Palaeontological Heritage Impact Assessment for Arlington Multiple-use Development project

Prepared for: JG Afrika

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[redacted]

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General Declaration

I, Dr Rob Gess, declare that –

- I act as the independent Specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not;
- all the particulars furnished by me in this form are true and correct;
- I will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realize that a false declaration is an offence and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Amendments to Environmental Impact Assessment Regulations, 2014 as amended.

Legislative Background

The National Heritage Act (Act 25 of 1999) safeguards all heritage resources. As per Sections 35 and 38 of the Act, any palaeontological report is a part of the Heritage Impact Assessment. Section 35 is concerned with the protection of archaeological, palaeontological, and meteorite resources found in South Africa, except for fossils that originate outside of the country.

(1) the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority.
(2) all archaeological objects, palaeontological material and meteorites are the property of the State. (3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
(4) No person may, without a permit issued by the responsible heritage resources authority –
(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
(5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may –
(a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
(b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
(c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
(d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.
(6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or a meteorite is situated, serve a notice on the

owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

According to Section 38 (1), a Heritage Impact Assessment is necessary to assess any potential impacts on palaeontological heritage within the development footprint where:

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
(b) the construction of a bridge or similar structure exceeding 50 m in length;
(c) any development or other activity which will change the character of a site—
i. exceeding 5 000 m2 in extent; or
ii. involving three or more existing erven or subdivisions thereof; or
iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or
iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority,
v. the re-zoning of a site exceeding 10 000 m² in extent;
vi. or any other category of development provided for in regulations by SAHRA or a Provincial heritage resources authority.

Contents:

Background

It is intended to redevelop the former Arlington race track in Gqeberha into a mixed use development including housing and other amenities. JG Africa have been asked to carry out a full Environmental Impact Assessment for the development. They in turn subcontracted Rob Gess Consulting to conduct a Palaeontological Impact Assessment.

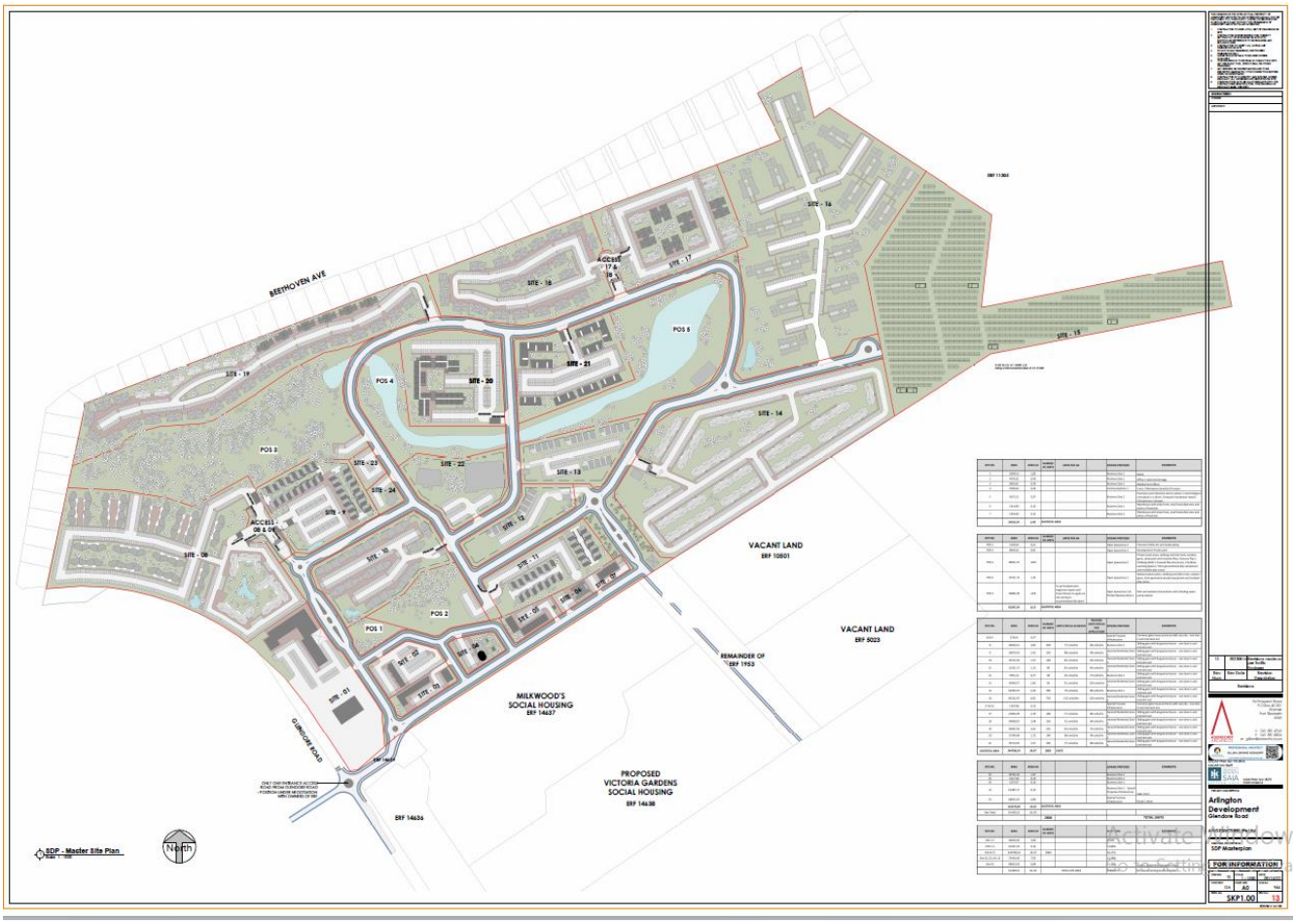

Figure 1: Planned layout of proposed Arlington mixed use development.

Geology and Palaeontology

According to geological survey maps the area is underlain by late Pliocene to Early Pleistocene aeolian deposits of the **Nanaga Formation (Algoa Group)**. These represent ancient (+/- 3- 1.5 million year old) coastal sand dunes which display large scale internal cross bedding and are variably consolidated, often comprising sandstones and sandy limestones.

These are overlain, in the south western portion of the area by unconsolidated later aeolian deposits.

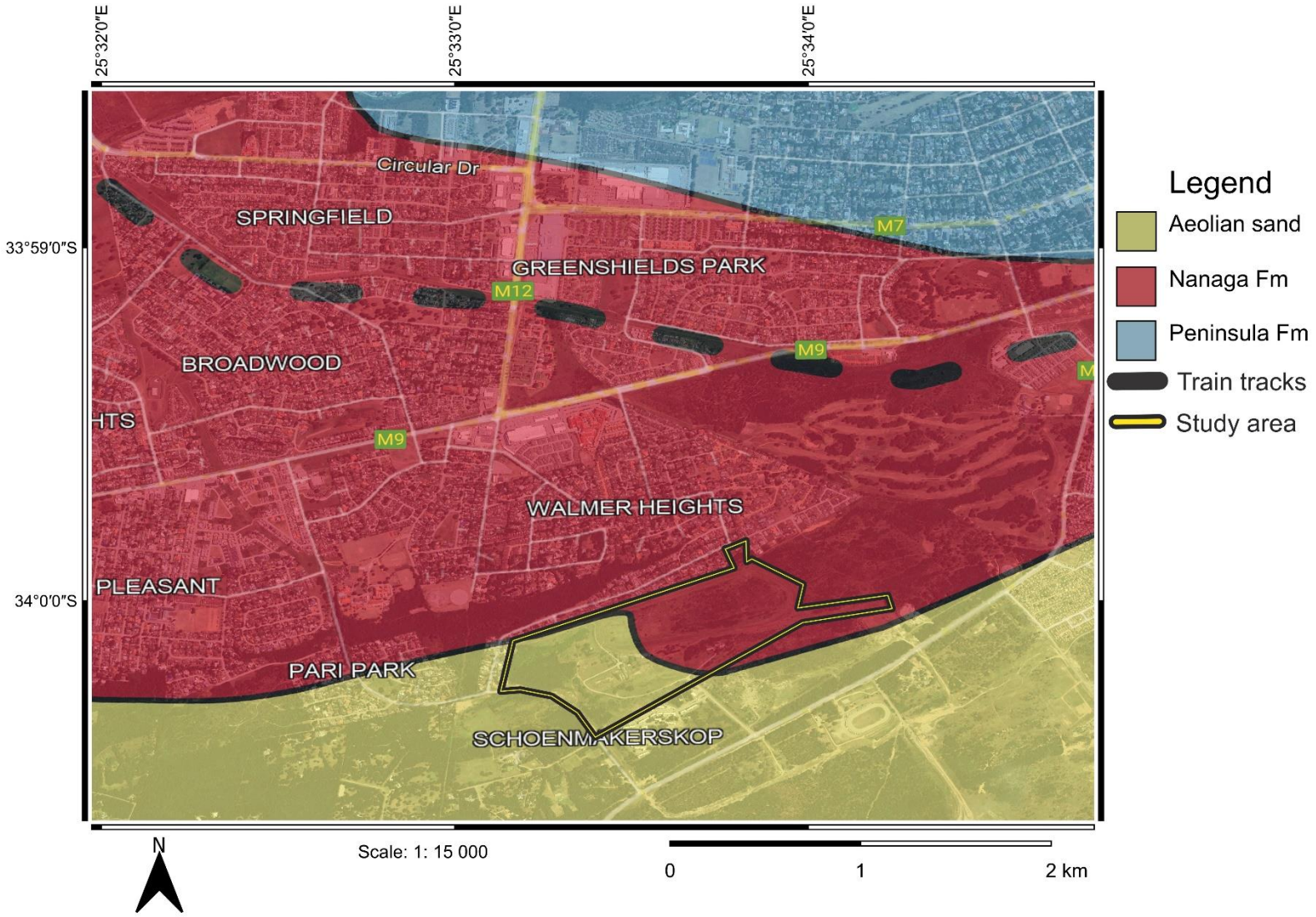

Figure 2: Extract of Council for Geosciences map showing a portion of Gqeberha, with the proposed Arlington development area outlined in yellow and black. Notably field assessment suggests a slightly more southerly western boundary of the Nanaga Formation.

Nanaga Formation strata at times contain rhizocretes and remains of land gastropods including *Achatina*, *Tropidophora*, *Trigonephris* and *Natalina*. More importantly the possibility also exists that terrestrial vertebrate remains could be recovered from these strata, as isolated occurrences or accumulations made by hyaenas or humans.
The overlying unconsolidated sands also potentially contain both terrestrial mollusc remains and records of ancient mammal faunas, either as isolated occurrences, accumulated by haenas or associated with middens accumulated by human activity.

Site visit

The site was visited and surveyed by Rob Gess Consulting on 3rd of February 2022. It was established that almost the entire property was highly disturbed and much of it had previously been landscaped to form an equine racecourse, with a stadium and betting offices on a raised berm overlooking the race track. The area is extensively vegetated, with very little outcrop visible at surface. Bush cover towards the western side of the property was impenetrable, precluding survey. Limited outcrop was located in the west of the area including outcrop consistent with the Nanaga Formation, rich in rhizocretes and the shells a number of terrestrial snail species.

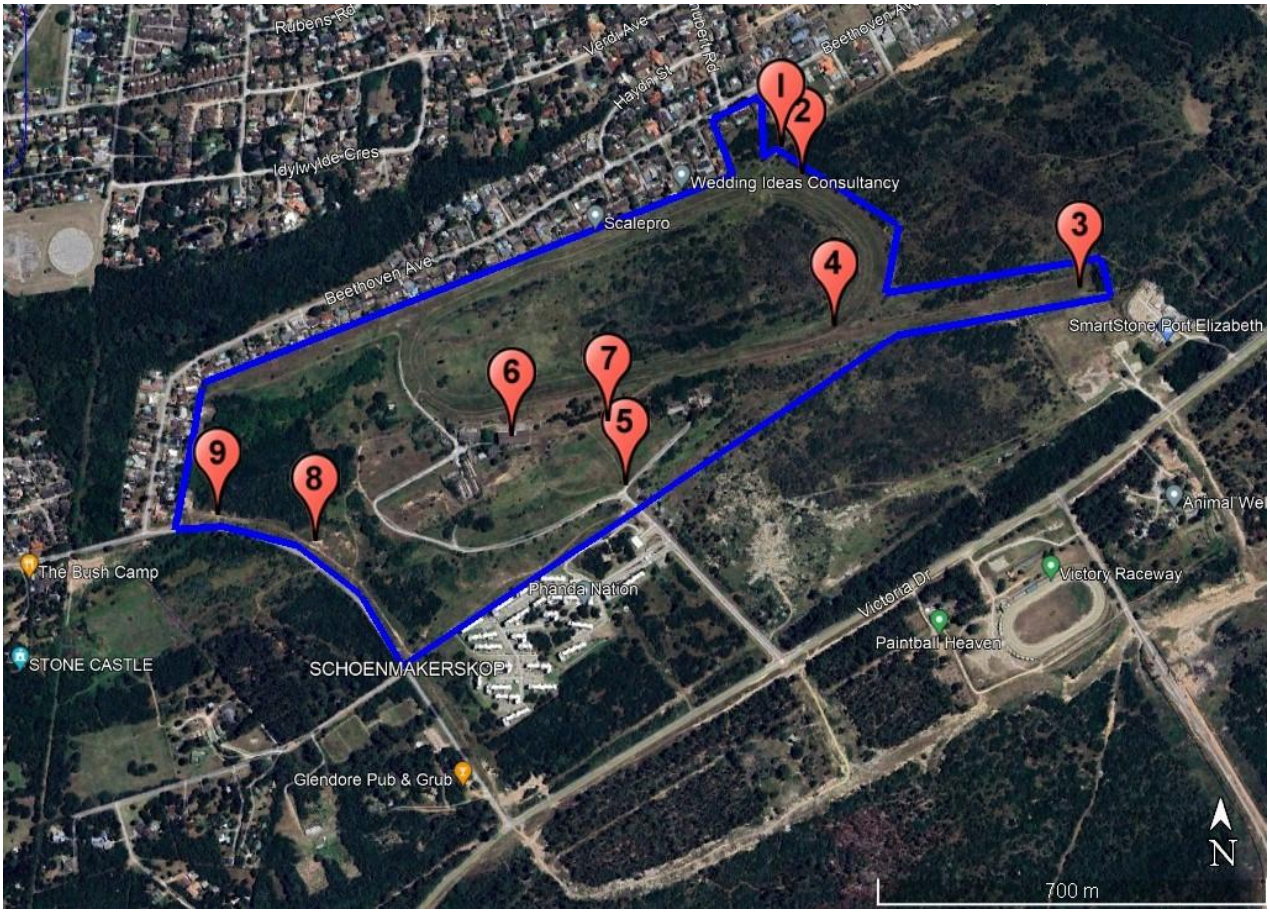

Figure 3: Satellite image of Arlington developmental area (outlined in blue) with numbered points from which subsequent photos were taken.

Figure 4: Panoramic view of the former racetrack, looking north from the stadium at point 6.

Figure 5: View west south west, along the former race track from point 2.

Figure 6: View south east from point 2.

Figure 7: View west from point 3.

Figure 8: View west from point 4.

Figure 9: View south west from point 7.

Figure 10: View north west from point 5.

Figure 11: View north east from point 9 showing impenetrable cover of bush in the west of the proposed developmental area.

Figure 12: Loose aeolian sand exposed along a trackin the east of the developmental area, looking westwards from point 1.

Figure 13: Largely unconsolidated sand containing small rhizoliths and terrestrial gastropods exposed in bank at point 8.

Figure 14: Assorted terrestrial gastropods in sandy bank at point 8, including partial *Achatina* at bottom.

Figure 15: Semi consolidated sand, rich in rhizoliths (root casts) consistent with the Nanaga Formation, exposed at point 9.

Conclusions and Recommendations.

The area was surveyed and it was established that it had previously been highly disturbed, with most of the area having been artificially landscaped to produce an equine racetrack and associated spectator area. In addition most of the area was vegetated, with the least disturbed western portion of the area being mantled by impenetrably thick vegetation. As a result natural exposure of underlying strata was minimal.

Small amounts of outcrop in the extreme west of the area include semi consolidated aeolianites consistent with the Nanaga Formation. These aeolianites were, in places, rich in rhizocretes (calcareous root moulds), with a number of terrestrial gastropod species represented by preserved shells. These findings are, however of extremely low palaeontological significance.

There remains the possibility that construction work during development may disturb large vertebrate (eg. mammal) bones, either as isolated occurrences or accumulations made by humans or hyaenas. Should this occur, excavators should be diverted to other areas and a palaeontologist should be informed to assess the occurrence for possible sampling.

References

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