

HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED GAMKA SUBSTATION AT CALITZDORP, CALITZDORP MAGISTERIAL DISTRICT, WESTERN CAPE

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act (No. 25 of 1999) as part of a Basic Assessment)

Prepared for

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EXECUTIVE SUMMARY

ACO Associates cc was requested by SiVest Environmental to assess the potential impacts to heritage resources that might occur through the proposed construction of an electrical substation on the northern outskirts of Calitzdorp. Two alternative locations have been identified, but Site A has effectively been screened out due to anticipated noise impacts. Site B is preferred by the proponent. After a NID submission, HWC requested that the HIA contain palaeontological, archaeological and visual specialist components.

The two sites lie in a valley on the northern edge of Calitzdorp with Site A adjoining the town and Site B some 320 m further north in vacant land. The substrates are covered by gravel and very low vegetation with isolated larger bushes.

The local context is distinctly rural and has value for its intactness and sense of place and resulting value to the tourism industry. Potential palaeontological impacts were found to be very unlikely, but should they might be of medium significance. Archaeological impacts of significance will not occur since artefacts were found to be rare in the study area. Visual impacts through the use of Site A will be less than those for Site B due to the more exposed nature of the latter and reduced ability of its immediate surroundings to absorb the substation.

Overall, palaeontological impacts are likely to be of medium significance, although the potential of such impacts occurring is small. Archaeological impacts will be of very low significance. Operational phase visual impacts will be of medium-low significance for Site A and medium significance for Site B. However, with mitigation these visual impacts could be reduced to low and medium-low respectively.

It is recommended that construction of the proposed substation be allowed to proceed on either site. It is noted that Site A is preferred from a heritage point of view but that noise impacts have effectively screened it out leaving Site B as the developer's favoured alternative. Palaeontological monitoring should be carried out by the ECO and/or a palaeontologist, while visual mitigation measures as suggested by the visual specialist should be adhered to. The only other specific recommendation is to ensure that the small cottage located close to Site B is not disturbed in any way during construction or operation of the substation.

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1. INTRODUCTION

ACO Associates cc was requested by SiVest Environmental to assess the potential impacts to heritage resources that might occur through the proposed construction of an electrical substation in Calitzdorp. Two alternative locations have been identified, one slightly closer to the edge of town than the other (Figures 1 & 2). Due to noise impacts, Site A, located closer to the built-up area and adjacent to the existing Calitzdorp Substation, has effectively been screened out leaving Site B as the preferred alternative for the proponent. This report nevertheless assesses both sites comparatively.



Figure 1: Map showing the location of the study area (red circle) on the northern outskirts of Calitzdorp.

Site A lies on erf 445 which is 1.6218 ha in extent. Site B is on erf 90 which measures 10.0992 ha. The planned development includes the following components:

- An 11 m high substation with a footprint of 5992 m²;
- A lightning conductor of 21 m high;
- A c. 300 m power line; and
- An access road of c. 200 m to the site.

1.1. Terms of reference

ACO Associates cc was asked to compile an integrated heritage impact assessment (HIA) after receipt of comments from Heritage Western Cape (HWC) on the proposed project.

HWC requested that the HIA consist of the following:

- A visual impact study;
- A desktop palaeontological study; and
- An archaeological scoping study.

Prior to the original NID submission, a field inspection was undertaken and this report is thus based on those findings as well as those of the visual and palaeontological studies. Both of the latter studies have been conducted by separate specialists and, while their findings are included within the present HIA, their full reports are appended for ease of reference.

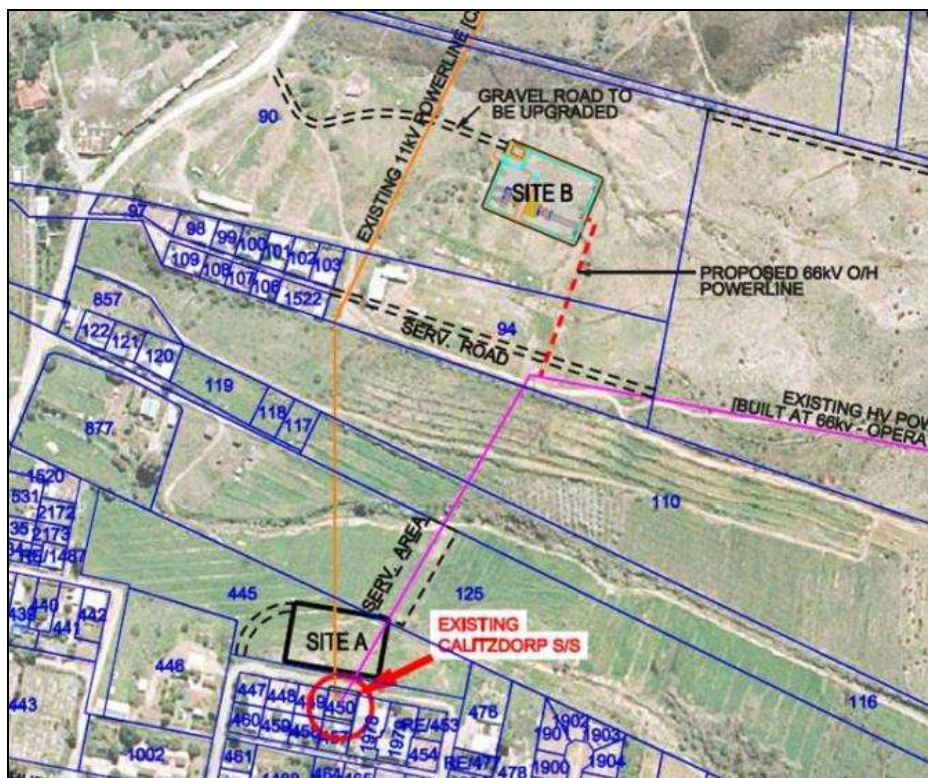


Figure 2: Map showing the location of the two proposed sites. Site A has been ruled out with Site B being assessed in the present report.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources including palaeontological, prehistoric and historical material (including ruins) more than 100 years old (Section 35), human remains older than 60 years and located outside of a formal cemetery administered by a local authority (Section 36) and non-ruined structures older than 60 years (Section 34). Landscapes with cultural significance are also protected under the definition of the National Estate (Section 3 (3.2d)). Section 38 (2a) states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted. This report fulfils that requirement.

Since the project is subject to a Basic Assessment, Heritage Western Cape (HWC) is required to provide comment on the proposed project in order to facilitate final decision making by the Department of Environmental Affairs and Development Planning (DEA).

3. METHODS

The site visit was conducted on 31st August 2011 prior to submission of the NID. The landscape and any other heritage features and finds were recorded photographically. Background research included other commercial work done in the area as well as published sources from the general region.

3.1. Limitations

Aside from the fact that the palaeontological specialist did not undertake a field survey, there were no limitations to the study. No palaeontological field survey was required by HWC.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

Site A is on a slope adjoining a road at the very northern edge of Calitzdorp (Figures 3 & 4). An existing substation lies just to the south of this road. The site is covered with very low vegetation and isolated bushes and the surface substrate is almost entirely of loose gravel. The higher lying parts have been disturbed by road construction, while at the northern edge of the site the land becomes flat and some agricultural activities have been carried out.



Figure 3: View across Site A towards the southwest showing its proximity to the town and the existing substation.



Figure 4: View across Site A towards the southeast showing its proximity to the town and the existing substation. The agricultural activities are evident in the foreground.

The Site B area consists of gently rolling terrain on the south side of a small stream some 320 m to the north of Site A (Figure 5). The ground surface is gravelled and vegetated with low plants. A small gravel track currently provides access to the site (Figure 6) and limited disturbance is evident in one or two places (Figure 7).



Figure 5: View towards the northwest across the Site B location with the small stream in the right hand half of the picture. The substation would lie approximately in the hollow in the centre of the picture. Calitzdorp town is out of picture to the left.



Figure 6: View towards the northwest along the small gravel track that currently provides access to Site B.



Figure 7: View towards the southeast showing limited disturbance alongside the gravel track.

5. HERITAGE CONTEXT

The little town of Calitzdorp lies in the Klein Karoo, alongside the well-known scenic route, the R62. The town and general area are quite strongly characterised by historic structures set into a distinctly rural context. Fransen (2004:497) notes that the town had its origin in 1845 when a portion of the farm Bufflesvlei was made available for the establishment of the village. The town is named after the Calitz family who owned the farm at the time. Fransen lists numerous historic structures in the town.

Little archaeological research has been carried out in the area, although one Later Stone Age (LSA) site is known in the foothills of the mountains to the north of Calitzdorp (Kaplan 2005; Halkett 2006). This site indicated the presence of pre-colonial inhabitants at some point within the last 2000 years. It is generally common-place to find scatters of particularly Middle Stone Age (MSA) material in the Klein Karoo (Halkett 2002; Orton 2009), although rock art (Halkett 2002; Orton, personal observation) and good, *in situ* archaeological deposits are also present in places (Deacon 1979; Deacon *et al.* 1978; Halkett 2002; Keller 1973).

6. FINDINGS

Figure 8 shows an aerial photograph of the site and locates the single proximate heritage resource of value recorded during the field survey.

6.1. Palaeontology

The palaeontological component of this HIA was carried out by Graham Avery (2012). It was determined that the bedrock geology would be highly unlikely to contain fossils, but that excavations within the surficial sediments and extending beyond the typical plough zone would have a small possibility of intersecting deposits and/or fossils relating to old wetlands or perhaps fossils related to earlier use of old aardvark holes by hyaena, jackals or porcupines.

6.2. Archaeology

The field survey showed that occasional stone artefacts were present in the study area among the gravels coating the surface of the ground, although all three that were seen came from the more eroded Site B. These were all of quartzite and likely pertain to the MSA (Figures 9 to 11). No *in situ* material or occupation sites were found.

6.3. Built environment

Although not specifically requested by HWC, it is pertinent to note the presence of a small historical structure immediately alongside the access road to Site B. At the time of the field inspection, the house was inhabited. It is likely of early 20th century age but is nevertheless certainly greater than 60 years of age and thus generally protected by the NHRA. It has architectural value in that it is a very typical vernacular farm labourers cottage. Such cottages characterise this rural area (Figures 12 to 14).

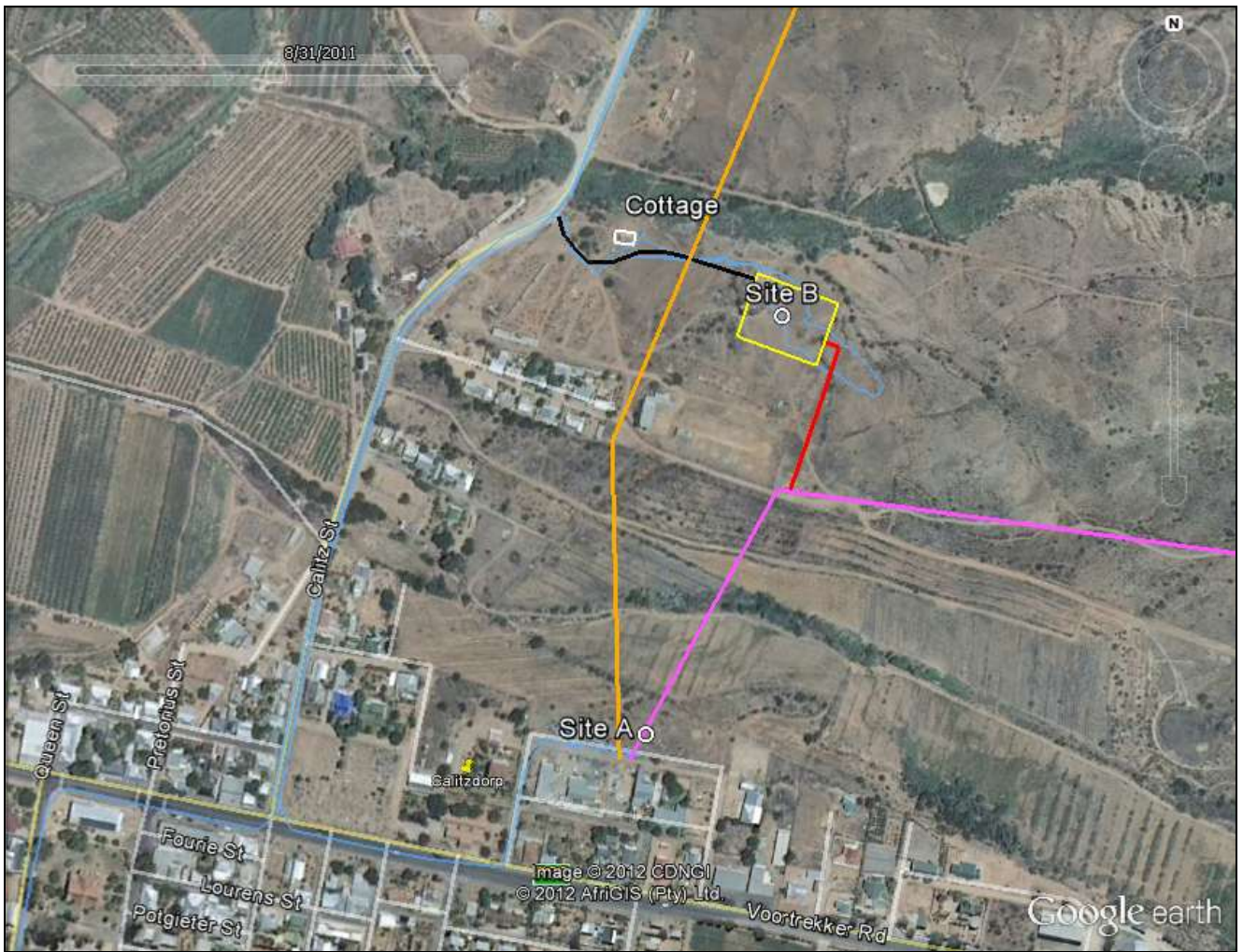


Figure 8: Aerial view of the study area showing the location of the two sites in relation to the built-up part of Calitzdorp, the general landscape character around the sites and the proposed infrastructural layout for Site B. The yellow rectangle represents the substation footprint, the orange and pink lines are existing power lines and the red line the proposed new power line. The black line is the proposed access road to the substation.



Figures 9 to 11: Stone artefacts noted on Site B. That on the right was firmly embedded in the substrate.



Figures 12 & 13: Small labourer's cottage immediately alongside the access road to Site B.



Figures 14: Other labourers' cottages located on the northern outskirts of Calitzdorp.

6.4. Cultural landscape and visual impacts

Again, no specific cultural landscape study was requested, but the landscape around the sites is significant for its intactness (Figure 15). It is distinctly rural and undeveloped and imparts a very pleasant sense of place to the local environment. That the main road through the area is gravel contributes to the rural feel.

The visual specialist study was conducted by Albert van der Stok (2012) who found the local landscape to be of exceptional quality and of value to the town's tourism potential. Site A lies on a northwards-facing slope, while Site B is more level. Both are in a valley to the north of the town and the surrounding ridgelines provide shielding for the proposed development. Three viewsheds were defined with all significant views being from within the proximate viewshed (the smallest of the three). Longer views in the intermediate and overall viewsheds will be mitigated by distance and the semi-permeable nature of the proposed substation. The substation on either site would be hidden from most views from the town which reduces the

impact to places important for tourism. Site B, due to its more exposed position, would have a slightly greater impact and is visible from one tourist accommodation facility.



Figures 15: View southwards over the general study area. The edge of Calitzdorp can be seen in the background, while the pleasant rural character of the surroundings is evident.

7. ASSESSMENT OF IMPACTS

7.1. Palaeontology

The chances of palaeontological impacts occurring are small. However, should fossils be encountered, their rescue would result in positive impacts as scientific knowledge will be increased. Impacts would occur during construction and Table 1 thus assesses construction phase impacts.

Table 1: Assessment of palaeontological impacts for Sites A and B.

	Before mitigation	After mitigation
Extent	Site	Site
Intensity	Low	Very low
Duration	Short term	Short term
Probability	Improbable	Improbable
Significance	Medium	Low
Status	Negative	Positive
Reversible	No*	
Cumulative impacts	There is a very small likelihood of palaeontological impacts occurring, but without knowing what might be present cumulative impacts cannot be assessed. Most likely cumulative impacts will be of little significance.	

* Avery (2012) rated the impacts as 100% reversible, however, he did not rate intensity which is reduced with mitigation. Reversibility is here considered impossible, since the resource cannot be recreated in its original state.

7.2. Archaeology

Archaeological material was extremely sparsely distributed on both sites and found to be of very low significance. No mitigation is required. Impacts would occur during construction and Table 2 thus assesses construction phase impacts.

Table 2: Assessment of archaeological impacts for Sites A and B.

	Before mitigation	After mitigation
Extent	Site	n/a
Intensity	Negligible	n/a
Duration	Permanent	n/a
Probability	Improbable	n/a
Significance	Very low	n/a
Status	Negative	n/a
Reversible	No	
Cumulative impacts	The archaeological material present in the immediate vicinity is of very low significance and the loss of larger areas containing such material is not significant.	

7.3. Visual impacts

The landscape in the study area has good scenic qualities and a distinct rural feel. It is relatively intact. Construction of the substation on Site A would result in fewer impacts to the landscape and its scenic qualities. In Tables 3 and 4, duration is assumed to be long term rather than permanent, since decommissioning and rehabilitation might conceivably occur one day. Status is likely to be negative at first, but with time would become neutral as the substation becomes an accepted part of the local landscape. The reversibility depends on the success of any rehabilitation measures, but it is likely that limited scarring of the landscape will remain despite rehabilitation.

Table 3: Assessment of visual impacts for Site A (based on operational Phase).

	Before mitigation	After mitigation
Extent	Local	Local
Intensity	Medium-Low	Low
Duration	Long term	Long term
Probability	Probable	Probable
Significance	Medium-Low	Low
Status	Negative / neutral	Negative / neutral
Reversible	Yes, partially	
Cumulative impacts	Cumulative impacts are not expected.	

Table 4: Assessment of visual impacts for Site B (based on operational phase).

	Before mitigation	After mitigation
Extent	Local	Local
Intensity	Medium	Medium-Low
Duration	Long term	Long term
Probability	Probable	Probable
Significance	Medium	Medium-Low
Status	Negative / neutral	Negative / neutral
Reversible	Yes, partially	
Cumulative impacts	Cumulative impacts are not expected.	

8. CONCLUSIONS

The palaeontological study finds that impacts are unlikely but could be of medium significance should they occur. It suggests that monitoring of excavations should be carried out due to the chance of encountering fossils related to wetlands or past carnivore activity. This can be coordinated with the contractors on site to ensure that the necessary inspections are carried out. The inspection could be done by the ECO so long as a palaeontologist is on call to assess any finds made. The archaeological study finds that no significant impacts will occur and overall significance is very low for both sites. The visual study finds Site A to be preferable as it has a greater capacity to absorb the development through topography, vegetation and proximity to the existing substation, is not isolated from the existing town, is aligned in the same general rectilinear arrangement as the town street grid and is not visible at all from the R62. Its overall visual impact is rated as low with mitigation. Site B is rated as having a medium-low visual significance overall with mitigation. Should the proposed mitigation measures be carried through, however, there would be no objection to the development proceeding on Site B should that ultimately be required.

9. RECOMMENDATIONS

It is recommended that construction of the proposed substation be allowed to proceed on either site. It is noted that Site A is preferred from a heritage point of view but that noise impacts have effectively screened it out leaving Site B as the developer's favoured alternative. Palaeontological monitoring should be carried out by the ECO and/or a palaeontologist, while visual mitigation measures as suggested by the visual specialist should be adhered to. The only other specific recommendation is to ensure that the small cottage located close to Site B is not disturbed in any way during construction or operation of the substation.

10. REFERENCES

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APPENDIX 1 – Paleontological specialist study

APPENDIX 2 – Visual specialist study