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Date: 28 May 2020

**PROPOSED RE-ALIGNMENT OF THE BOTSWANA-SOUTH AFRICA (BOSA)
TRANSMISSION INTERCONNECTION PROJECT: SOUTH AFRICAN SECTOR,
NORTH WEST PROVINCE**

Palaeontological Heritage Resources Comment

The proposed Botswana-South Africa (BOSA) Transmission Interconnection Project involves the construction of a new 400 kV transmission powerline of *c.* 210 km length between the existing Isang Substation near Gaborone in Botswana and the recently authorised Pluto substation near Mahikeng in the North West Province of South Africa. Due to potential overlap between the approved 400 kV Pluto-Mahikeng power line and the BOSA transmission line it is now proposed to realign the BOSA alignment to run adjacent to the Pluto line, *within* the approved Pluto-Mahikeng corridor (on the North and West side) (See satellite map Fig. 1).

The South African sector of original BOSA transmission line corridor was the subject of a desktop palaeontological heritage assessment (PIA) by Almond (2018) while the Pluto-Mahikeng power line and substation were covered by a combined desktop and field-based PIA report by Durand (2018). In both cases, the region in the vicinity of the Pluto Substation, which is underlain by Precambrian bedrocks of the Ventersdorp Subgroup (dark brown in geological map Fig. 2) as well as largely unconsolidated cover sediments of the Caenozoic Kalahari Group (pale yellow in Fig.2), was deemed to be of LOW palaeontological sensitivity. No further specialist palaeontological studies or mitigation for this southernmost sector of the original BOSA line were recommended by Almond (2018).

The proposed short realignment of the BOSA transmission line close to Pluto Substation (Fig. 2) overlies broadly similar geology to the original BOSA alignment. No changes in the impact significance (LOW), conclusions and recommendations with regard to palaeontological heritage resources are therefore anticipated and there are no objections on palaeontological grounds to the proposed small realignment of the BOSA transmission line.

Given the low palaeontological sensitivity of the relevant sectors of the BOSA and Pluto-Mahikeng transmission lines, cumulative impacts on local fossil heritage are anticipated to be LOW.

It is noted that the northernmost point of the revised alignment closely approaches the Ramatlabama drainage line which might be associated with potentially-fossiliferous Late Cenzoic alluvial deposits. However, the drainage line is minor and will not be intersected by the transmission line corridor. The Chance Fossil Finds Procedure outlined by Almond (2018, Appendix) applies with particular force here.

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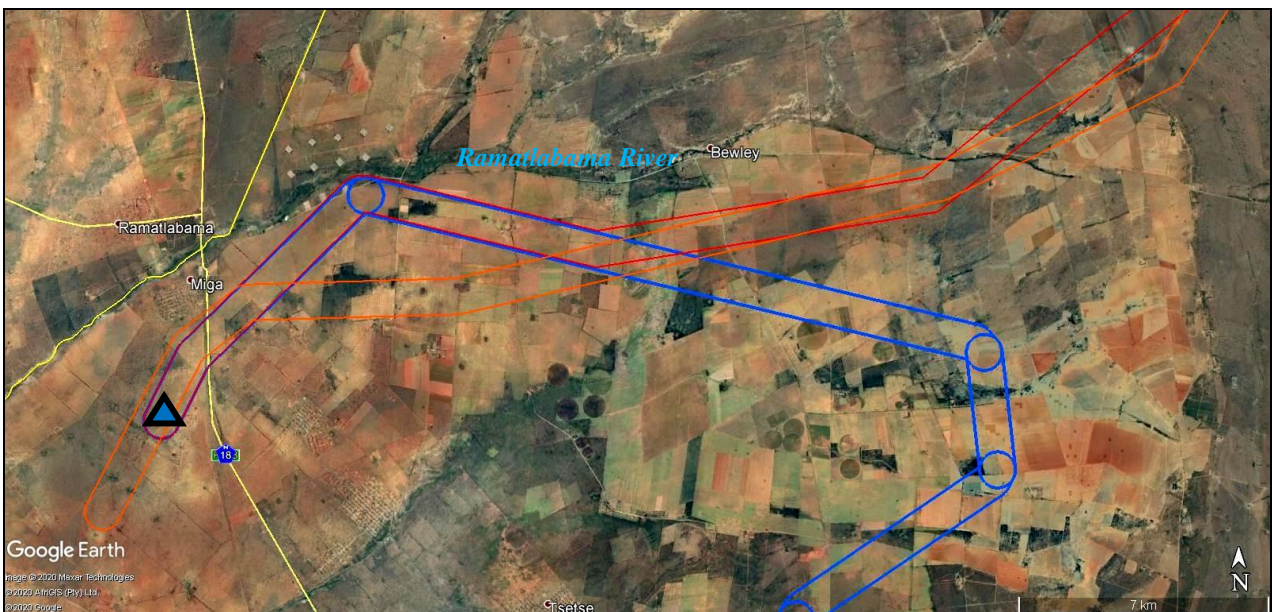


Figure 1: Google Earth© satellite image of the region near the authorised Pluto Substation site (blue triangle), close to the North West Province – Botswana border near Ramatlabama. Also shown here are the approved corridor for the 400 kV Pluto-Mahikeng power line (blue), the original BOSA transmission line (orange) as well as the proposed new BOSA realignment (red). The short northward deviation of this last alignment to run within the approved Pluto-Mahikeng power line corridor brings the BOSA line closer to the Ramatlabama drainage line but has no significant palaeontological heritage implications.

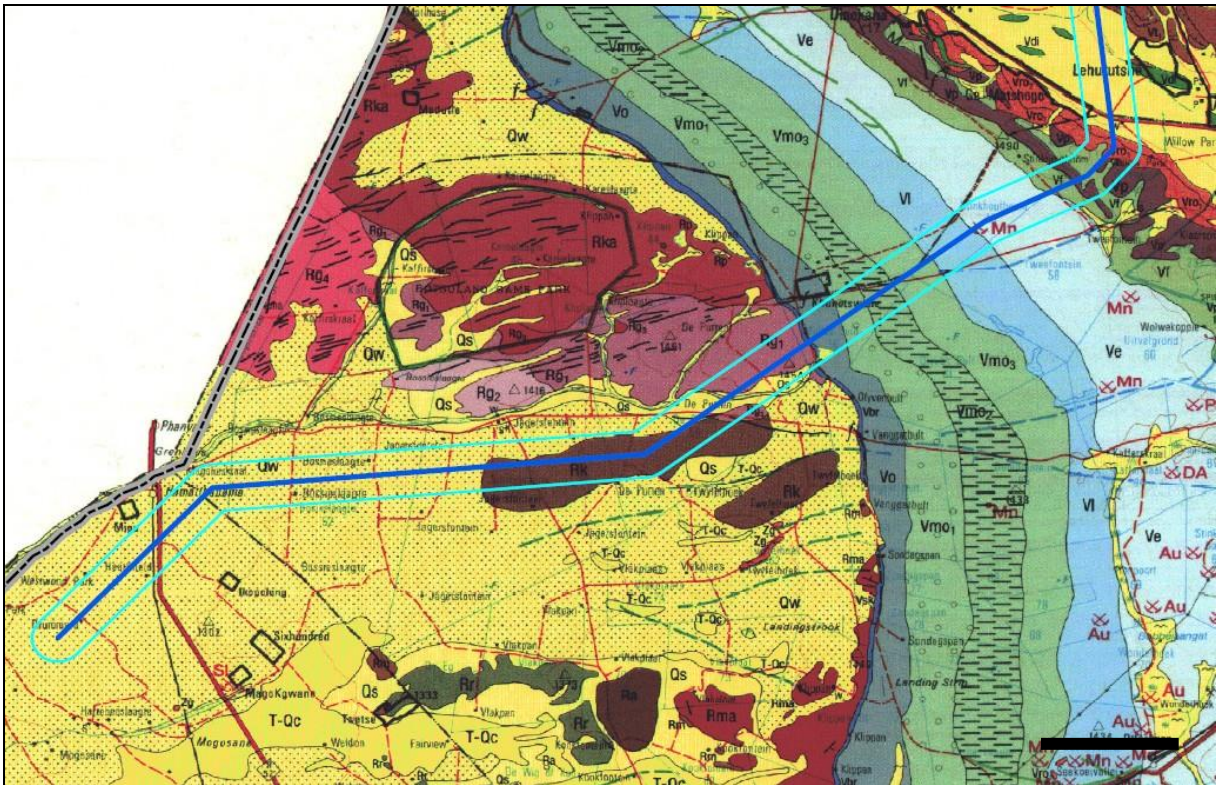


Figure 2: Detailed geological map of the southernmost sector of the BOSA transmission line connecting to the authorised Pluto Substation (Extract from 1: 250 000 sheet 2524 Mafikeng, Council for Geoscience, Pretoria; image modified from PIA report by Almond 2018). Scale bar = 5 km. N towards top of the image. Transmission line sectors near Pluto Substation overlying Precambrian bedrocks of the Ventersdorp Supergroup (dark brown) and Caenozoic Kalahari Group (yellow) are of LOW palaeosensitivity. Anticipated impacts on local palaeontological heritage resources here are anticipated to be low to negligible and, pending new chance fossil finds during construction, no specialist palaeontological mitigation is recommended here. This assessment and recommendation apply equally to the original as well as the revised BOSA alignment (See satellite image in Fig. 1 for details of these alignments).

REFERENCES

ALMOND, J.E. 2018. Proposed Botswana-South Africa (BOSA) transmission interconnection project: South African Sector, North West Province. Palaeontological heritage specialist assessment: desktop study, 37 pp. Natura Viva cc, Cape Town.

DURAND, J.F. 2018. Proposed Mahikeng Main Transmission Substation and a proposed 400 kV Pluto-Mahikeng Powerline within the Merafong City Local Municipality of the Gauteng Province and the Ditsobotla, JB Marks and Mafikeng Local Municipalities of the North West Province, 53 pp.