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27 February 2016

Ms Engela Grobler Ages (Pty) Ltd 120 Marshall Street Polokwane 0699

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Dear Ms Grobler,

Palaeontological Desktop Study – Rhodes Solar Plant Development

As requested, herewith a Desktop Palaeontological Impact Assessment with regard to the proposed East 2 Solar Park and East 3 Solar Park in the Joe Morolong Local Municipality within the John Taolo Gaetsewe District Municipality, Northern Cape Province.

Yours sincerely

B.I. K

Bruce Rubidge PhD, FGSSA, FRSSA, Pr Sci Nat

PALAEONTOLOGICAL DESKTOP STUDY EAST 2 SOLAR PARK and EAST 3 SOLAR PARK DEVELOPMENT, JOE MOROLONG LOCAL MUNICIPALITY WITHIN THE JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE

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DATE: 27 February 2016

EXECUTIVE SUMMARY

A desktop Palaeontological Impact Assessment was undertaken on the proposed East 2 Solar Park and East 3 Solar Park to be established on the Remainder (964.2695 ha) and Portion 2 (856.5320 ha) of the Farm East 270, north of Hotazel in the Joe Morolong Local Municipality within the John Taolo Gaetsewe District Municipality, Northern Cape Province. The proposed development is to set up a Solar Park.

Although not exposed, the entire study area is deeply underlain by Precambrian rocks of the Griqualand West Sequence and more superficially by Quaternary sands of the Kalahari Group. There is a slight, but unlikely, possibility that the sands of the Kalahari Group could contain fossils of Quaternary age.

In my opinion this development will not negatively affect palaeontological heritage. If, in the extremely unlikely event that fossils are exposed in the aeolian sand deposits in the process of development activities, a qualified palaeontologist must be contacted to assess the exposure for fossils so that the necessary rescue operations are implemented.

TABLE OF CONTENTS

Background of development	5
Details of the study area	6
Geological Setting	6
Palaeontological Heritage	6
Recommendation	6
Conclusions	7
Bibliography	7

REPORT

Background Information of the development

This desktop report is part of a Heritage Impact Assessment to determine the effect of the proposed East 2 Solar Park and East 3 Solar Park which will be established on the Remainder (964.2695 ha) and Portion 2 (856.5320 ha) of the Farm East 270, Kuruman RD, 4 km North of Hotazel, in the Joe Morolong Local Municipality within the John Taolo Gaetsewe District Municipality Northern Cape Province. The study area is delimited to the east and west roads running from Hotazel in the south to Lower Dikgathong in the north and covers a surface area of about 1820 ha.

The study was commissioned by Africa Geo-Environmental and Engineering Services Limpopo (AGES) (Pty) Ltd and I was asked to provide a desktop assessment of the effect that the proposed development will have on the palaeontological heritage.



Figure 1: Map showing the position of the proposed East 2 Solar Park and East 3 Solar Park will be established on the Remainder and Portion 2 of the Farm East 270, in Joe Morolong Local Municipality within the John Taolo Gaetsewe Distrit Municipality Municipality, Northern Cape Province (Map Sheet 2722BB).

Details of the study area

The study area proposed for the development of a Solar Park is on the farm East 270, in the Joe Morolong Local Municipality within the John Taolo Gaetsewe District Municipality, northwest of Hotazel Northern Cape Province (Figure 1) and is covered by the 1:50 000 topographical Map Sheet number 2722BB.

Geological Setting

The area is very deeply underlain by Precambrian rocks of the Griqualand West Sequence, and the entire study area is overlain by Quaternary sands of the Kalahari Group (Figure 2).



Figure 2: Geology of the Study area (1:250 000 Geological Map Series of the Republic of South Africa, Sheet number 2722 Kuruman). Black quadrangle shows study area on the farm East 270

Palaeontological Heritage

As there are no rocks exposed and the entire study area is covered by Quaternary aeolian sands of the Kalahari Group is extremely unlikely that fossils will be found in the study area. The sands of the Kalahari Group are of sedimentary of origin and the possibility thus exists that they could host fossils but this is extremely unlikely.

Recommendation

Because of the nature of the construction of solar parks it is extremely unlikely that the proposed development will have any effect on palaeontological heritage. However if fossils are exposed in the Quaternary deposits of the Kalahari Group it will create a unique opportunity to explore the area for fossils. It is thus recommended that, in the unlikely event that fossils are exposed as a result of construction activities, a qualified palaeontologist must be contacted to assess the exposure for fossils

before further development takes place so that the necessary rescue operations are implemented. Depending on the nature of the fossils discovered this could entail excavation and removal to a registered palaeontological museum collection. A list of professional palaeontologists is available from South African Heritage Resources Agency (SAHRA).

Conclusions

The proposed development of the East 2 Solar Park and East 3 Solar Park will extend over unconsolidated Quaternary deposits of the Kalahari Group. It is extremely unlikely that fossils will be exposed as a result of the solar park development. It is considered that, from a palaeontological perspective, the development of the proposed East 2 Solar Park and East 3 Solar Park should proceed, but that if fossils are uncovered in the course of construction activities, the developer immediately calls in a qualified palaeontologist to assess the situation and, if necessary, undertake excavation of the fossils.

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