RETROSPECTIVE HERITAGE IMPACT ASSESSMENT FOR A ROAD ASSOCIATED WITH THE PROPOSED WITBERG WIND ENERGY FACILITY, MAGISTERIAL DISTRICT, 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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EXECUTIVE SUMMARY

ACO Associates was requested by Arcus Gibb to assess the impacts to heritage resources that might have resulted from the construction of an access road across the Witberg Mountains between Matjiesfontein and Touws River. The 2.4 m wide and 13 km long road was constructed in order to facilitate erection of wind testing masts. It is now being subjected retrospectively to an impact assessment by means of a Section 24G application.

Two alternatives have been identified for this project:

1. Maintenance of the existing road with mitigation as required; or
2. Full rehabilitation of the road.

The assessment was based on an earlier assessment conducted for the proposed Witberg Wind Energy Facility (WEF) and no new field studies were undertaken. The road runs along the ridgeline of the Witberg Mountain and the area has generally very low vegetation cover with rock outcrops in many places.

No significant heritage-related impacts are expected to have occurred, although should the road be visible from the N1 or Matjiesfontein then a visual impact of low significance would exist. However, it was confirmed by the visual specialist appointed for the S24G Application that the visual impacts are minimal.

Overall, it is concluded that negligible impacts to heritage resources would have occurred through construction of the 13 km long access road on the Witberg Mountain. Alternative 2 (rehabilitation) is favoured over Alternative 1 since visual landscape scarring would be reduced more quickly than if re-vegetation was left to nature. It is acknowledged, however, that the land owner wishes to retain and maintain the road.

The project should be granted a retrospective authorisation for either alternative but subject to one heritage-related condition that should the proposed wind farm ultimately not be constructed then any portions of the road not required by the farmer or existing land owner should be fully rehabilitated.
Declaration of independence:

I, Jayson Orton, am an independent specialist consultant who is in no way connected with the proponent, other than in terms of the delivery of consulting services.

I hold a Masters degree in archaeology and have been consulting since 2004 in the Northern, Eastern and Western Cape Provinces. I am an accredited Principal Investigator with the Association of Southern African Professional Archaeologists (ASAPA, member No. 233).

[Signature]
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1. INTRODUCTION

ACO Associates was requested by Arcus Gibb to assess the impacts to heritage resources that might have resulted from the construction of a road across the Witberg Mountains between Matjiesfontein and Touw's River (Figure 1). The 2.4 m wide and 13 km long road was constructed in order to facilitate erection of wind testing masts. It is now being subjected retrospectively to an impact assessment as a Section 24G application.

![Figure 1: Location of the study area. Local towns are indicated and the road runs approximately between the two stars marked “West” and “East”.](image)

The road was bulldozed across the top of the mountains following spaces between rocky sandstone outcrops along the crest of the ridges. As such, it is sinuous in places but straight in others where shale bands were traversed. A fuller description appears in Section 4 below.

Two alternatives have been identified for this project:

1) Maintenance of the existing road with mitigation as required; or
2) Full rehabilitation of the road.

The assessment contained in this report is strongly based on the prior assessment conducted for the proposed Witberg Wind Farm (Hart & Miller 2010). The present author was part of the team that conducted the field study for that project. This assessment considers all aspects of heritage that might be impacted including palaeontology, archaeology (pre-colonial and colonial), landscapes and scenic routes. The latter is not specifically listed by the NHRA but is discussed as a heritage issue in the provincial guidelines for involving heritage specialists in EIAs (Baumann & Winter 2005).
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 (DEA).

3. METHODS

The field survey for the wind energy facility was conducted between the 18th and the 21st of October 2010. During the course of assessing the locations of the wind turbines the entire course of the new gravel road was traversed providing excellent coverage for the assessment presented here. No new field study was undertaken.

3.1. Limitations

Assessment of palaeontological resources is strongly reliant on visible geological strata. To this end reliable assessment was only possible where fresh cuttings were available and the assessment had to be extrapolated across the study area based on geological strata.

In terms of archaeology, the only limitation experienced was the fact that the ground surface along the road had already been impacted thus preventing adequate examination of the actual footprint of the road. However, ground visibility in general was excellent and it is felt that the observations made along the mountain chain are sufficient for the present study.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The study area lies atop the Witberg Mountains in the southern Karoo between and south of the towns of Touws River and Matjiesfontein. The mountains are of bands of sandstone and shale and form prominent ridgelines. Figures 2 to 5 show various views of the road snaking along the top of the mountain.

Low vegetation characteristic of the high mountains of the Cape was present throughout and rocks and natural gravel were abundant across the surface.

The road itself was bulldozed across the mountain. It is some 2.4 m wide and 13 km long. In some areas the substrate was very rocky and the road had to circumnavigate the outcrops (Figure 2). Where smaller rocks were present these were pushed off to the side along with
the vegetation. Where the substrate was of shale the road was made far straighter and relatively light damage was inflicted (Figure 5). Figure 6 gives an impression of the overall landscape character in the study area.

**Figure 2:** View across the study area with the existing telecommunications tower in the background.

**Figure 3:** View across the study area with a wind testing mast visible.
5. HERITAGE CONTEXT

The geological context was summarised by Hart and Miller (2010: 18) as follows:

The “ridges are anticlinal (∩-shaped) structures, with exposed cores of erosion resistant sandstones of the Witpoort Formation (Dwi). These are flanked on their southern and northern sides by the more easily eroded, steeply dipping rocks of the Kweekvlei (Ck), Floriskraal (Cf) and Waaiipoort Formations (Cw), all part of the Witteberg Group. The present access road from the N1 crosses low ridges of the Witteberg, Dwyka and Ecca Groups”.
Figure 6: View towards the east along the Witberg ridgeline. The eastern end of the road is marked by the star and Matjiesfontein village is at the yellow pin. The road traverses the ridge in the centre of the picture.

The Witpoort Formation is generally fossil-poor, although small trace fossils were found during the wind farm survey along the existing access road cutting. The Kweekvlei, Floriskraal and Waaipoort Formations are all known to be fossiliferous but no fossils were found by Hart and Miller (2005).

In the Karoo, pre-colonial archaeology is generally focused in the valleys where water and other resources were more plentiful. Numerous surveys in the Karoo region have shown that scatters of stone artefacts pertaining to all three of the Stone Ages are plentiful. The most interesting aspect of prehistory, however, is undoubtedly the many stone walled kraals left behind by the Khoekhoe pastoralists who occupied the area within the last 2000 years. Such kraals have been recorded in various parts of the Karoo and are often associated with artefacts and pottery (Hart 1989, 2005; Hart et al. 2010; Sampson 1985, 2008). Rock art is also known from just south of the present study area (N. Wiltshire pers. comm. 2010). Archaeological resources are very seldom found high in the mountains. However, rare examples do exist with one small Later Stone Age site and a few isolated artefacts having been found at altitude in the Hex River Mountains by Orton (personal observation).

Colonial heritage is represented mostly by the various historical buildings within close proximity of the study area. They are all in the valleys and have been extensively discussed in Hart and Miller (2010). Most significant are the Victorian village of Matjiesfontein located just 9 km northeast of the study area and the farm Tweedside located along the N1 to the north of the study area. The farm was occupied by Mr James Logan who developed
Matjiesfontein (it was initially just a railway siding). The Tweedside station was his own personal station (Hart and Miller 2010). Other farm houses with historical character are also located in the general vicinity.

6. FINDINGS

The findings reported here come directly from the earlier assessment for the proposed Witberg Wind Farm.

6.1. Palaeontology

The Witberg Formation contains many trace fossils in this area and more fossils may have been exposed during the road works. However, similar fossils would be preserved in many other areas where this formation is present. The potential for exposing possibly fossiliferous mudrock lenses exists and these could be more significant.

The more important Kweekvlei, Floriskraal and Waaipoort Formations form the valley floors and would not have been impacted by the road development on the crest of the mountain. Other geological deposits that may contain fossils as described by Hart and Miller (2010) would also not be impacted on the crest of the mountain ridges.

6.2. Archaeology

Only one archaeological site was located during the survey and even this was very ephemeral. It consisted of a small number of stone artefacts located beneath an overhanging wall of rock at S33° 17’ 56.5” E20° 22’ 10.3” (Figures 10 – 12). Quite likely this site represents an overnight stopping point for people crossing over the mountain since it is not the kind of place in which we would expect to find much occupation debris. The shelter is away from the road and has not suffered any impacts.

![Figure 10: The overhanging rock wall beneath which the artefacts in Figure 11 were found.](image)

A single isolated Early Stone Age core was also found during the survey but it was on the lower slopes to the west of the study area. No colonial heritage was found along the mountain top, although a stone wall was present on the lowest slopes of the mountain at the west end of the study area.
6.3. Landscape and visual impacts

These two elements have been combined here since they are relatively minor and are strongly related. Although the area is very highly scenic and the N1 constitutes a major scenic route through the southern Karoo, the road is very unlikely to be visible to any degree from the N1 or from Matjiesfontein. Furthermore, if it is visible, this visibility would be very minor.
7. ASSESSMENT OF IMPACTS

7.1. Palaeontology

Paleontological impacts are deemed to have been of very low local significance and that specialist examination of the newly cut rocks is not likely to yield any further fossils. This is because most of the surface rocks disturbed through construction are already heavily weathered. Table 1 shows the assessment of impacts expected to have occurred. No mitigation is suggested and the assessments thus do not change. The impacts and their status are the same for both alternatives.

Table 1: Assessment of palaeontological impacts for Alternatives 1 & 2.

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<tr>
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<th>Alternative 1</th>
<th>Alternative 2</th>
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<td>Intensity</td>
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<tr>
<td>Cumulative impacts</td>
<td>The geological strata of concern are extensive and if any fossils were destroyed in this limited area through construction then this is not seen as significant.</td>
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</table>

7.2. Archaeology

Archaeological resources were very sparse in the study area and it is anticipated that none were disturbed or destroyed during construction of the road. No mitigation is suggested and the assessments thus do not change. The impacts and their status are the same for both alternatives.

Table 1: Assessment of archaeological impacts for Alternatives 1 & 2.

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<tr>
<td>Cumulative impacts</td>
<td>Archaeological material is generally extremely rare and of low significance on high mountains. Should anything have been lost through road construction then this is unlikely to be significant.</td>
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</table>

7.3. Landscape and visual impacts

This is the only aspect where a limited impact is expected to have occurred through visual scarring of the mountain. This scarring is unlikely to be prominently visible from below and the impacts are thus of low significance (Table 3). Alternative 2 (rehabilitation of the road) will result in a marginally lower significance. No mitigation is suggested for Alternative 1 while Alternative 2 is essentially a mitigated scenario from a visual perspective.
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<td>Reversible</td>
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<tr>
<td>Cumulative impacts</td>
<td>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.</td>
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8. CONCLUSIONS

It is concluded that negligible impacts to heritage resources would have occurred through construction of the 13 km long access road on the Witberg Mountain.

Alternative 2 (rehabilitation) is favoured over Alternative 1 since visual landscape scarring would be reduced more quickly than if re-vegetation was left to nature.

9. RECOMMENDATIONS

The project should be granted a retrospective authorisation for either alternative but subject to one heritage-related condition for Alternative 1:

- Should the proposed wind farm ultimately not be constructed then any portions of the road not required by the land owner should be fully rehabilitated to reduce scarring of the mountains.

10. REFERENCES


