

Agency for Cultural Resource Management

Specialists in Archaeological Studies and Heritage Resource Management

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26 November, 2011

Att: Ms Mariagrazia Galimberti
South African Heritage Resources Agency
PO Box 4637
Cape Town
8000

Dear Ms Galimberti,

RECOMMENDED EXEMPTION FROM HAVING TO CONDUCT AN ARCHAEOLOGICAL STUDY: THE PROPOSED BRAKPOORT KAROO PHOTO-VOLTAIC SOLAR POWER PLANT ON PORTION 6 OF THE FARM KRAANVOGELVLEI NO. 174, VICTORIA WEST, NORTHERN CAPE

1. Introduction

Blue Sky Solar (Pty) Ltd proposes to construct a 10 megawatt (MW) solar power energy generation facility on Portion 6 of the Farm Kraanvogelvllei No. 174 in the Upper Karoo region of the Northern Cape Province (Figures 1 & 2).

The proposed Brakpoort Karoo Photo Voltaic Solar Power Plant entails the construction of blocks/modules of photovoltaic (PV) solar panels covering a footprint area of about 20 ha. The PV panels will be mounted in concrete pedestals to be cast on top of any outcropping rock or set into the ground. Associated infrastructure entails twee spoor internal access roads, underground or surface cables, a small sub-station and a short, ± 250 m long overhead transmission line. While no bedrock excavations are envisaged, only some vegetation will need to be cleared for foundation purposes. Existing gravel farm roads on the property will be upgraded and used to access the site during the construction phase. No new access roads are planned.

The extent of the property to the north of the railway line is about 360 ha, and the 20 ha footprint area for the proposed PV plant, including associated infrastructure, is only 5.5% of the total area available, or 0.57% of the total farm which is more than 3500 ha in extent.

Kraanvogelvllei is situated about 30 km northeast of Victoria West and traversed by the railway line between Hutchinson and De Aar. Two alternative sites are under consideration. Electricity will be transmitted from the PV plant *via* a new step-up substation (also to be located on Portion 6 of the Farm Kraanvogelvllei No. 174) and new overhead power lines about 250 m long to the existing 132 KV power line, which is located directly north and west of Portion 6 of the Farm Kraanvogelvllei No. 174. The

connection to the existing 132 KV power line will be on the neighbouring Farm Davidskraal No. 116, Victoria West.

A Notification of Intent to Develop (NID) was completed by Withers Environmental Consultants and submitted to the South African Heritage Resources Agency on 21 October, 2011 for comment. In an email dated 22 November, 2011, Ms G. Galimberti stated that SAHRA would consider an exemption from having to authorize an Archaeological Impact Assessment (AIA) if it could be reasonably shown that the proposed development including associated infrastructure would not impact on any potentially significant archaeological heritage.

2. Archaeological Background

Despite the Karoo's bleakness and challenging winters, the area had a relatively high carrying capacity and teemed with game long before European colonization. Hunter gatherers (mainly San) successfully occupied the central interior of South Africa during the last 4500 years, subsisting on the large herds of grazing animals that occurred during that time (Sampson et al 1989).

Later Stone Age sites dating to the late Holocene (within the last 4000 years) are surprisingly common. Although the Karoo is presently more suited to the keeping of small stock such as sheep and goats, research in the Eastern Karoo region has revealed that, at about 1200 – 1400 AD, a climatic fluctuation (known as the mini-ice age) may well have caused an increased rainfall in the central Karoo resulting in the area being more suitable for grazing of cattle and occupation by Khoekhoen pastoralist groups. They left behind an archaeological legacy that consists of stone *kraal* complexes of which several hundred have been recorded in the Zeekoe Valley in the eastern Karoo (Hart 1989).

The indigenous San people of the Karoo waged a bitter war against colonial expansion as they gradually lost control of their traditional land. With the implementation of the commando system in the late 18th and early 19th centuries, the Karoo "Bushmen" were eventually destroyed or indentured into farm labour (Hart 1989).

3. Archaeology in the Victoria West area

Very little archaeological research has been done in the Victoria West area, but a few earlier studies have shown that dispersed scatters of Middle and Later Stone Age (MSA & LSA) tools do occur around the area (Goodwin & Van Riet Louw 1926; Humphreys 1979). Bushman rock paintings and rock engravings have also been recorded at Pampoempoot near Victoria West (Dave Morris McGregor Museum pers. comm.).

In recent years, several Archaeological Impact Assessments (AIAs), as part of the EIA process have been undertaken in the area. Dispersed scatters of MSA and LSA tools were documented on the farms Klipfontein, Swaerskraal, Spitzkop, Fortuin and Bon Espirange east and west of Victoria West during archaeological scoping for the proposed Eskom Gamma Omega 765 KV Transmission line (Kaplan, 2001). An examination of the (initial) proposed Gamma substation site near Victoria West did not locate any pre-colonial archaeological remains, but some historic stone walling was found (Morris 2004a). Water washed and weathered MSA and Early Stone Age (ESA) remains were, however, documented near the site of the proposed alternative (preferred)

substation (Van Schalkwyk & Wahl 2007). The authors of the above report also predict, based on a desk top study and consultation with colleagues that mainly dispersed, and isolated scatters of Stone Age tools are likely to occur in the proposed 400 Kv transmission line route between the Gamma (near Victoria West) and Grassridge substations (near Port Elizabeth) and that the remains are likely to have low archaeological significance.

Single, isolated, and mostly dispersed (low density) scatters of MSA flake tools were documented on the Farm Bultfontein, about 28 kms south east of Victoria West during a Heritage Impact Assessment (HIA) for a proposed wind energy farm (Halkett & Webley 2011). The authors of the report noted that potentially sensitive archaeological sites such as scatters of tools (with flakes, blades, chunks and cores) were documented on a large hilltop site in the study area, while the flatlands were mostly devoid of archaeological material.

It is interesting to note that all the AIAs done so far in the Upper Karoo region near Victoria West highlight landscape features, such as hills, ridges, and water sources such as pans and streams which would have been a foci of human activity, where coherent archaeological remains are more likely to be found (Halkett and Webley 2011; Seliane 2007, Morris 2007, 2004b, c, 2006; Van Schalkwyk & Wahl 2007).

The Upper Karoo region is also shot through by dolerite dykes, where the raw material hornfels is abundant and an excellent source for making stone tools (Parkington 1984). The NID for the proposed Brakpoort Karoo solar farm notes that low dolerite hills do occur on the property, but according Mr Aubrey Withers (pers. comm.), these low hills are not located anywhere near the footprint area of the proposed PV facility.

A number of detailed transects of the proposed Brakpoort Karoo PV site were also walked by Mr Withers, who found no evidence of any archaeological remains on or within the vicinity of the proposed PV sites.

It has also been confirmed that no graves or cemeteries occur within the footprint area of the proposed PV sites.

4. Conclusion

It is the archaeologist's professional opinion, that the construction of the proposed Brakpoort Karoo Solar Power Facility near Victoria West is not considered to pose a serious threat to the archaeological heritage for the following reasons:

- According to the NID, no archaeological remains were found in the proposed footprint area of the PV sites, which is flat and featureless.
- There are no streams, rivers, pans, or any other water sources in the proposed footprint area where one might expect more coherent archaeological remains to be found.
- There are no other significant landscape features such as hills, kopjes, ridges, rock outcroppings, or dolerite boulders in the proposed footprint area of the PV sites, where rock engraving, painted sites, or scatters of tools and other cultural items are more likely to occur.

- Apart from some underground cabling in the thicker soil parts of the site, extensive bedrock excavations are not envisaged.
- The footprint area is only about 5.5% (or 0.57% of the total farm) of the extent of the property, which is surrounded by vast tracts of vacant farmland.
- Existing gravel access roads will be upgraded and no new access roads are planned.
- The proposed overhead powerline is less than 300 m long.
- There are no buildings, structures or any other heritage resources or features in the footprint area of the proposed PV sites. The original farm house, which is in a severe state of disrepair is situated about 5.5 km away

5. Recommendations

The following recommendations are made:

- An Archaeological Impact Assessment is not required, since the probability of locating any significant archaeological remains is likely to be low.
- The Environmental Control Officer must be briefed by the archaeologist prior to proposed earthworks commencing.
- Contractors, staff and plant operators should also be briefed what to look out for during preparation of the site for development.
- A line of communication must be established between the archaeologist and the ECO before earthworks commence.
- Heritage remains uncovered or disturbed during earthworks should not be disturbed until inspected by the ECO and a professional archaeologist.
- In the unlikely event of any unmarked human burials or buried ostrich eggshell caches being uncovered during construction, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South Africa Heritage Resources Agency (Att: Ms Mariagrazia Galimberti 021 462 4502).

Yours sincerely

A handwritten signature in black ink, appearing to be 'JK' followed by a long horizontal stroke.

Jonathan Kaplan

6. References

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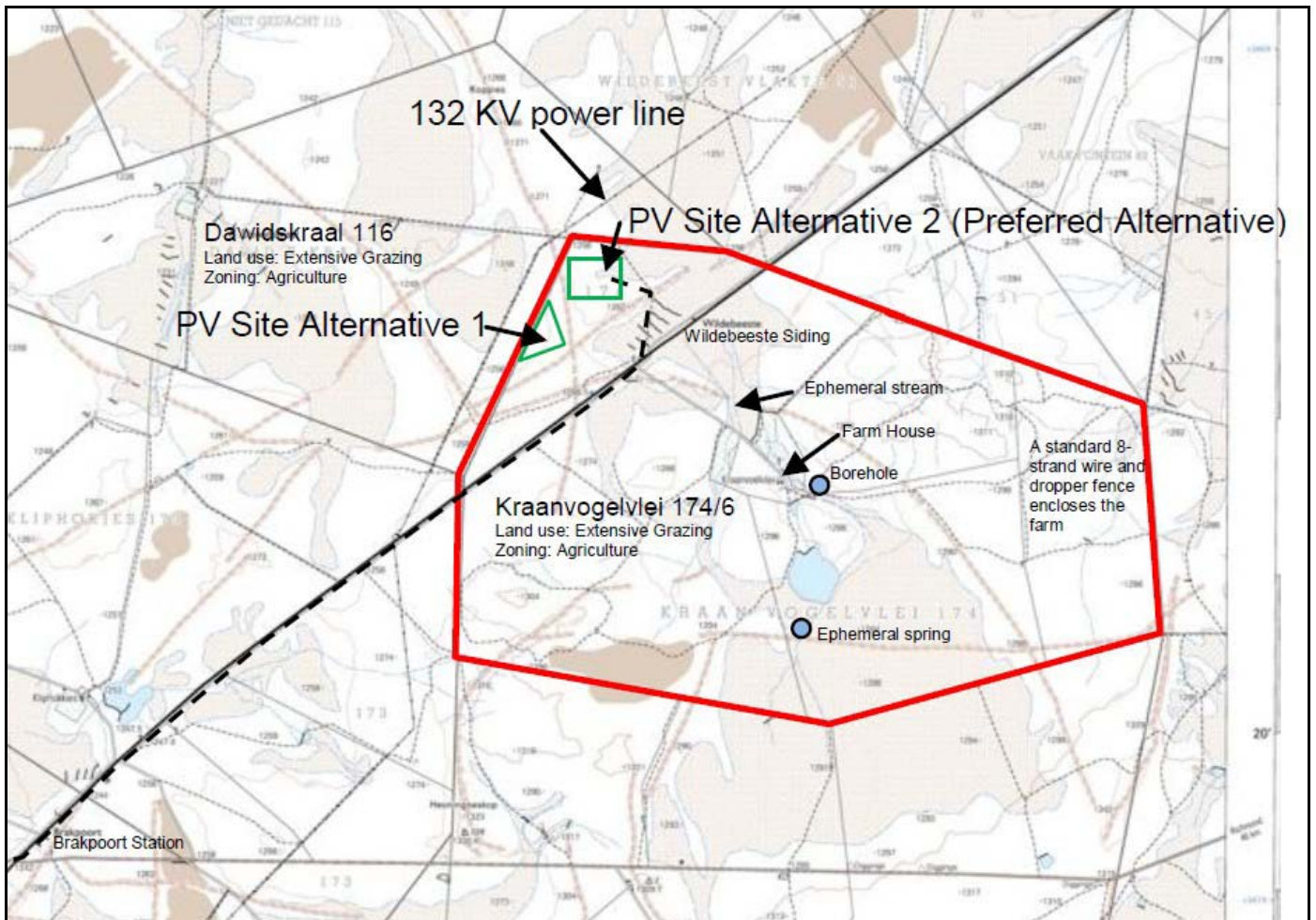


Figure 1. 1: 50 000 locality map: 3123AD Brakpoort, showing location of two alternative sites for the proposed solar power facility on Farm Kraanvogelvllei 174.



Figure 2. Google aerial photograph of the proposed Brakpoort Karoo PV study