HERITAGE IMPACT ASSESSMENT FOR A PROPOSED 132 kV POWER LINE IN THE GEORGE AND OUDTSHOORN MAGISTERIAL DISTRICTS, WESTERN CAPE

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

Prepared for

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25 October 2012

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EXECUTIVE SUMMARY

ACO Associates cc was requested by SiVEST, on behalf of ESKOM, to conduct a heritage impact assessment for the proposed 132 kV power line linking the Outeniqua and Oudtshoorn Substations. The line would be approximately 27 km (Alternative 1, to the east) or 25 km (Alternative 2, to the west) long depending on the alternative chosen and will lie to the south of Oudtshoorn. It will be built with steel monopoles.

HWC responded to a Notification of Intent to Develop by requesting a Heritage Impact Assessment that included an archaeological specialist study. The site was visited over two days but large areas were inaccessible and could not be physically examined. Nevertheless, this limitation is not likely to significantly affect the outcome of the assessment.

The study area is composed primarily of undulating terrain covered with indigenous vegetation. River valleys cut through it and some agricultural land occurs along the rivers. Heritage resources known to occur in the general vicinity include open scatters of ESA and MSA artefacts in secondary contexts, LSA deposits in caves, LSA rock art in rocky areas and colonial heritage including many historical buildings both within Oudtshoorn and in its outlying areas.

The present survey revealed scatters of ESA and MSA artefacts, primarily in secondary contexts, a small LSA artefact scatter, some historical ruins, two historical farm graveyards and several historical structures. A few archaeological resources may be directly impacted but all are of very low significance. The main impact that will be experienced by the proposed development will be visual in nature. This entails intrusion of the power line into the local cultural/scenic landscape. To this end, the N12 running near Alternative B is deemed more significant than the local roads around Alternative A.

In terms of heritage resources, potential impacts from Alternative A are rated as being of low significance, while those pertaining to Alternative B are rated Medium. No mitigation is suggested for either alternative.

From the heritage point of view, and subject to the agreement of Heritage Western Cape, it is recommended that the project be allowed to proceed with Alternative A favoured over Alternative B. The following should be noted:

- If any human remains are uncovered at any point during development then work in the immediate vicinity should be halted and the find reported to Heritage Western Cape or an archaeologist. The remains would need to be exhumed at the cost of the developer under a permit issued to an archaeologist.
- It should be ensured that no structures or ruins, including the ruin at point 041, will be impacted by the development.

Contents

1. INTRODUCTION

ACO Associates cc was requested by SiVEST, on behalf of ESKOM, to conduct a heritage impact assessment for the proposed 132 kV power line linking the Outeniqua and Oudtshoorn Substations. The line would be approximately 27 km (Alternative 1) or 25 km (Alternative 2) long depending on the alternative chosen and will lie to the south of Oudtshoorn (Figure 1).

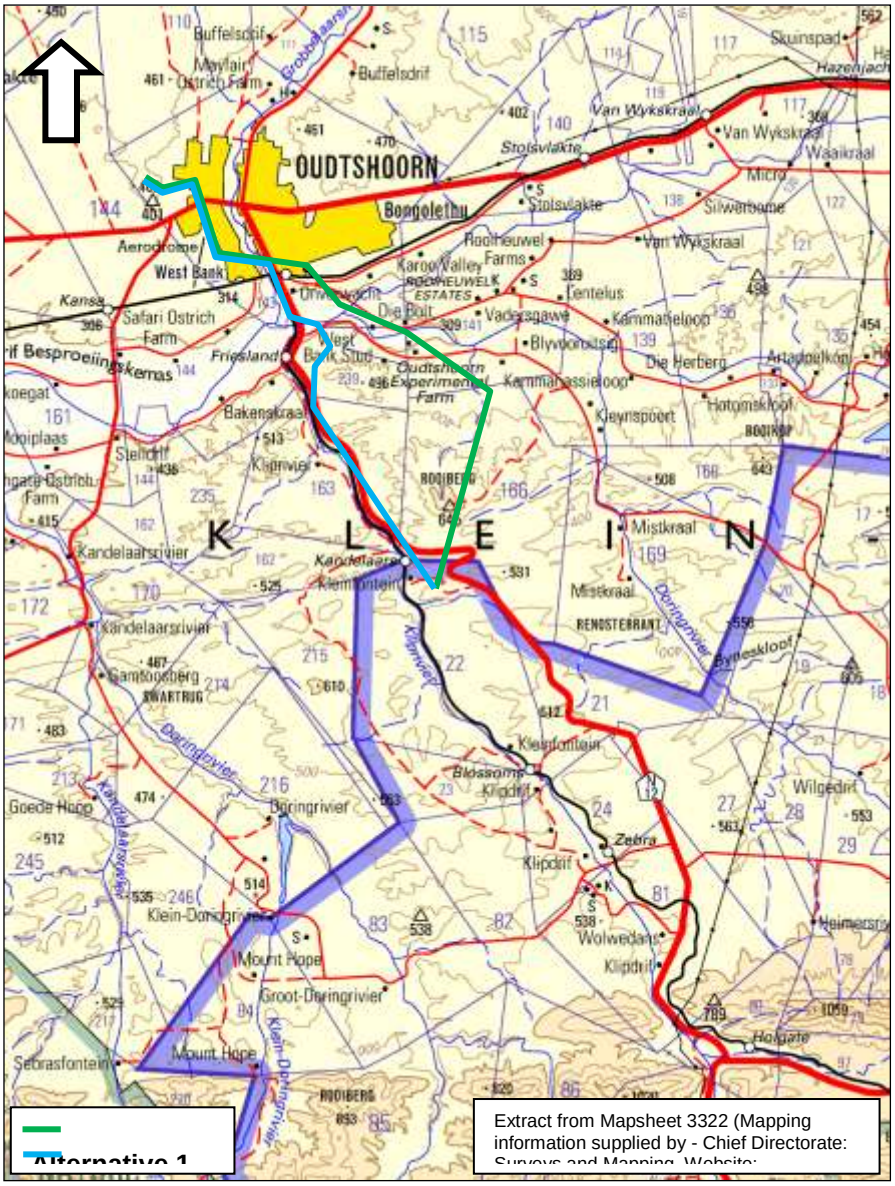

Figure 1: Map showing the location of the study area and approximate routes of the two alternatives.

The project involves the construction of a 132 kV power line that will link two existing substations. The line would be erected on single steel poles. Beginning at the Outeniqua Substation in the south, Alternative 1 follows the route of two existing power lines (including a 400 kV line) for approximately 8.6 km before branching off to the northwest to the Oudtshoorn Substation. Alternative B is entirely new and runs northwards roughly parallel to but diverging from the N12 to join Alternative A at a point some 7.8 km from the Oudtshoorn Substation.

1.1. Terms of reference

A Notification of Intent to Develop form was earlier submitted to Heritage Western Cape (HWC) who in turn called for a Heritage Impact Assessment (HIA) that included an archaeological specialist study. Since no other specialist studies were required, the archaeological study is incorporated directly within the present report which ACO Associates cc was asked to compile.

It should be noted that although only an archaeological specialist study was requested for the HIA, following normal practice, other aspects of heritage are also listed where these were encountered.

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 an Environmental Impact 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&DP).

3. METHODS

3.1. Literature survey

A survey of available literature was carried out to assess the general heritage context into which the development was to be set. This literature included published material, unpublished commercial reports and online material.

3.2. Field survey

Both alternatives were considered during the field study, but overall only as small proportion of their entire length could be examined in any detail. The survey was conducted over two days on the 17th and 18th of October 2012, assisted on the 17th by an ESKOM staff member. During the survey the positions of finds were recorded on a hand-held GPS receiver set to the WGS84 datum. Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape settings of the proposed power line.

3.3. Impact assessment

The impact assessment ratings were done according to standard criteria provided by SiVEST.

3.4. Limitations

The field survey was severely hampered by our inability to access many parts of the study area. The following reasons are advanced:

- Locked gates and occasional removal and replacement of ESKOM locks by landowners (the latter because of the next point below);
- Quarantine conditions in place due to ostrich illness (strict controls on access to ostrich farms have been enforced);
- The presence of breeding ostriches in certain fields;
- The rugged nature of the terrain in some parts; and
- Lack of farm tracks to some of the more remote parts of the study area.

However, despite the limitations, it is believed that the present report will arrive at an accurate conclusion as to the degree of impact that might be expected from the proposed development. This is due to the fact that the study allowed for a good understanding of the landscape context of the archaeological resources as will be explained below.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The site is characterised by undulating terrain and river valleys. Being Nama-Karoo, the vegetation is usually low but varies according to location and geological substrate. Figures 2 to 5 show various aspects of the vegetation cover. Taller vegetation generally occurs only in rockier areas and along the river margins. Agriculture occurs on some of the wider floodplains.

Figure 2: View of the vegetation on a shale hill.

Figure 3: View off an exposed hilltop shale patch.

Figure 4: Taller vegetation and agricultural planting along one of the river valleys.

Figure 5: Semi-arid type succulent vegetation on a silty river floodplain.

The substrate in much of the area is shale. This is evident on the surface as well fragmented shale gravel with exposed patches of rock in places (Figure 3). In some of these shale areas there are large numbers of small quartz fragments that have weathered from veins running through the shale (Figure 6). The hills in the northern part of the site were coated in quartzite gravel which included cobbles and angular fragments (Figure 7). This rock is of generally poor quality 9in archaeological terms) as was evident by the degree of fracturing.

Figure 6: View of the surface in a shale area showing the many small quartz fragments evident in places.

Figure 7: View of the surface in an area characterised by quartzite gravel, cobbles and fragments.

5. HERITAGE CONTEXT

The most significant archaeological work to have been carried out in the Oudtshoorn area is the excavations at Boomplaas Cave by Hilary Deacon and colleagues (H. Deacon 1979; H. Deacon *et al.* 1978; Klein 1978; Von den Driesch & Deacon 1985). There the researchers found convincing evidence for early pastoralism at the top of a deep sequence of archaeological deposits. The cave is in limestone and the cliffs there and at other nearby locations preserve rock art. Many cultural resource management reports in the general region

of the Little Karoo have revealed the presence of Early and Middle Stone Age archaeological material scattered about on the ground surface. Such material is usually of very limited archaeological research value due to its secondary context.

The historical period is richly represented in the Oudtshoorn area with many declared Provincial Heritage Sites. Fransen (2006) documents it well with the following sentences being the salient points. The town grid was laid out by surveyor J. Ford in 1847. Historical architecture abounds, but most of the early thatched and plastered houses have not survived with stone buildings from the late 19th and early 20th centuries dominating. Unique to the Oudtshoorn area are the large, usually Victorian, houses known informally as 'ostrich-feather palaces'.

An historical archaeological project relevant to the present project is the exhumation of several small early to mid-20th century graveyards known as the Suikerbult Community Cemeteries in southern Oudtshoorn close to the northern end of the proposed power lines (Halkett 2007, 2009; Halkett & Dewar 2006). These graveyards will be further dealt with under 'Findings' below.

6. FINDINGS

This report is focused on archaeological resources (which includes graves) but other types of heritage were noted during the survey and are also dealt with briefly below. Note that all finds are mapped in Figures 8 and 9.

6.1. Archaeology

Stone Age Archaeological resources were infrequent and when encountered were generally in secondary contexts. One Later Stone Age (LSA) site was found co-incidentally while awaiting the arrival of a landowner, but this was away from the power line corridors. The remaining observations were of Early (ESA) and Middle Stone Age (MSA) artefacts. Although a relatively small proportion of the two alignments could be physically examined, two key observations inform on the likelihood of finding similar archaeological resources elsewhere:

1. Much of the length of the two alternatives stretching northwards from the Outeniqua Substation crosses a shale substrate. Stone materials suitable for artefact manufacture are lacking and the geology does not allow for natural rock shelters. Stone artefacts were very rare in this area;
2. North of the shale area is a broad zone of reworked river cobbles which were generally of poor quality but did supply some materials for stone working. Artefacts were found to be variably and widely distributed among the cobbles but the nature of the material and its context has resulted in very low significance throughout.

6.1.1. ESA/MSA

Two areas were noted for their relatively high density of artefacts and were demarcated as 'archaeological sites'. Whether this has any bearing on reality is unknown but they are certainly more than just isolated artefacts.

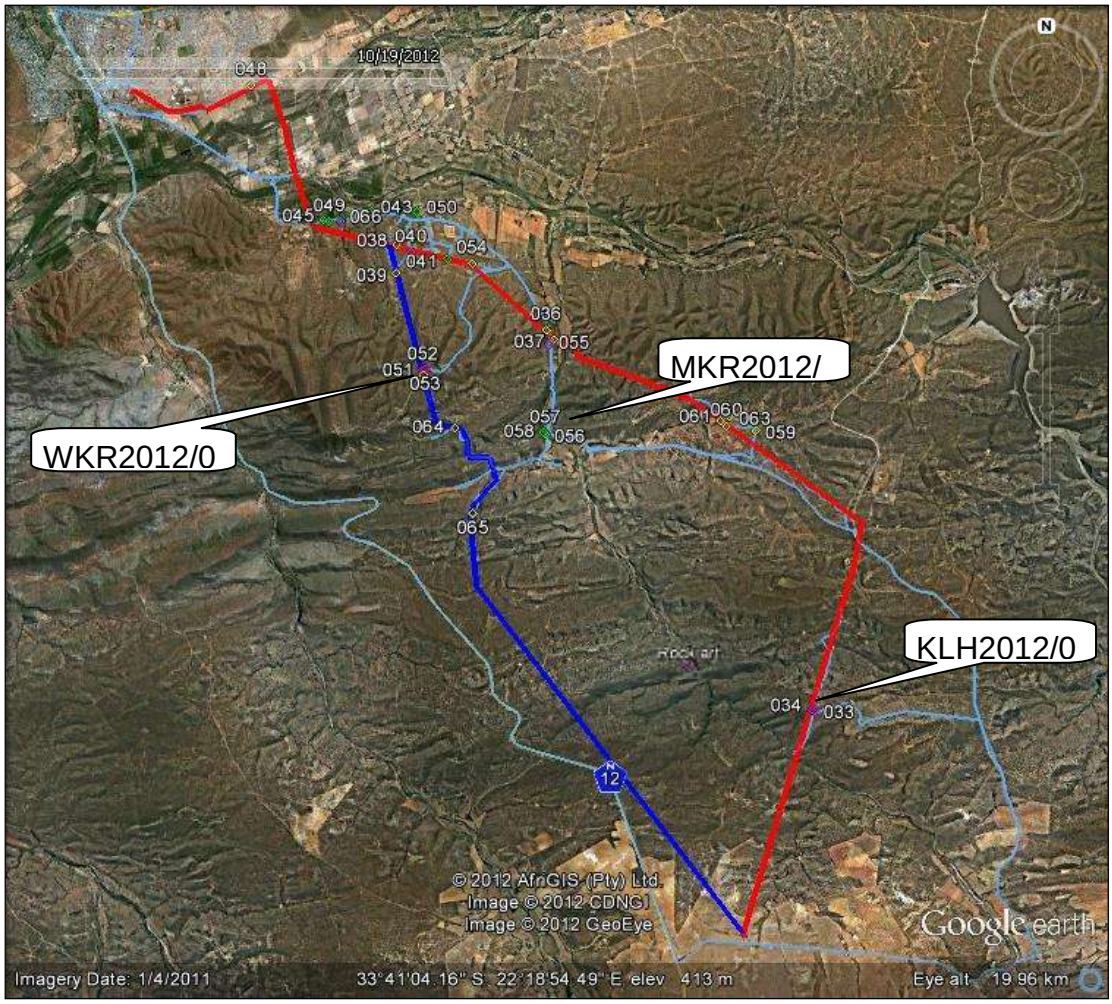

Figure 8: Aerial view of the study area showing the positions of finds. The three archaeological sites are labelled while the northern part of the study area is enlarged in Figure 9. Alternatives 1 (red) and 2 (blue) are indicated, along with the GPS tracks recorded during the survey.

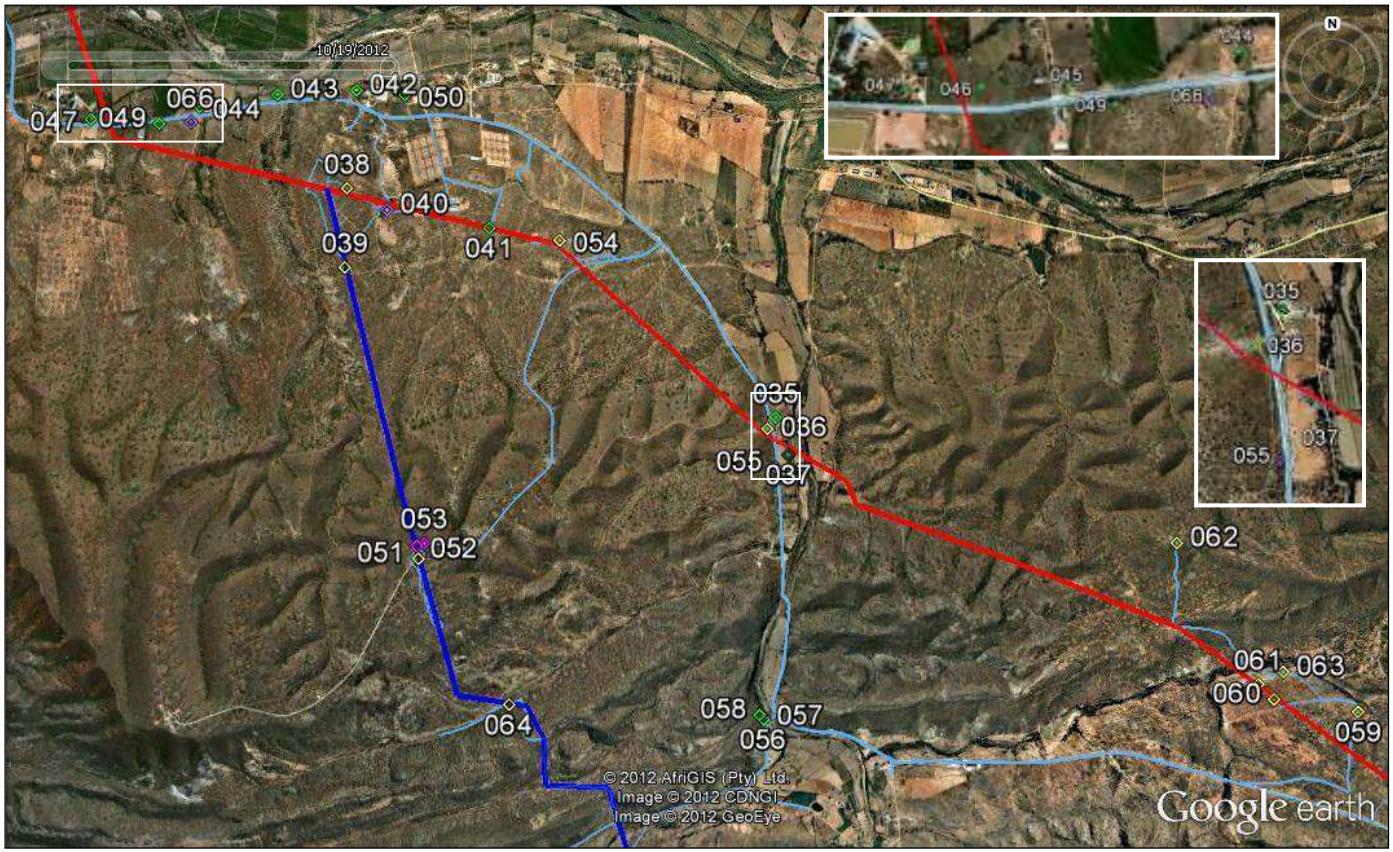

Figure 9: Aerial view of the northern part of the study area showing the location of finds. The insets show the far north-western and central clusters of finds.

The first was found on the farm Kleins Hoogte 19 and has been named KLH2012/001. It is located at S 33° 43' 21.0" E 22° 22' 15.5". It was comprised of a scatter of artefacts on a shale hilltop beneath the existing 400 kV power lines. Figures 8 to 10 show the site and its artefacts.

Figure 10: The location at which site KLH2012/001 was found. The substrate is shale gravel.

Figures 11 & 12: Artefacts from KLH2012/001 with scales in 10 mm intervals.

The second site was found on Wagenaars Kraal 166 and has been named WKR2012/001. It is located at S 33° 39' 37.5" E 22° 17' 08.5". Various artefacts were found in this area which was very close to the crest of a hill and included the distal half of a bifacial artefact – it was probably a hand-axe.

Figure 13: Artefacts from WKR2012/001. The scale bar is in 10 mm intervals.

Figure 14: Opposite sides and edge view of the biface found at WKR2012/001. Its maximum width is 104 mm.

In various other areas, almost always associated with cobbles, ESA and possibly also sometimes MSA artefacts were found (Figures 15 and 16). No other examples of hand-axes were noted with most finds just being flakes. Many of these artefacts, whether isolated occurrences or part of the two sites just described, were well weathered due to the very long period of exposure to the elements. All have very low archaeological significance.

Figure 15: Artefacts from point 039.

Figure 16: Artefacts from point 036.

6.1.2. LSA

Just one LSA site was found at S 33° 40’ 18.6” E 22° 18’ 44.0”. It was on Mist Kraal 169 and was named MKR2012/001. It occurred on a rocky terrace on the east bank of a river and was comprised of stone artefacts in quartz, quartzite, silcrete and CCS as well as a single fragment of ostrich eggshell. These finds were among many fragments of eroding bedrock and were in very close proximity to a historical site described below.

Figure 17: The location of site MKR2012/001 (arrowed) on the western side of a small river.

Figure 18: Artefacts from MKR2012/001. The scale bar is in 10 mm intervals.

A landowner also pointed out on the map the location of a rock art site in the study area but it was not visited. It appears to be in the extreme south of Mist Kraal 169 and has been named MKR2012/003. It is between the two alternative routes and more than 2 km from either. It is of no further concern here.

6.1.3. Historical archaeology

Two historical sites were found. One was located well away from the power line routes but is nevertheless placed on record to demonstrate the types of archaeological resources likely to occur in the area. It is on Mist Kraal 169 and was named MKR2012/002. It is located in the

same area as the LSA site reported above (and see Figure 17). Immediately south of the LSA site at S 33° 40' 19.1" E 22° 18' 44.0" was a small ruin of dry-stone walls built up against a bedrock outcrop (Figure 19). Downslope of this was a low dry-stone terrace that seemed to have been built to create a pathway on top of it. Following this to the north led to the remains of a mud-brick two-roomed house at S 33° 40' 18.0" E 22° 18' 42.9" (Figure 20). Historical artefacts were not noted around the ruins.

Figure 19: The dry-stone ruin at MKR2012/002.

Figure 20: The central wall of the mud-brick ruin at MKR2012/002.

One other small ruined structure was located at S 33° 38' 22.9" E 22° 17' 26.1" (point 041 on Figure 9) on the farm Roodeheuwel 141. It was named RDH2012/001. It was a rectangular structure made from cobbles and mud mortar and its age and function could not be discerned.

Figures 21 & 22: Two views of the remains of the cobbled structure at RDH2012/001.

6.2. Graves

Already mentioned above are the Suikerbult Community Cemeteries located in four locations close to the Oudtshoorn Substation (Figure 23). The very earliest graves may have been just over 100 years old (Halkett 2009) making them archaeological in terms of the NHRA but the vast majority were more recent. Nevertheless, they are still, broadly speaking, an

archaeological issue. Halkett (2009) oversaw the exhumation of these graveyards but has warned that, although he feels confident that all graves were found in the areas targeted, the possibility does remain that isolated graves could occur in this vicinity. The two areas were concern is expressed are at approximately S 33° 36' 31.2" E 22° 13' 18.8" and S 33° 36' 35.7" E 22° 13' 26.6"

No graves or graveyards were located in very close proximity to the proposed power line routes but two farm graveyards were noted along the road some 170 m from Alternative 1 and 240 m from the combined route respectively. The first, on Kamnatieloop 139, was named KTL2012/001 and was found at S 33° 39' 19.7" E 22° 18' 47.4". It had just three graves in it lying side-by-side. Two, of the Kleyn family, had formal granite headstones and appear to have been a husband (died 1960) and wife (died 1945) (Figures 24 & 25). The third was less formal with a cement cross for a headstone (Figure 26).

The second farm graveyard was on Roodeheuvel 141 and was named RDH2012/002. It was at S 33° 37' 57.8" E 22° 16' 01.5". It was larger with a fence enclosing an area of 25 m by 32 m. Eight graves had formal headstones and these appeared to represent four couples as follows: Appel: Died 1898 and 1898; Appel: Died 1925 and 1927; Appel: Died 1956 and 1955 and Zwiegelaar: Died 1942 and 1954. There were also approximately 27 less formal graves covered only by stone mounds. Unfortunately the graves could not be photographed as battery power had run out but the layout was sketched as shown in Figure 27.

Figure 23: The four identified and exhumed Suikerbult Community Cemeteries (yellow blocks) near the Oudtshoorn Substation (at the western end of the red line which represents the proposed power line). The yellow bar for scale at the bottom is 100 m long.

Figure 24: The grave of Hester Kleyn at KTL2012/001.

Figure 25: The grave of Theunis Kleyn at KTL2012/001.

Figure 26: The third grave at KTL2012/001.

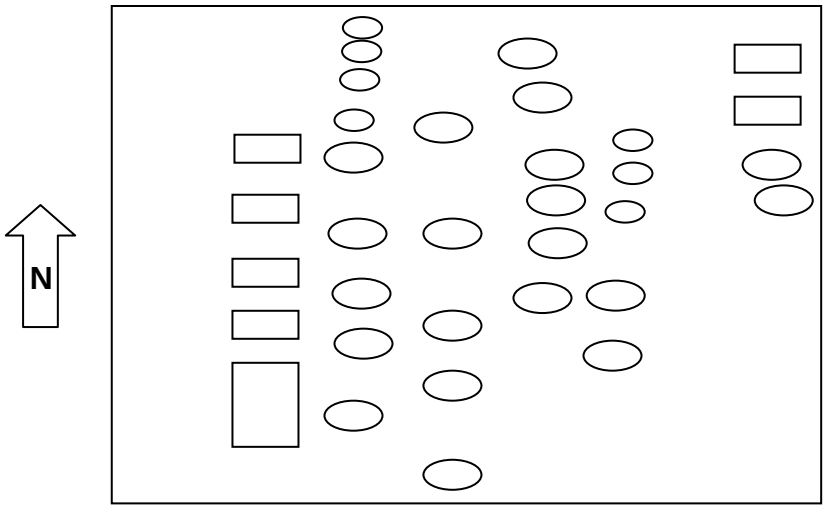

Figure 27: The layout of the Roodeheuwel farm graveyard, RDH2012/002. Rectangles represent formal graves while the ovals are less formal, stone-mounded graves. The large rectangle has two burials in a double grave.

Point 040 was noted only for the depth of fluvial silt that had accumulated in the small river valley there. It should be noted that this type of setting is appropriate for pre-colonial burial, especially given that much of the landscape is underlain by exposed bedrock and/or large river cobbles.

6.3. Other heritage

Other aspects of heritage documented during the survey were mainly historical structures. These were focused in the northern part of the study area along the Kammanassie River. They ranged greatly in style but their ages are all likely to be late 19th to early 20th century. Figures 28 to 33 show examples of these buildings ranging from an elaborately ornate 'ostrich-feather palace' in its planted landscape to a humble, flat-roofed labourers' cottage.

Figure 28: A Victorian 'ostrich-feather palace' and its planted landscape at point 042.

Figure 29: A vernacular stone-built farmhouse at point 043.

Figure 30: A stone-built barn at point 045.

Figure 31: A flat-roofed labourers' cottage at point 049.

A small stone alignment located in a bushy area alongside a field at point 037 may relate to agriculture and is of unknown age and no heritage value (Figure 34).

Figure 32: An early 20th century house at point 046.

Figure 33: A stone-built barn at point 035.

Figure 34: A small stone alignment at point 037.

A very small stone alignment was found at point 037 (Figure 34). Its function is unknown but it likely relates to agriculture in some way – a ploughed field lies very close by.

The only other aspects of note are the scenic aspects of the landscape. The south-eastern part of the study area has already been compromised by large power lines and is thus generally less pristine. Also, the national road (N12) to the west of Alternative B is of greater value as a scenic route than the other local roads due to the greater volume of traffic it carries.

7. ASSESSMENT OF IMPACTS

Two alternative routes have been identified for the proposed 132 kV monopole power lines. Alternative A follows existing power lines for part of its length then roughly follows a local gravel road and agricultural lands for the remainder of its length. Alternative B lies to the west and roughly follows the N12 for a short distance then continues through undeveloped, very hilly terrain before joining Alternative A in the far north. This study has identified more heritage resources closer to Alternative A but it is these very resources that have resulted in a higher degree of transformation of the landscape along that alignment. Alternative B has greater scenic value and is thus less suited to the proposed development. Tables 1 and 2 below evaluate the potential impacts to heritage resources for each alignment. These impacts are predominantly visual/scenic in nature since no built environment resources or graves will be directly impacted and the archaeological resources likely to be impacted are too insignificant to merit further concern. If archaeological impacts were to be rated independently they would end up with very low ratings. No mitigation is suggested for any aspects of heritage.

Table 1: Assessment of heritage impacts for Alternative A.

Nature	Visual intrusion of the power line into the cultural and scenic landscape.	
	Before mitigation	**After mitigation**
Extent	Local	-
Intensity	Low	-
Duration	Long term	-
Probability	Definite	-
Significance	Low	-

Status	Negative	-
Reversible	Yes (if the power line is removed)	
Cumulative effects	Low (No significant heritage resources will be directly impacted and as such no cumulative impacts to these resources will occur. There would be cumulative impacts to the scenic landscape due to the existing power lines but these are of limited significance due to the degree of transformation of the landscape.)	

Table 2: Assessment of heritage impacts for Alternative B.

Nature	Visual intrusion of the power line into the cultural and scenic landscape.	
	Before mitigation	**After mitigation**
Extent	Local	-
Intensity	Moderate	-
Duration	Long term	-
Probability	Definite	-
Significance	Medium	-
Status	Negative	-
Reversible	Yes (if the power line is removed)	
Cumulative effects	Low (No significant heritage resources will be directly impacted and as such no cumulative impacts to these resources will occur. There would be no cumulative impacts to the scenic landscape due to their being no large power lines currently along the N12/Alt B corridor.)	

8. CONCLUSIONS

Alternative A (following the existing power lines then branching off towards Oudtshoorn) is favoured over Alternative B as this would result in less 'new' impacts to the general scenic and cultural landscape. It is concluded from the nature of the landscape that archaeological resources of significance are unlikely to occur in the areas not physically searched. Direct impacts to heritage resources – archaeological or otherwise – that might arise from the proposed development are not considered to be significant.

9. RECOMMENDATIONS

From the heritage point of view, and subject to the agreement of Heritage Western Cape, it is recommended that the project be allowed to proceed with Alternative A favoured over Alternative B. The following should be noted:

- Unmarked pre-colonial burials are more likely to be found on river floodplains than in the shale hills and cobbled areas and the ECO should be aware of this possibility. If any human remains are uncovered at any point during development then work in the immediate vicinity should be halted and the find reported to Heritage Western Cape or an archaeologist. The remains would need to be exhumed at the cost of the developer under a permit issued to an archaeologist.
- It should be ensured that no structures or ruins, including the ruin at point 041, will be impacted by the development.

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