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29 June 2013

Ms Engela Grobler
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Dear Ms Grobler,

Palaeontological Desktop Study – Manlenox Solar Park, Barkley West

As requested, herewith a Desktop Palaeontological Impact Assessment with regard to the proposed Manlenox Solar Park north west of Barkly West, Northern Cape Province.

Yours sincerely

A handwritten signature in blue ink, appearing to read "B. Rubidge".

Bruce Rubidge PhD, FGSSA, FRSSA, Pr Sci Nat

**PALAEONTOLOGICAL DESKTOP STUDY
MANLENOX SOLAR PARK, NORTH WEST OF BARKLY WEST, NORTHERN
CAPE PROVINCE**

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DATE: 29 June 2013

EXECUTIVE SUMMARY

A desktop Palaeontological Impact Assessment was undertaken on the proposed Manlenox Solar Park on Portion 0 of the Farm Grootvlei, approximately 65 km north west of Barkly West in the Northern Cape Province. It further falls under the Kgatelopele Local Municipality. The proposed development is to set up a Solar Park.

The entire study area is underlain by rocks of the Precambrian Transvaal Supergroup and more superficially by late Caenozoic calcretes of the Kalahari Group. Dolomites of the Transvaal Supergroup are known to contain fossil stromatolites, and there is a slight, but unlikely, possibility that the calcretes of the Kalahari Group could contain fossils of Caenozoic age.

In my opinion this development will not negatively affect palaeontological heritage. If, in the extremely unlikely event that fossils are exposed in the calcrete 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.

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REPORT

Background Information of the development

This desktop report is part of a Heritage Impact Assessment to determine the effect of the proposed Manlenox Solar Park on Portion 0 of the Farm Grootvlei, approximately 65 km north west of Barkly West in the Northern Cape Province in the Kgatelopele Local Municipality.

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

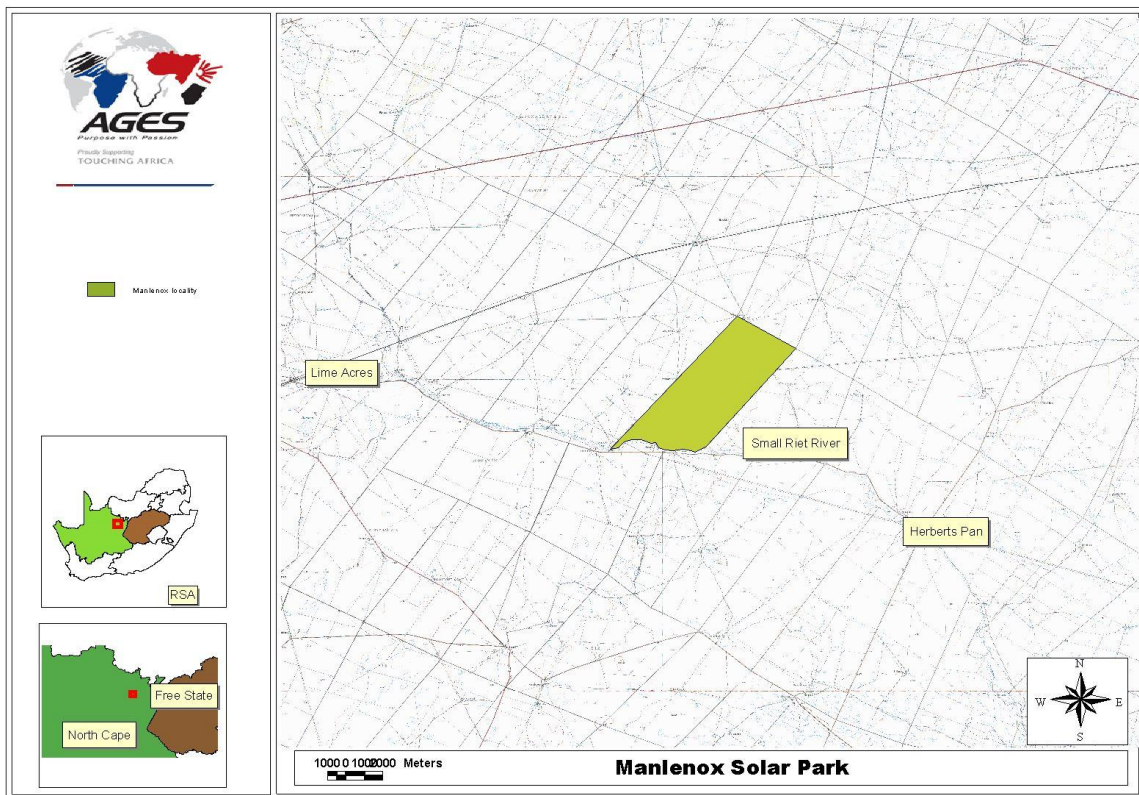


Figure 1: Map showing the position of the proposed Manlenox Solar Park on the Farm Grootvlei north west of Barkley West.

Details of the study area

The study area proposed for the development of a Solar Park is on the Farm Grootvlei, approximately 65 km west of Barkly West in the Northern Cape Province (Figure 1) and is covered by the 1:50 000 topographical map Sheet numbers 2823 BD and 2823 BC.

Geological Setting

The entire area is underlain by rocks of the Transvaal Supergroup comprising sedimentary rocks of the Precambrian Gaap Group (Campbell Rand Subgroup) which comprise dolomites. Over most of the study area these rocks are overlain by Caenozoic Calcretes of the Kalahari Group (Figure 2).

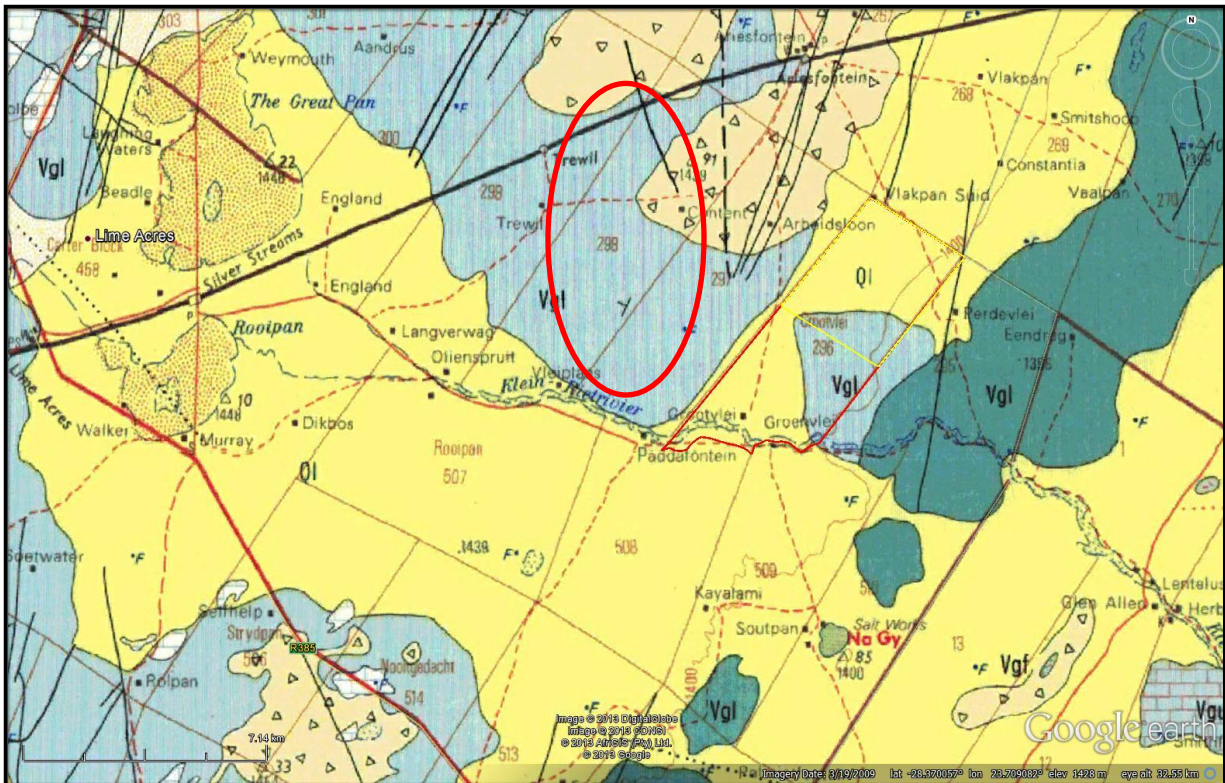


Figure 2: Geology of the Study area (1:250 000 Geological Map Series of the Republic of South Africa, Sheet number 2822 Postmasburg). Red oval shows study area

Palaeontological Heritage

The dolomites and carbonite rocks of the Gaap Group which are exposed in only a small part of the study area could potentially host fossil of stromatolites. The calcretes of the Kalahari Group which are also sedimentary of origin could also host much younger fossils but this is extremely unlikely.

Collections of stromatolites from the Transvaal Supergroup are present in the collections of the Evolutionary Studies Institute (ESI), formerly BPI Palaeontology, at the University of the Witwatersrand, and the Council for Geoscience in Pretoria.

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 Caenozoic 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 Manlenox Solar Park will extend over Precambrian rocks of the Transvaal Supergroup as well as Caenozoic calcrete 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 Manlenox 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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