

Phase 1 Heritage Impact Assessment of a proposed new
Eskom 132kV power line between the Rouxville
substation in the Free State Province and the Melkspruit
substation in Aliwal North, Eastern Cape Province.



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by
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Summary

Eskom Distribution Free State Operating Unit intends to construct a 132kV power line between the Rouxville substation and the Melkspruit substation in Aliwal North in order to replace the existing 66kV line that currently runs between these two substations. At the request of NSVT Environmental Consultants, a Phase 1 heritage impact assessment was consequently carried out as a prerequisite for new development in terms of the National Environmental Management Act and the National Heritage Resources Act (NHRA) 25 of 1999. The foot survey indicated that the proposed development will largely impact areas that have been degraded by previous or current farming activities. It revealed no aboveground evidence of intact Stone Age localities or artifacts, prehistoric structures or remains, or rock art within or in the immediate vicinity of the linear footprints. There is also no evidence of graves, graveyards or historically significant structures older than 60 years within or in the immediate vicinity of the linear footprint. Several historical ruins, one small graveyard and two Voortrekker centenary memorials recorded during the survey will not be impacted by the proposed development. Both routes are regarded as of low archaeological significance and are assigned a rating of Generally Protected C (GP.C). As far as the archaeological heritage is concerned, the proposed development may proceed, provided that all construction activities are restricted to within the boundaries of the development footprint.

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Introduction

Eskom Distribution Free State Operating Unit intends to construct a 132kV power line between the Rouxville substation and the Melkspruit substation in Aliwal North in order to replace the existing 66kV line that currently runs between these two substations (**Fig. 1 & 2**). At the request of NSVT Environmental Consultants, a Phase 1 heritage impact assessment was consequently carried out as required as a prerequisite for new development in terms of the National Environmental Management Act and 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 topographic 3026BD Rouxville, 3026DB Bosberg and 3026DA Aliwal North.

Starting at the Rouxville Substation Route 1 (**Fig. 2, A white line; Fig. 3, A**) runs south, parallel and adjacent to the existing power line for 6.8 km (**Fig. 2, A-B; Fig. 3, B-D**) where after it diverts west to follow the N6 national road for about 8.8km (**Fig. 2, B-C; Fig. 4 & 5**). The route then meets up and runs parallel and adjacent to the existing power line for 6 km (**Fig. 2, C-D**) before splitting up into two routes so that Route 2 (**Fig. 2, yellow line**) crosses the N6 national road to the west (**Fig. 2, D; Fig. 6**) while Route 1 maintains its course next to and east of the N6 for 4.8 km (**Fig. 2, D-E; Fig. 7, A**) before crossing the road to follow the eastern side of the road for 3.7 km (**Fig. 2, E-F; Fig. 7 B**). It then turns southwest through farmland and west to follow a secondary tar road for 2.6 km (**Fig. 2, F-H; Fig. 8**) where after it diverts south to cross the Orange River (**Fig. 9, A**) past the Dukathole township (**Fig. 2, I; Fig. 9, B&C**) to follow the existing power line for another 3 km before reaching the Melkspruit Substation (**Fig. 2, J; Fig. 10**). Route 2 runs south and southwest, adjacent to the N6 for about 6.5 km (**Fig. 2, D-F**) before turning due west to transect farmland for 3.5 km before meeting up with Route 1 at the Orange River crossing.

Background

The archaeological footprint in the region is primarily represented by Stone Age localities and rock art sites, early indigenous farming communities as well as historical structures related to early trek-farmers (Goodwin & Van Riet Low 1929; Lye 1967; Sampson 1968, 1972; Maggs 1976). Extensive surveying during the late 1960's revealed that the Gariep Dam flood basin, including the Orange-Caledon interfluvium has a very rich Stone Age archaeological footprint with multiple open and buried sites (Sampson 1968, 1972) (**Fig. 11**). Stone tool open-sites have been recorded at Goedemoed, Weenkop and Wesselsdal near Rouxville and at Middelplaats, Melkspruit, Grassridge Farm in the Aliwal North district (**Fig. 12**). Examples of stone tool "factory" sites are found at Spitzkop near Smithfield, the Smithfield Townlands (the original Smithfield material used by Goodwin and Van Riet Low to describe the Smithfield Stone Tool Industry in 1929 was a surface collection retrieved from the banks of a stream running through the town, locality unknown), Ventershoek near Wepener and Mooifontein near Zastron.

During the early 1820's, the Difaqane resulted in a series of raids and wars carried on by whole communities of displaced and wandering Nguni- and Southern Sotho-speaking groups after the rise of Shaka's Zulu empire, which caused refugee communities to flee over the Drakensberg mountain passes. Locally the Southern Sotho broke up into numerous antagonistic communities which were scattered along the Caledon River Valley, and unrest continued throughout the countryside, including the Rouxville district.

Rock art localities recorded in the region include sites on more than 31 farms in the Rouxville district and on 21 farms in the Aliwal North district, including Beestekraal 64/0. European trek-farmers crossed the Orange River from the Cape as early as 1819 and settled throughout the region during the 1820's and 1830's. One of the earliest farms in the region was established in 1835 at Klipplaatsdrif, about 24 km from Rouxville on the way to Smithfield (**Fig. 13**). Historical landmarks situated within 5 km of Aliwal North include the Anglo Boer War Concentration Camp Memorial Garden and Graveyard.

Field Assessment and Recommendations

Route 1

The foot survey indicated that the proposed development will largely impact areas that have been degraded by previous or current farming activities. It revealed no aboveground evidence of intact Stone Age localities or artifacts, prehistoric structures or remains, or rock art within or in the immediate vicinity of the linear footprint. There is also no evidence of graves, graveyards or historically significant structures older than 60 years within or in the immediate vicinity of the linear footprint. Several historical ruins, one small graveyard and two Voortrekker centenary memorials recorded during the survey will not be impacted by the proposed development (**Figs. 14 – 16; Table 2**). The route in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C). As far as the archaeological heritage is concerned, the proposed development may proceed, provided that all construction activities are restricted to within the boundaries of the development footprint.

Route 2

The foot survey indicated that the proposed development will largely impact areas that have been degraded by previous or current farming activities. It revealed no aboveground evidence of intact Stone Age localities or artifacts, prehistoric structures or remains, or rock art within or in the immediate vicinity of the linear footprint. There is also no evidence of graves, graveyards or historically significant structures older than 60 years within or in the immediate vicinity of the linear footprint. The route in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C). As far as the archaeological heritage is concerned, the proposed development may proceed, provided that all construction activities are restricted to within the boundaries of the development footprint.

References

- Lye, W.F. 1967. The Difaqane – the Mfecane in the Southern Sotho area, 1822 – 1824. *Journal of African History* 8 (1): 107-131.
- Goodwin H.J. & Van Riet Lowe, C. 1929. The Stone Age cultures of South Africa. *Annals of the South African Museum* 27: 1 – 289.

Maggs T. M. O'C 1976. *Iron Age Communities of the Southern Highveld*. Occasional Publications of the Natal Museum No. 2. Natal Museum, Pietermaritzburg.

Sampson, C.G. 1968. The Middle Stone Age of the Orange River Scheme Area. National Museum, Bloemfontein. Memoir, no. 4.

Sampson 1972. The Stone Age Industries of the Orange River Scheme and South Africa. National Museum, Bloemfontein. Memoir, no. 6.

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.

06 / 09 / 2017

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

Table 2. Site coordinates of heritage features recorded during survey.

Site	Coordinates
Voortrekker Memorial	30°34'7.81"S 26°47'7.45"E
Voortrekker Memorial	30°36'21.15"S 26°45'46.70"E
Graveyard	30°33'25.12"S 26°47'18.88"E
Historical ruins	30°32'2.93"S 26°47'54.14"E

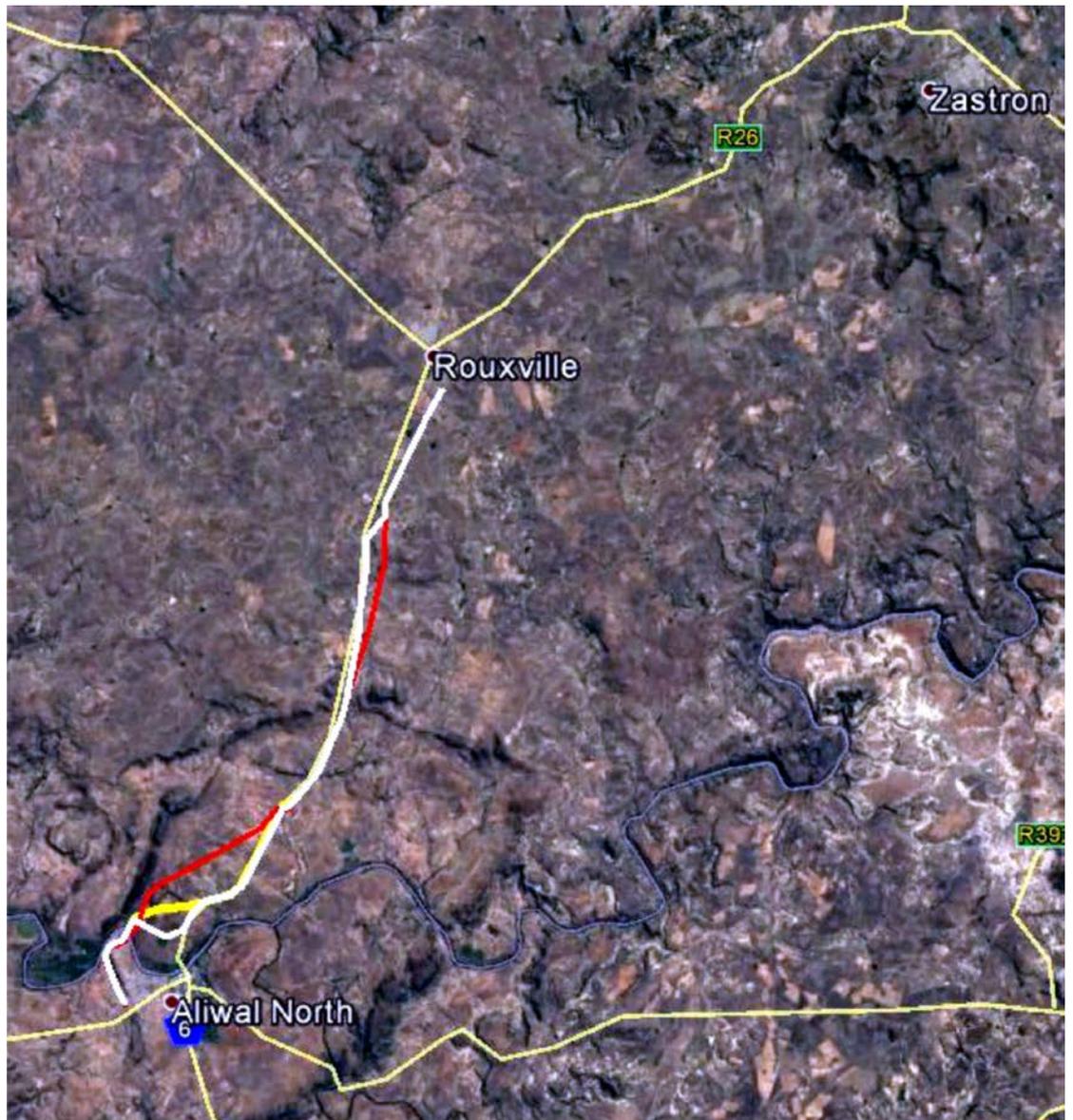


Figure 1. Aerial view of the proposed development footprint covering 1:50 000 topographical maps 3026BD Rouxville, 3026DB Bosberg and 3026DA Aliwal North.

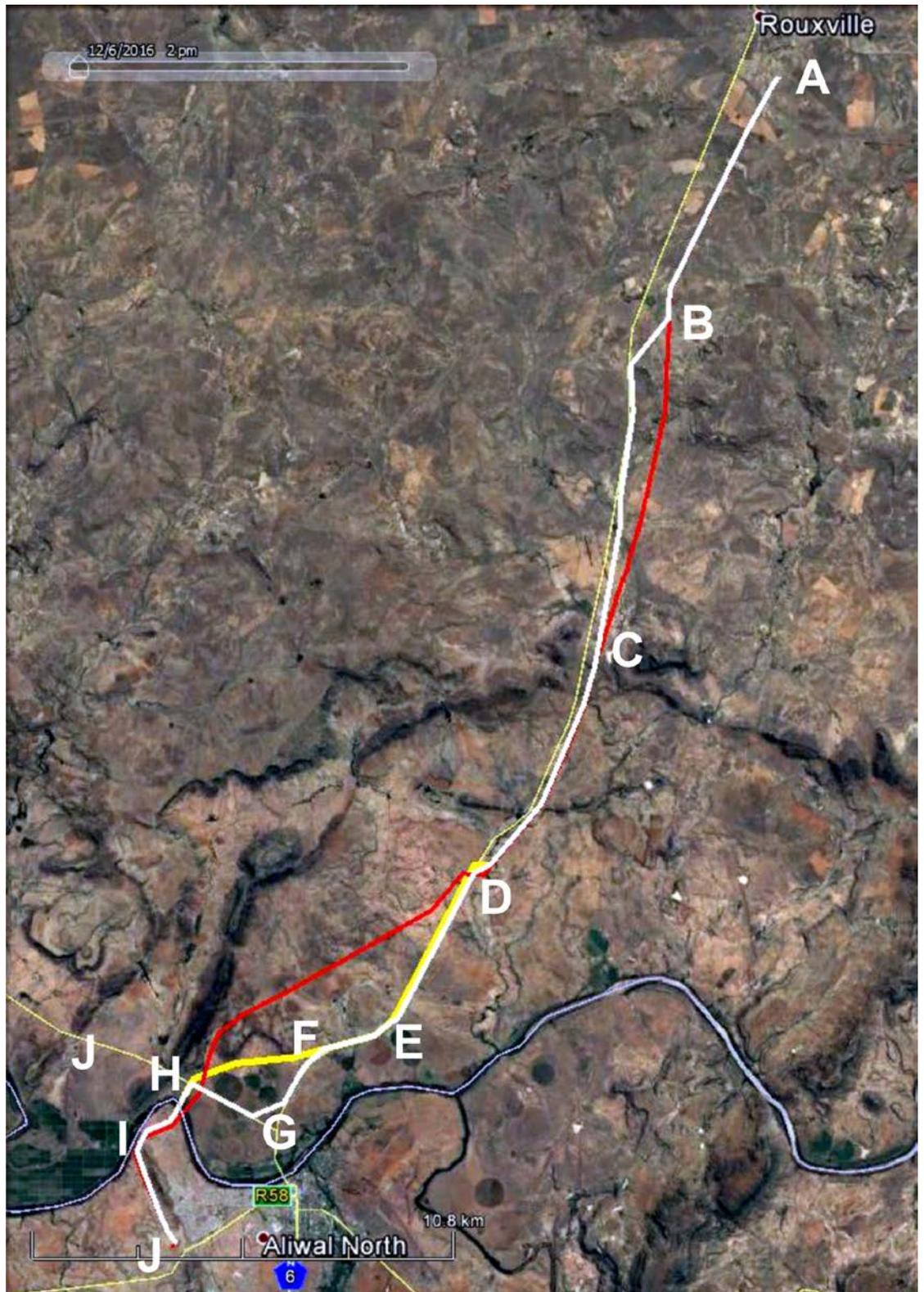


Figure 2. Layout of the proposed development footprint (Route 1 = white line, Route 2 = yellow line & Existing power line = red line).



Figure 3. General view of the Rouxville Substation and footprint between route section A-B.



Figure 4. General view of the footprint at section point B, looking south.



Figure 5. General view of footprint at river crossing between section points



Figure 6. General view of the route crossing the N6 at route section point D, looking south.



Figure 7. General view of erosional gullies between route section points D and E, looking east (A) and the N6 crossing at route section point E, looking southwest (B).



Figure 8. General view of the route along the N6 (top) and secondary tar road (below) between route section points F, G to H.



Figure 9. Route crossing at the Orange River, looking south (top) and general view of the footprint next to the Dukathole township outside Aliwal North (center & bottom).



Figure 10. General view of the footprint near its connection point with the Melkspruit Substation (below).

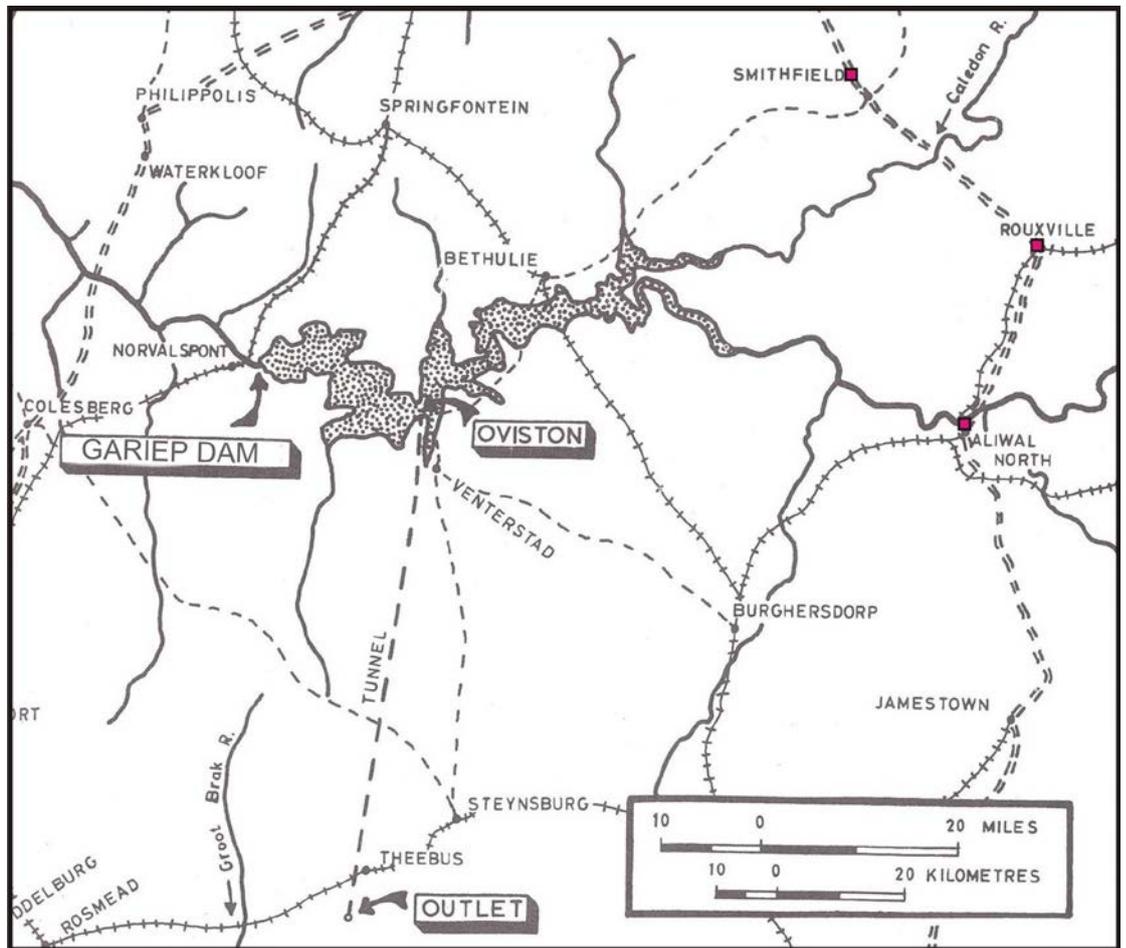


Figure 11. Map of the area surveyed by Sampson during the late 1960's (after Sampson 1968).

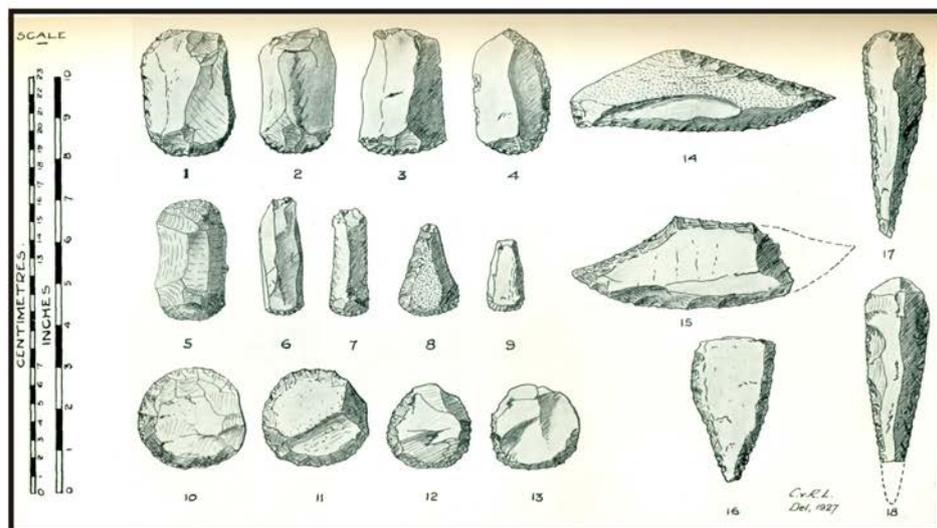
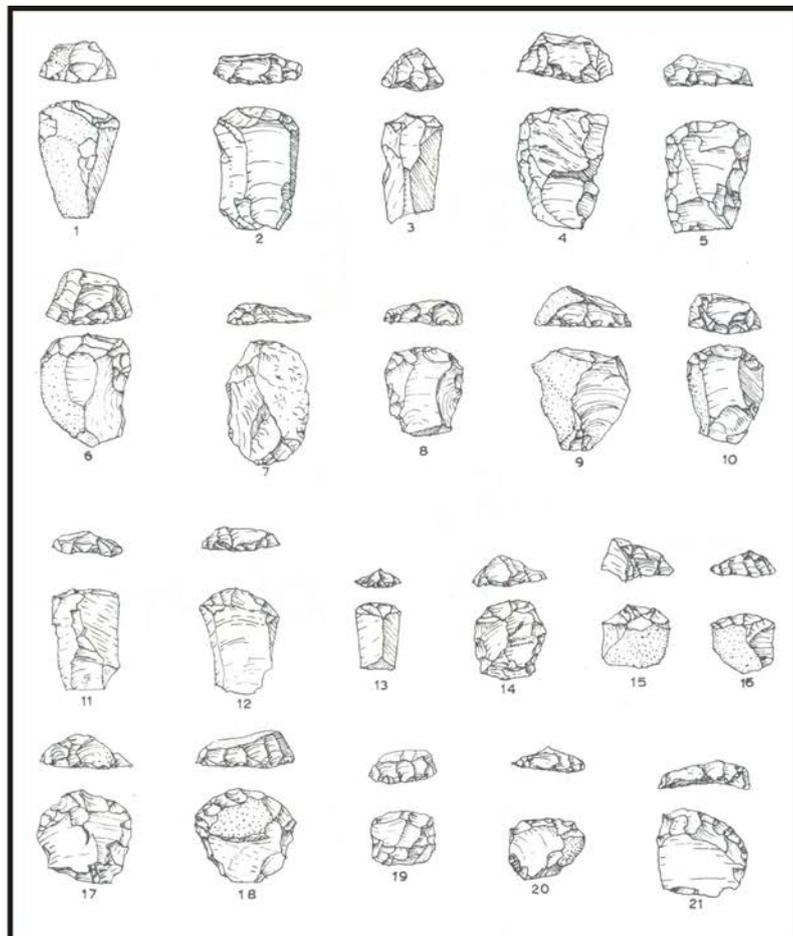


Figure 12. Examples of Smithfield Industry stone tools described from Ventershoek, northeast of Rouxville (above) and the Smithfield Townlands (Smithfield Industrial Complex type site, below).



Figure 13. The “kleihuis” ruins at Klipplaatsdrif built ca the 1830’s, one of the earliest Trekboer dwellings north of the Orange River.



Figure 14. Graveyard, located near route section point C, looking west.



Figure 15. Voortrekker Centenary memorial located near route section point C.



Figure 16. Voortrekker Centenary memorial located near route section point D.