Exemption Letter – Poultry Farm at Radium, Bela Bela

Heidi Fourie – Palaeontologist

Poultry Farm on Portion 35 of the Farm Springbokvlakte 41-JR within the Waterberg District Municipality, Bela Bela Local Municipality, Limpopo Province.

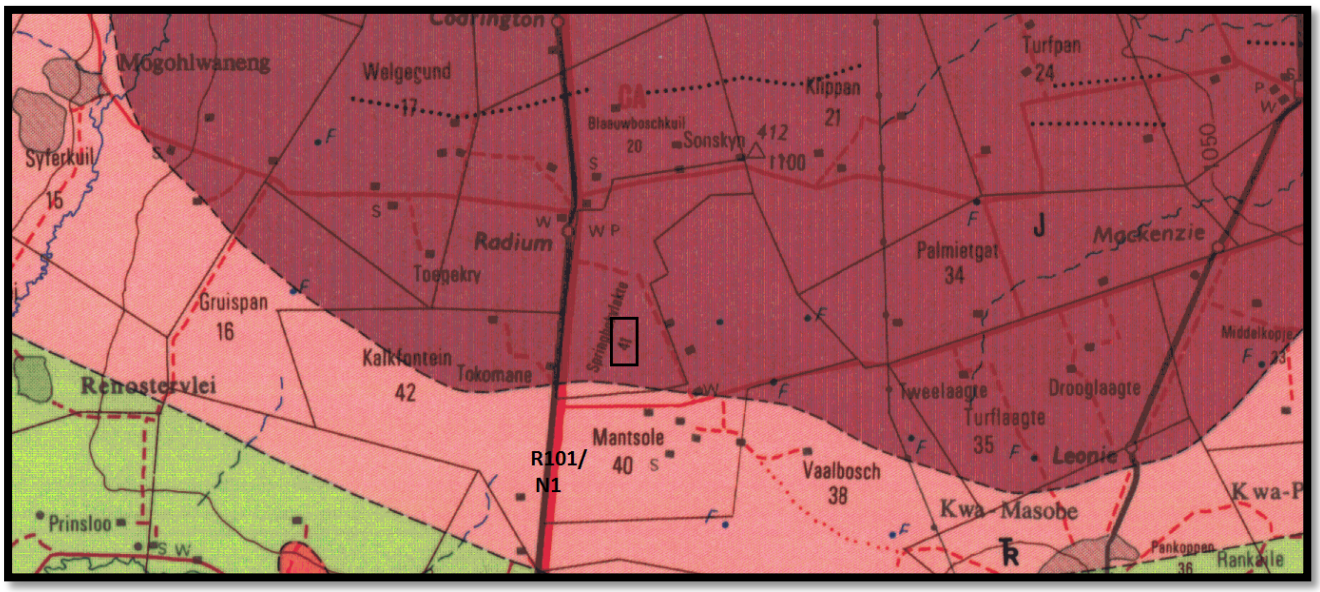
Management Plan and Protocol for a Chance Fossil Find is included.

The applicant, Greenco Farm Produce (Pty) Ltd. intends to develop a poultry farm on Portion 35 of the Farm Springbokvlakte 41-JR near the small town of Bela Bela. A total area of 209,562 m^2 will be developed.

Recommendation

This letter serves as a Letter of Exemption. It is in compliance with The Minimum Standards for Palaeontological Components of Heritage Impact Assessment Reports, SAHRA APMHOB, Guidelines 2012. The development is underlain by volcanic rocks and sandstone of the Letaba Formation, Karoo Supergroup. It has a Low Palaeontological Sensitivity, therefore there is a low possibility that significant fossils will be present in the bedrock of these geological units. The rock units are associated with intrusive igneous activities and no life would have been possible during implacement of the rocks (Groenewald and Groenewald 2014*).

Geology of area (1:250 000 Pretoria 2528 Walrafen 1978)



Legend to Map and short Explanation:
J – Volcanic rocks, sandstone (purple), Letaba Formation, Karoo Supergroup. Middle-Jurassic in age.
TR – Fine-grained sandstone (pink), Clarens Formation, Karoo Supergroup. Triassic.
□ – Approximate position of development.

The Letaba Formation consists mainly of dark coloured basalt. It is 177 ± 9 million years old and attains a thickness of 3 600 m. (Visser 1989). It is the lower basalt unit named after the Letaba River (Kent 1980) and is responsible for the heavy dark soil seen in open ploughed lands (Norman and Whitfield 2006).

Google.earth image (Dube)

*Groenewald, G. and Groenewald, D., 2014. SAHRA Palaeotechnical Report: Palaeontological Heritage of the Limpopo Province, South African Heritage Resources Agency.

KAROO DOLERITE (Jd)			Dolerite (Jd)		Dolerite intrusions Early Jurassic 183 2 Ma	No fossils recorded	Karroo-Ferrar igneous intrusions associated with Early Jurassic global mass extinction event
LEBOMBO			Josini (Jj) Letaba Sabi River (Jj; Jl; Jle)		Up to 13 km of volcanic rocks (basic and acid lavas) and rare interbedded sandstones. Early Jurassic 183 2 Ma	Fossils might occur within thin sedimentary intervals (e.g. plants, traces, bones)	

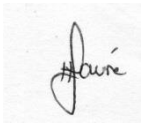
Declaration (disclaimer)

I, Heidi Fourie, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed development project for which I was appointed to do a palaeontological assessment. There are no circumstances that compromise the objectivity of me performing such work.

I accept no liability, and the client, by receiving this document, indemnifies me against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with services rendered, directly or indirectly by the use of the information contained in this document.

It may be possible that the Exemption Letter may have missed palaeontological resources in the project area as outcrops are not always present or visible on geological maps while others may lie below the overburden of earth and may only be present once development commences.

This report may not be altered in any way and any parts drawn from this report must make reference to this letter.



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Protocol for Chance Finds and Management plan

This section covers the recommended protocol for a Phase 2 Mitigation process as well as for reports where the Palaeontological Sensitivity is **LOW;** this process guides the palaeontologist / palaeobotanist / ECO on site and should not be attempted by the layman / developer. As part of the Environmental Authorisation conditions, an Environmental Control Officer (ECO) will be appointed to oversee the construction activities in line with the legally binding Environmental Management Programme (EMPr) so that when a fossil is unearthed they can notify the relevant department and specialist to further investigate. The ECO should familiarise him- or herself with the applicable formations and its fossils. The Evolutionary Studies Institute, University of the Witwatersrand and Ditsong: National Museum of Natural History, Pretoria have good examples of fossils.

The EMPr already covers the conservation of heritage and palaeontological material that may be exposed during construction activities. For a chance fossil find, the protocol is to cease all construction activities, construct a 30 m no-go barrier, and contact SAHRA for further investigation. It is recommended that the EMPr be updated to include the involvement of a palaeontologist when necessary.

The developer must survey the areas affected by the development and then indicate on plan where the construction / development / mining will take place. Trenches have to be dug to ascertain how deep the sediments are above the bedrock (can be a few hundred metres). This will give an indication of the depth of the topsoil, subsoil, and overburden, if need be trenches should be dug deeper to expose the interburden.

Mitigation will involve recording, rescue and judicious sampling of the fossil material present in the layers sandwiched between the geological / coal layers. It must include information on number of taxa, fossil abundance, preservational style, and taphonomy. This can only be done during excavations. In order for this to happen, in case of mining operations, the process will have to be closely scrutinised by a professional palaeontologist / palaeobotanist to ensure that only the coal layers are mined and the interlayers (siltstone and mudstone) are surveyed for fossils or representative sampling of fossils are taking place.

The palaeontological impact assessment process presents an opportunity for identification, access and possibly salvage of fossils and add to the few good localities. Mitigation can provide valuable onsite research that can benefit both the community and the palaeontological fraternity.

A Phase 2 study is very often the last opportunity we will ever have to record the fossil heritage within the development area. Fossils excavated will be stored at a National Repository.