and its tributaries, or within certain karst environments, such as at the Cradle of Humankind, located about 40 km northwest of Boksburg, where local karst conditions resulted in the formation of several late Cenozoic, fossil-rich breccia caves.

The study area lies within the distributional range of the stone-walled settlements of prehistoric farming communities (**Fig. 5**), while the town of Boksburg was founded in 1887 as an administrative centre for the surrounding gold mining areas. It was laid out on the farm

Leeuwpoort and was named after the attorney general, Eduard Bok. The town grew considerably following the expansion of the coal-mining industry. The first railway line on the Witwatersrand was built exclusively to carry coal from Boksburg to the gold mines (officially opened in 1890).

### **Field Assessment**

The site, including the Boksburg area as a whole, is located on degraded, low topography terrain that is capped by heavily disturbed superficial, residual soils. Outcrop visibility is non-existent and no fossil exposures or pristine landscape were observed. The site itself is completely enclosed by modern infrastructure, resulting from the prior construction of the present facility (**Fig. 6**).

### **Impact Statement Recommendation**

#### **Palaeontology**

The site is situated on a relatively small, flat and highly degraded/disturbed area. The superficial overburden covering the study area is extensively degraded and is not considered to be palaeontologically significant with regard to Quaternary fossil remains. Sedimentary rocks underlying the study consists of coal-bearing sandstones and shales, but chances of negative impact on fossils as a result of operational activities at this stage are considered very low to non-existent. However, given the nature and scale of the development (e.g. laying of foundation trenches and associated underground infrastructure), any future excavations within the development footprint larger than 1 m<sup>2</sup> that exceeds depths of >1 m into intact Vryheid Formation sediments, will need further monitoring by a professional palaeontologist. The palaeontologist must apply for a valid collection / removal permit from SAHRA if fossil material is found within unweathered/fresh sedimentary bedrock.

#### **Archaeology**

Given the extensive industrial development of the Boksburg area since the beginning of the 20<sup>th</sup> century, potential *in situ* Stone Age archaeological material, prehistoric structures or historically significant building structures that may have once been preserved in the area have most likely been destroyed even before the toll blending plant was established. The terrain in its current state is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.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.

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

19 / 05 / 2020

## Tables & Figures

**Table 1.** Field rating categories as prescribed by SAHRA.

<b>Field Rating</b>	<b>Grade</b>	<b>Significance</b>	<b>Mitigation</b>
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 views of the study area.

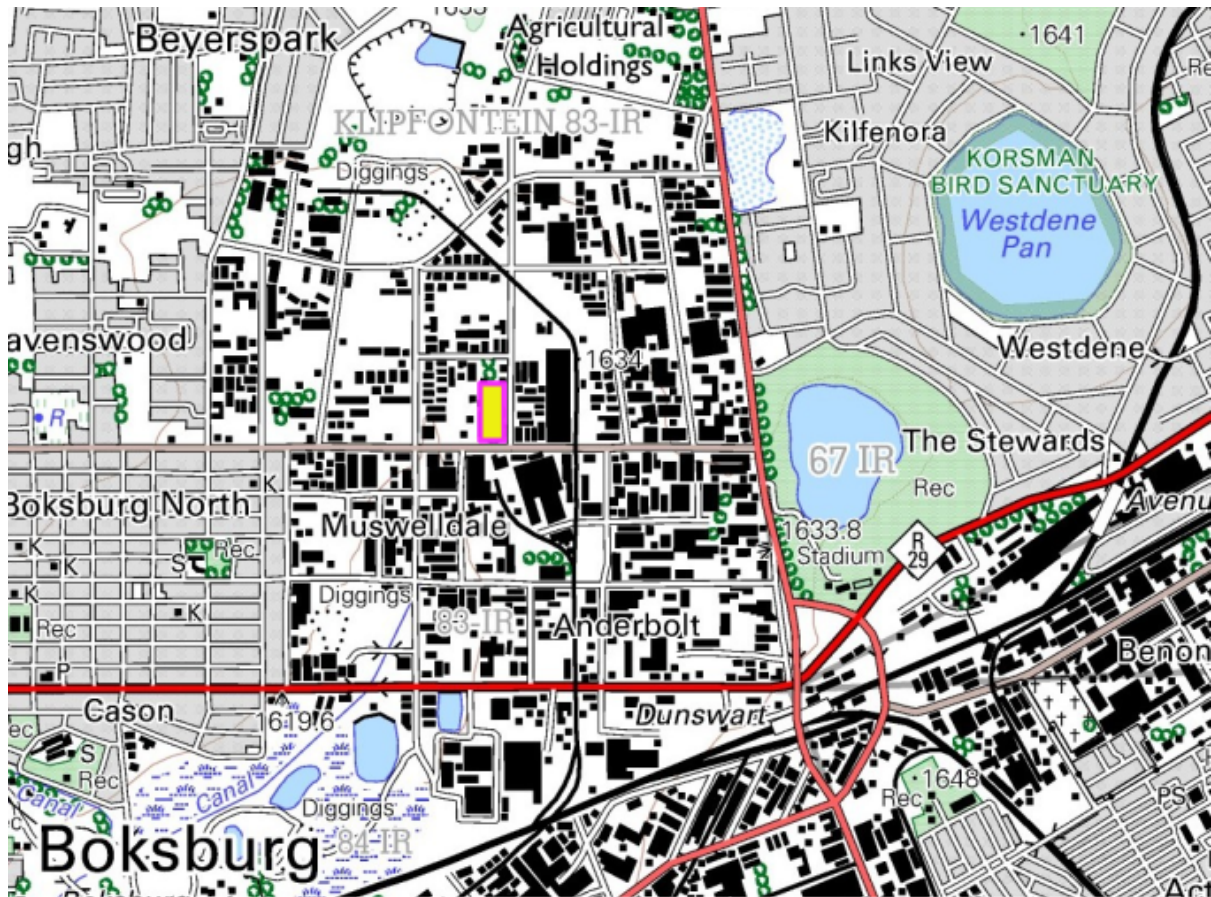


Figure 2. Map of the site (yellow rectangle marked on portion of 1:50 000 scale topographic map 2628 AB Benoni).





Figure 3. General view of the plant.

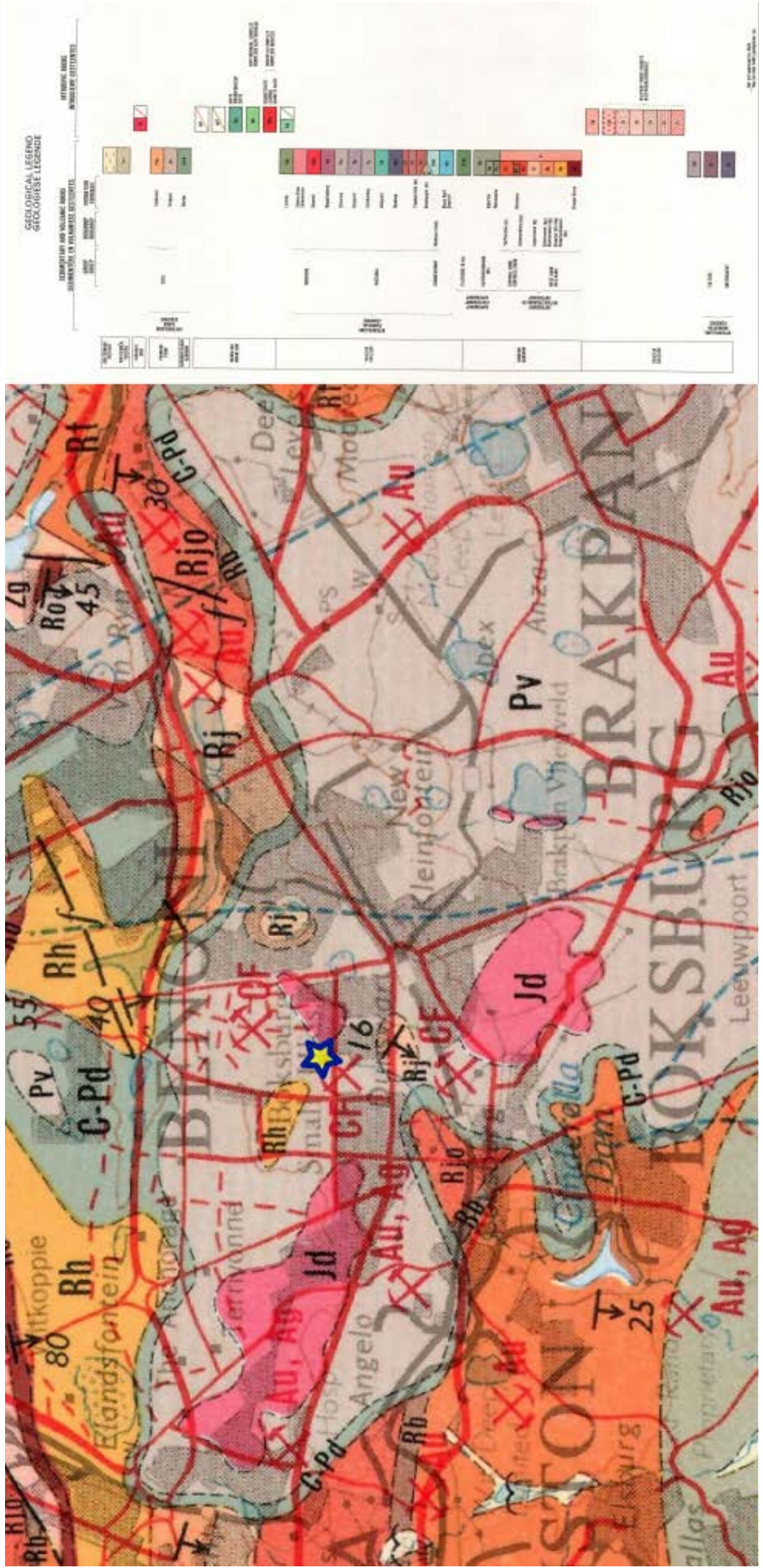


Figure 4. According to the 1:250 000 scale geological map 2628 East Rand, the proposed development footprint is located within the outcrop area of Formation of the Ecca Group (Karoo Supergroup)

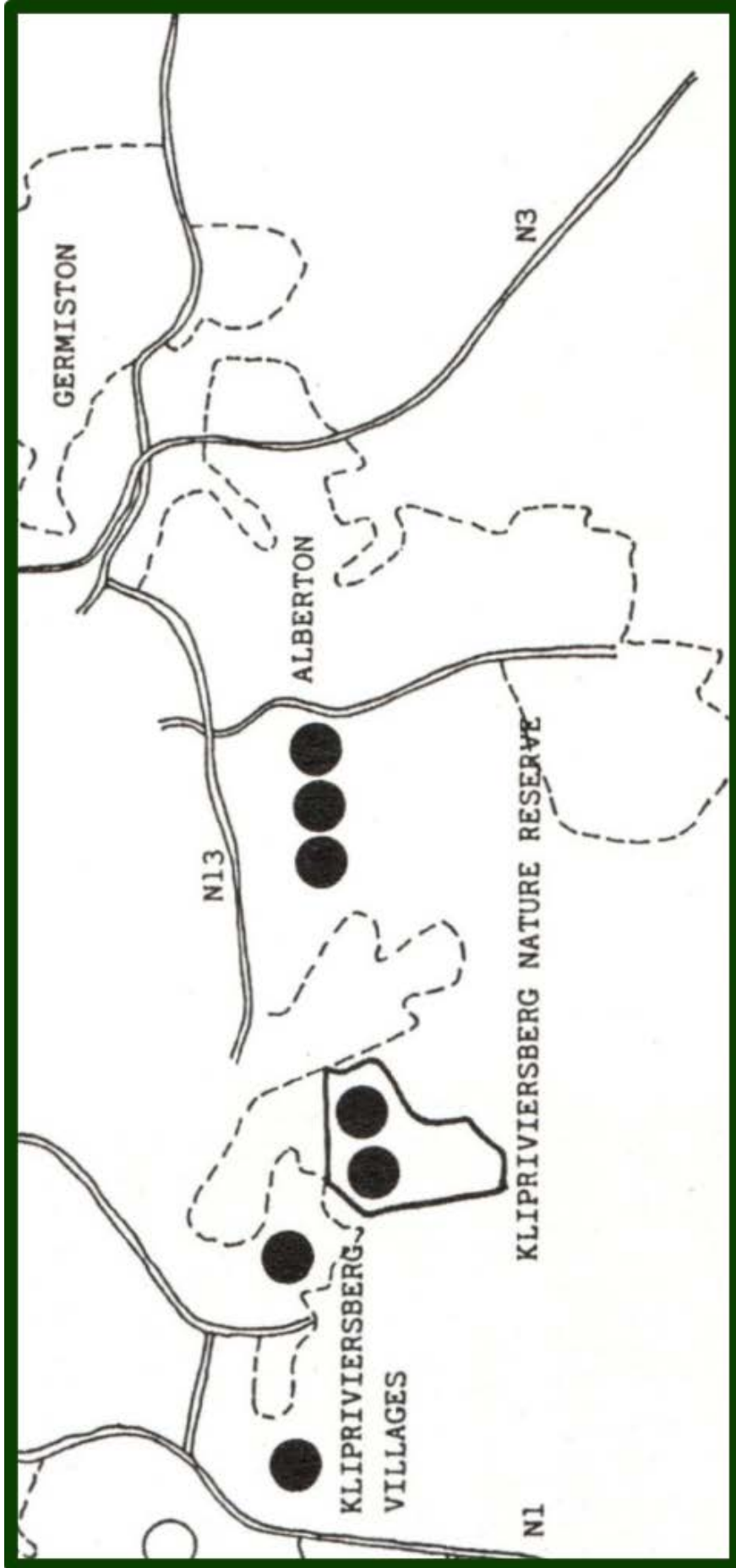


Figure 5 Map of known Iron Age settlements located south of Johannesburg (after Mason 1987).



Figure 6. General view of the study area.