

Exemption from Phase 1 Palaeontological Impact Assessment: Randfontein Community Library on Erven 135 and 123, Randfontein Local Municipality, Gauteng Province.

Site: Erven 135 and 123, Randfontein Local Municipality, Gauteng Province

Map Reference: 1:250 000 scale geological map 2628 East Rand.

Site Coordinates: 26°11'5.02"S 27°41'59.14"E

The proposed activity calls for the construction of a new community library on an area covering <5000 m², located on the corner of Second and Stubb Street, Randburg Local Municipality, Gauteng Province (**Fig. 1**).

According to the 1:250 000 scale geological map 2626 West Rand, the study area lies within the outcrop area of the Palaeoproterozoic (2642-2584 Ma old) Black Reef Quartzite Formation, a thin, siliciclastic pebble unit at the base of the Transvaal Supergroup. (Els et al. 1995; Eriksson *et al.* 2006). It is underlain by Archaean rocks belonging to the basement complex and the Witwatersrand and Ventersdorp Supergroups, and is overlain by a thick succession of stromatolite-bearing carbonate rocks of the Malmani Subgroup and typically comprises a succession of interbedded arenites, mudstones, and basal conglomerates. The formation has been regarded as a time equivalent of the Vryburg Formation in Griqualand West, but radiometric age dating of the overlying Oaktree Formation (Malmani Subgroup) suggest that this correlation might be incorrect (Walraven and Martini 1995). The lower part of the Malmani Subgroup (Oaktree Formation) consists predominantly of finely bedded to massive dark dolomite, with abundant carbonaceous shales and quartzites, but stromatolites and chert rare near the base (Eriksson, 1972). It is considered that the basal strata are characteristically bedload deposits, possibly the detritus of a braided stream system (Coetzee 1996). The strata overlying these are characteristic of shallow marine conditions, signifying a transgression as an epeiric sea advanced onto the Kaapvaal Craton that brought about clear-water conditions for cyclic sedimentation in the dolomites of the Black Reef Quartzite Formation and the precipitation of the overlying carbonates and columnar stromatolites of the Malmani Subgroup (Coetzee 1996; Els *et al.* 1995).

Potential palaeontological impact on carbonaceous rocks (dolomites) of the Black Reef Quartzite Formation is regarded as low because of the palaeontologically insignificant superficial overburden that is buffering the site and because of the size and scale of excavations over a relatively small impact area (< 2m - deep linear foundation trenches on an area <5000m² in size).

It is recommended that exemption from further palaeontological studies is granted for the proposed project, provided that all excavation activities are restricted to within the boundaries of the development footprint. In the event of chance exposure of potentially fossiliferous carbonate rocks it

is advised that SAHRA is notified as soon as possible so that appropriate steps can be taken (e.g. recording, sampling or collection) by a professional palaeontologist.

References

Coetzee, H.P.A. 1996. *The stratigraphy and sedimentology of The Black Reef Quartzite Formation, Transvaal Sequence, in the area of Carletonville and West Rand Goldfields*. Unpublished MSc - thesis. Northwest University, Potchefstroom.

Els, B.G., van den Berg, W.A. & Mayer, J.J. 1995. The Black Reef Quartzite Formation in the western Transvaal: sedimentological and economic aspects, and significance for basin evolution. *Mineralium Deposita* 30: 112.

Eriksson, K . A. (1 972). Cyclic sedimentation in the Malmani Dolomite, Potchefstroom Synclinorium. *Transactions of the Geological Society of SA*. 75: 85-97.

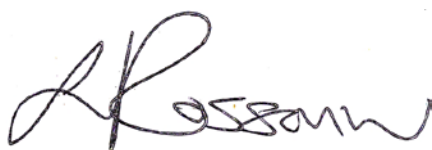
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Walvaren, F. and Martini, J. 1995. Zircon Pb-evaporation age determinations of the Oaktree Formation, Chuniespoort Group, Transvaal Sequence: implications for Transvaal-Griqualand West basin correlations. *South African Journal of Geology* 98: 58-67.

SAHRIS PalaeoSensitivity Map 2015 (<http://www.sahra.org.za/sahris/map/palaeo>).

DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.



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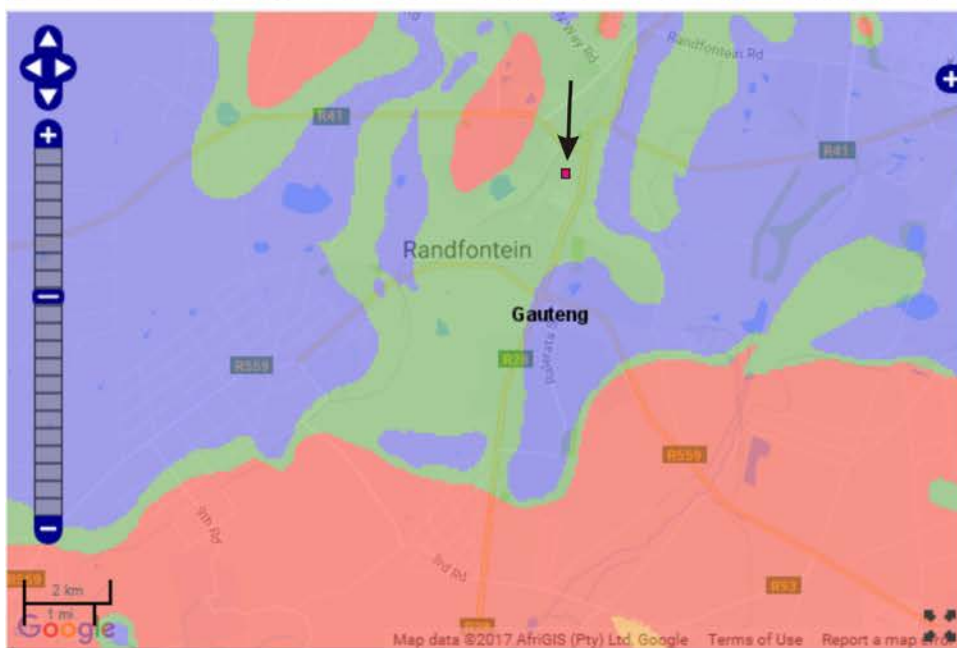
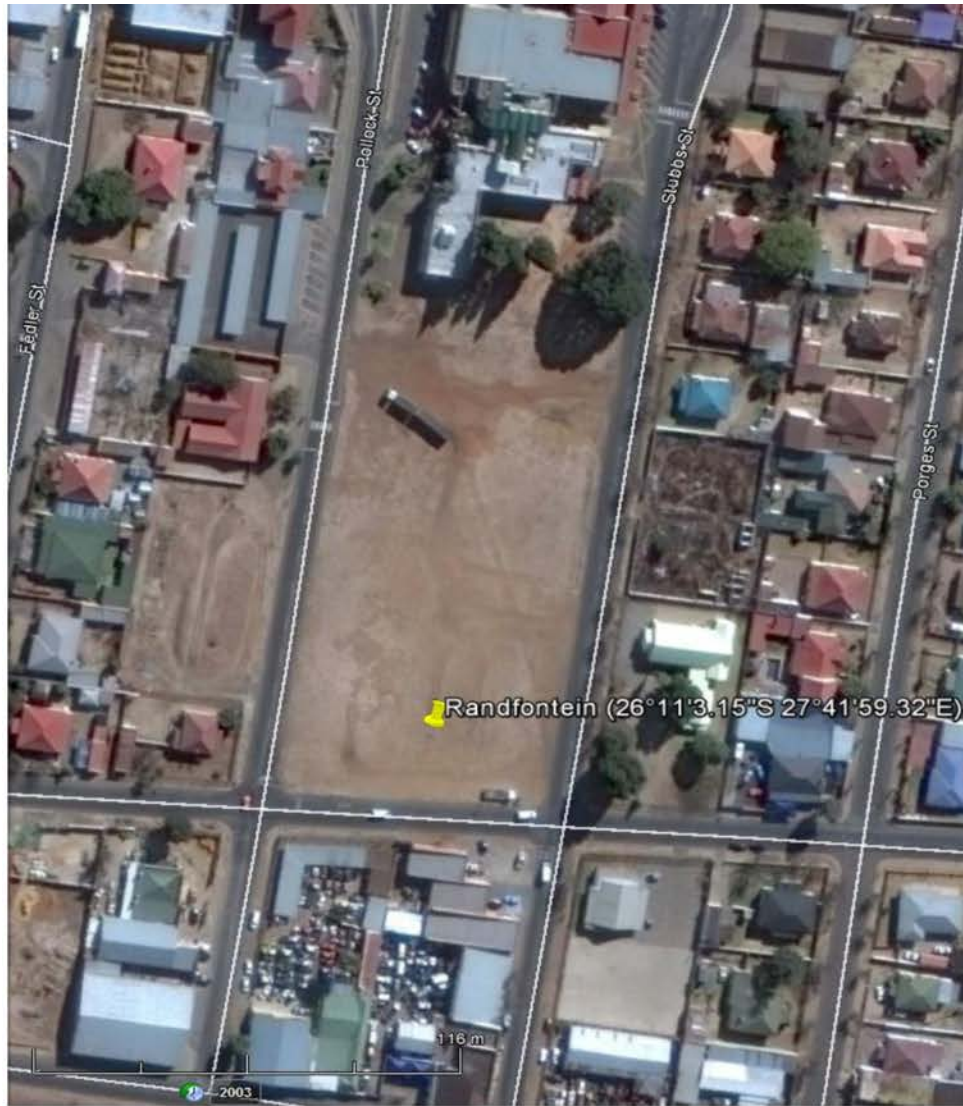


Figure 1. Aerial view of the study area (top) and its position on the SAHRIS palaeontological sensitivity map (green area).