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Marion.bamford@wits.ac.za
12 April 2025

Heritage Western Cape
CEO: Mr Michael Janse van Rensburg
Private Bag X9067, Cape Town, 8000
3rd Floor, Protea Assurance Building,
Greenmarket Square, Cape Town, 8001

Dear Sir

RE: Request for Exemption of any Palaeontological Impact Assessment for the proposed upgrade of the raw water abstraction works and pump station, Moordkuil River, Portion 15, 24 and 25 of the Farm Klipheuvel, and Camp Sites, Mossel Bay, Western Cape Province

In my capacity as a professional palaeontologist, I am requesting exemption for palaeontological impact assessment in terms of the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) which requires that the proposed development must be preceded by the relevant impact assessment, in this case for palaeontology.

Project Description:
Sharples Environmental Services cc (SES) has been appointed as the independent Environmental Assessment Practitioner (EAP) to conduct the Environmental Impact Assessment process for the proposed upgrade of the raw water abstraction works and pump station, Moordkuil River, Portion 15, 24 and 25 of the farm Klipheuvel, Mossel Bay. The proposed development site is at the existing raw water abstraction works and pump station (been in operation since 1980), on the Moordkuil River bank located in Mossel Bay in the Western Cape Province. Currently access to the site can be obtained from the N2 National Road, onto Blesbok Road and then via an existing gravel road to the site (Figs 1-2).

Figure 1: Google Earth site map for the Moordkuil River pump station upgrade and two sites for the proposed camp site.

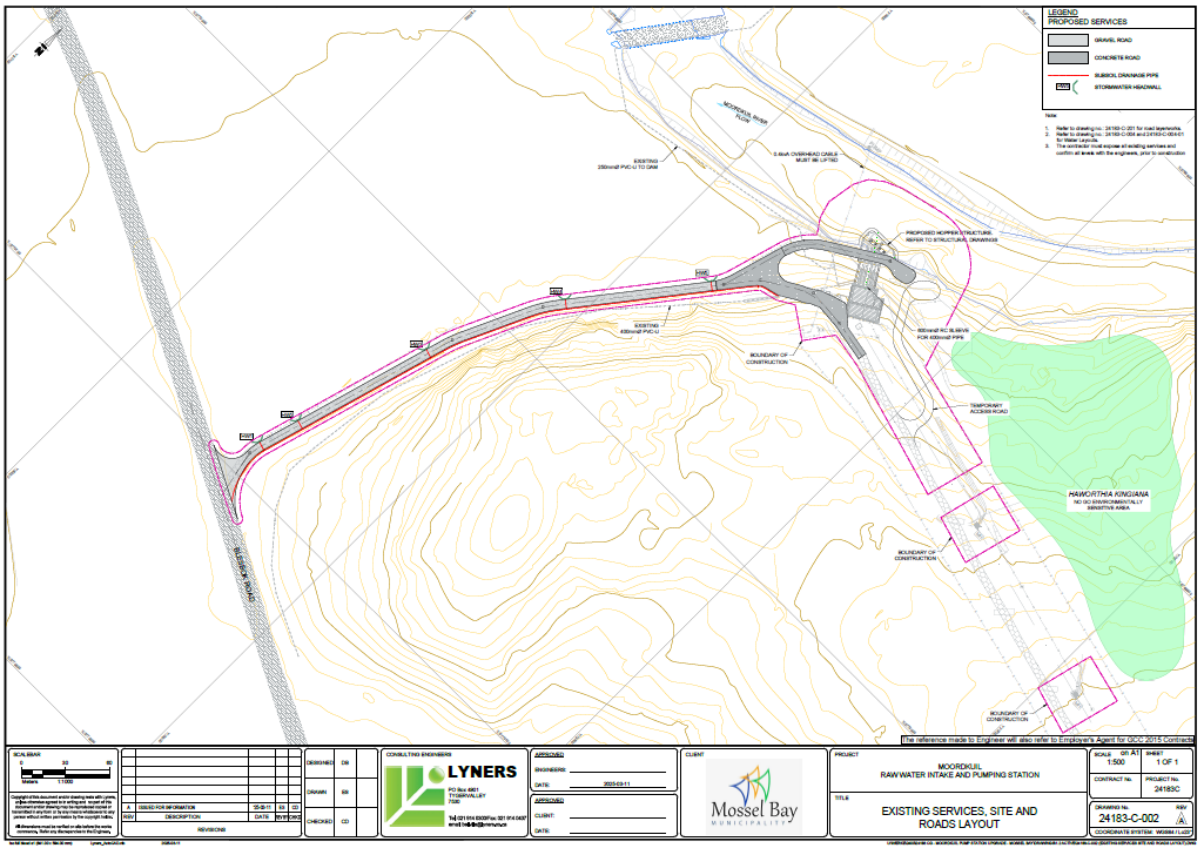

Figure 2: Existing service site and roads.

Geology and Palaeontology

The project lies in the southwestern coastal margin of South Africa where the basal Kaaimans Group granites are unconformably overlain by the Cape Supergroup, Uitenhage Group and Quaternary sands (Fig. 3; Gesse et al., 2006; Shone, 2006; Roberts et al., 2006; respectively).

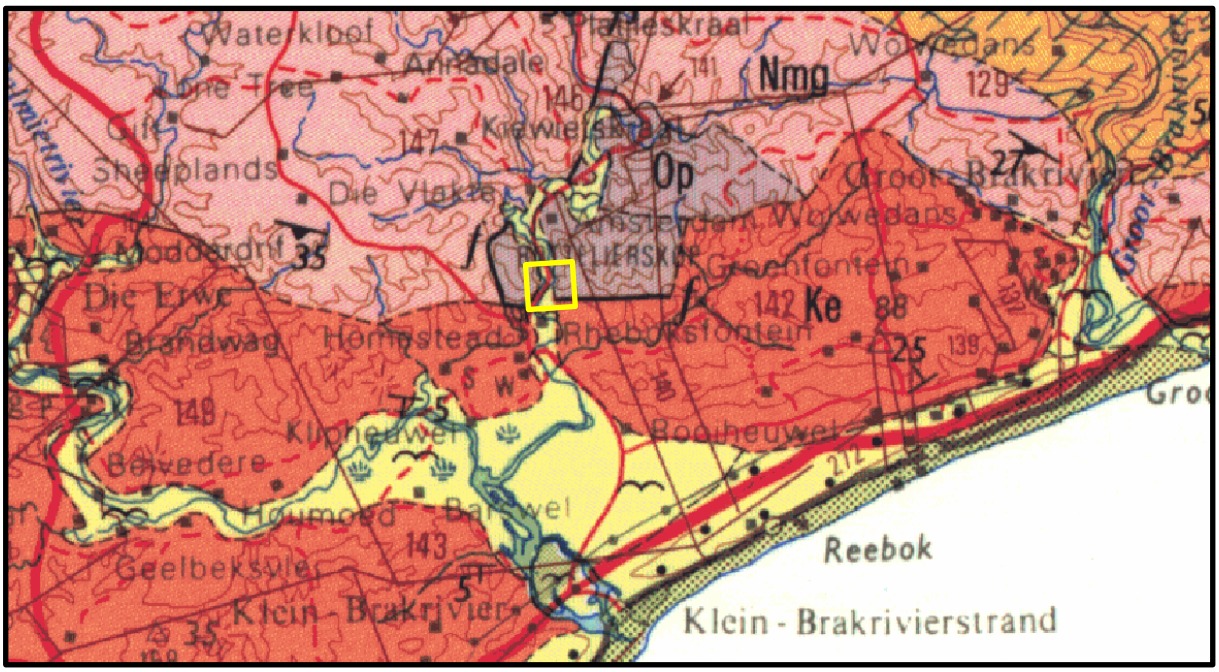

Figure 3: Geological map of the area around the Moordkuil River Pump Station. The location of the proposed project is indicated within the yellow polygon. Abbreviations of the rock types are in Table 1 below. Map enlarged from the Geological Survey 1: 250 000 map 3322 Oudtshoorn.

Table 1: List of abbreviations used on the geology map

Symbol	Group/Formation	Lithology	Approximate Age
Q	Quaternary	Alluvium, sand, calcrete	Quaternary Ca 1.0 Ma to present
Ke	Enon Formation, Uitenhage Group	Conglomerate, sand, sandstone	Early Cretaceous and younger
Op	Peninsular Fm, Table Mountain Group, Cape SG	Quartzite,	Ordovician
Nmg	Kaaimans Group	Gneissic granite, granodiorite	Neoproterozoic to Early Cambrian
Nk	Homtini Fm, Kaaimans Group	Phyllite, feldspathic grit, quartzite	Neoproterozoic to Early Cambrian

Palaeosensitivity and Recommendation

The **Moordkuil River Pumpstation** project lies entirely on the Quaternary sands and alluvium along the river valley that is indicated as moderately sensitive (yellow in Fig 4; green in Fig 6). The area is highly disturbed from agriculture and present thick vegetation so it is very unlikely that any transported Quaternary fossils occur there. In addition, any fossil material would be fragmented and unidentifiable, plus it would be out of primary context. The true palaeosensitivity should be low.

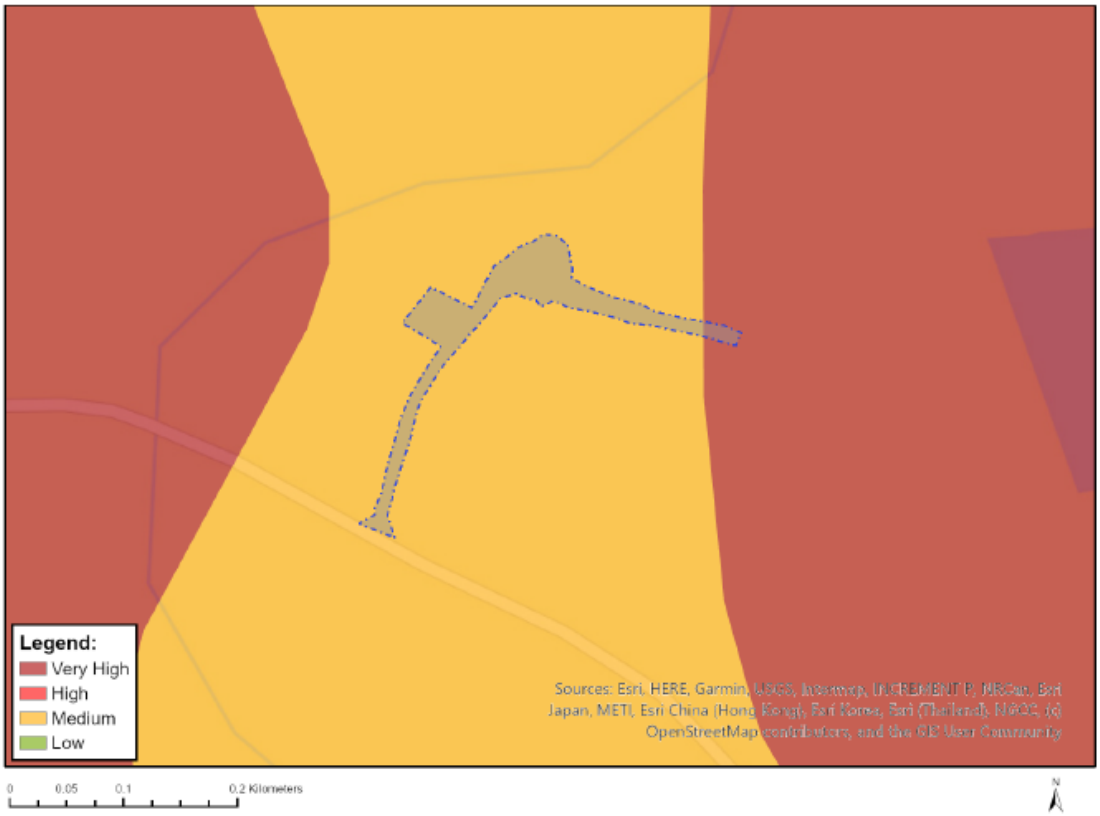

Figure 4: DFFE screening map for palaeosensitivity for the upgrade of the Moordkuil River Pump.

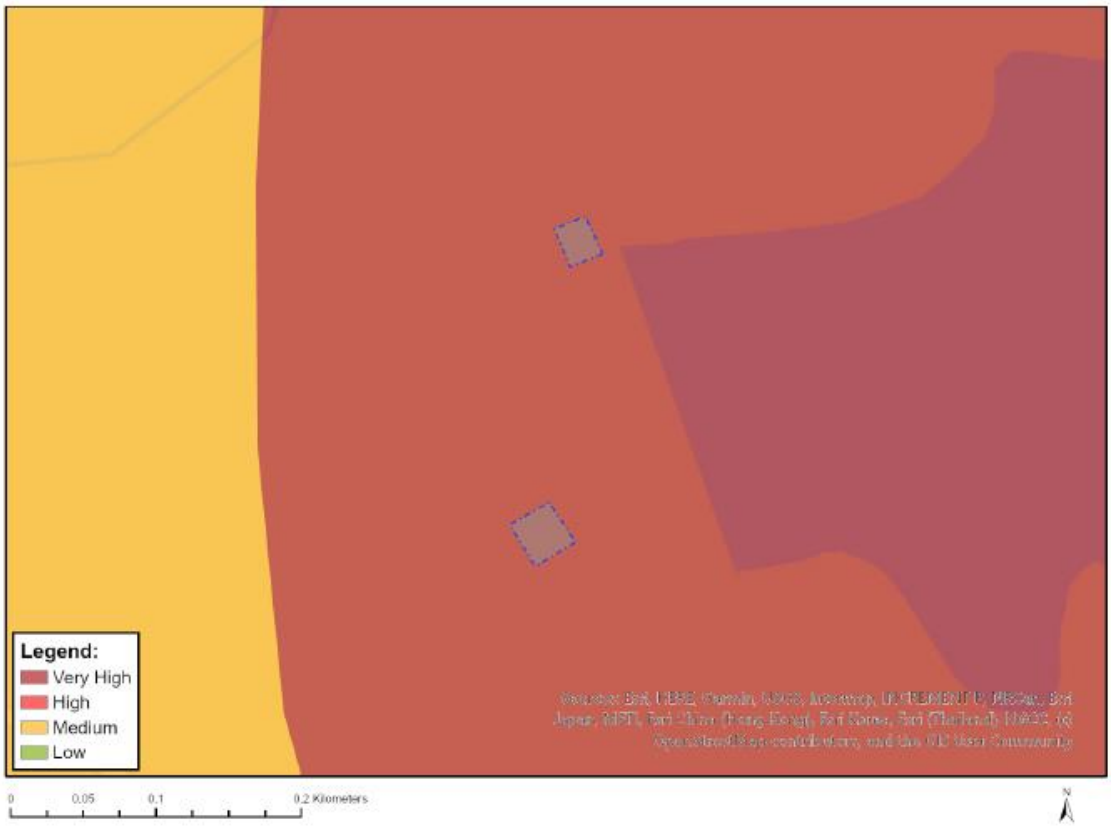

Figure 5: DFFE screening map for the two alternative camp sites.

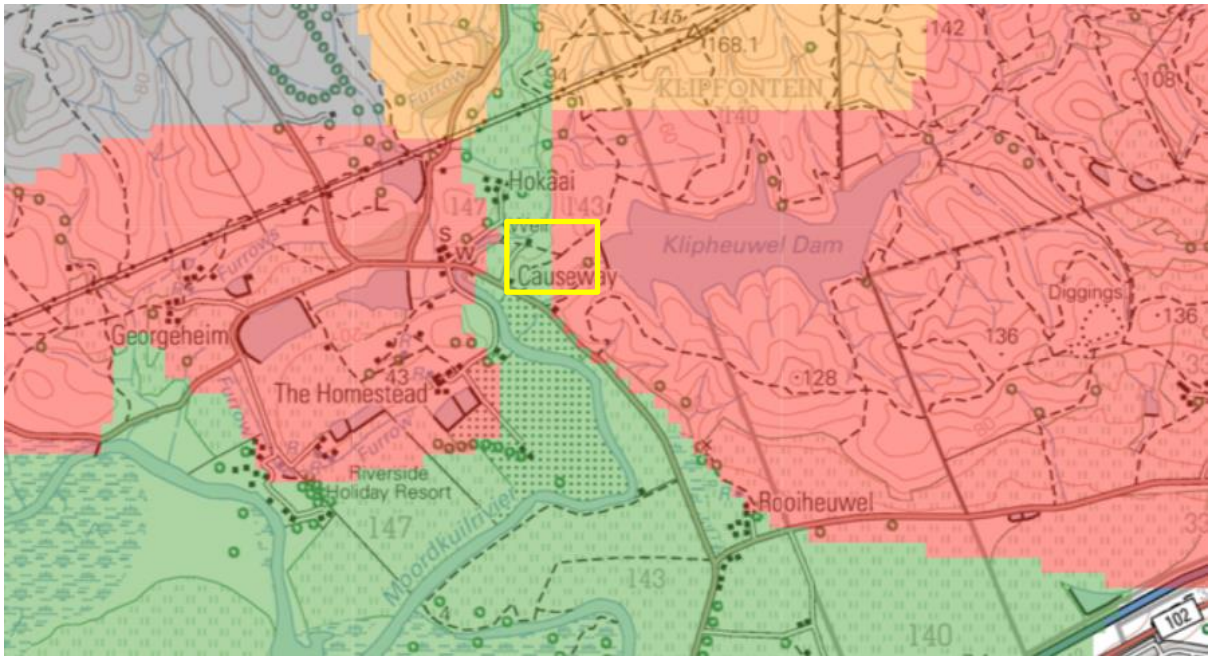

Figure 6: SAHRIS palaeosensitivity map for the site for the proposed …… within the yellow rectangle. Background colours indicate the following degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero.

Both proposed sites for the **camp site** are on the Enon Formation and indicated as very highly sensitive (red; Figs 5-6). This palaeosensitivity is also contested because the Enon Formation is a conglomerate with boulders, pebbles and sands and is a "dump" for such sediments that were deposited from the Cretaceous to the Tertiary which means there are no fossils that could assist with the dating. Furthermore, both sites are also highly disturbed from previous agriculture and clearing.

Since there is no chance of fossils of any importance occurring in the project footprint, we request exemption from any further palaeontological impact assessment. As far as the palaeontology is concerned there is no preferred site for the camp site.

Yours faithfully

Prof Marion Bamford
Palaeobotanist; PhD (Wits 1990)

References cited:

Gresse, P.G., von Veh, M.W., Frimmel, H.E., 2006. Namibian (Neoproterozoic) to Early Cambrian Successions. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 395-420.

Roberts, D.L., Botha, G.A., Maud, R.R., Pether, J., 2006. Coastal Cenozoic deposits. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 605-628.

Shone, R.W., 2006. Onshore post-Karoo Mesozoic deposits. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. Pp 541-552.

Palaeosensitivity map:
https://sahris.sahra.org.za/map/palaeo

Fossil Chance Find Protocol

Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.

1. The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence.
2. When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone or coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
3. Photographs of similar fossils can be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones. This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a HWC permit must be obtained. Annual reports must be submitted to HWC as required by the relevant permits.
7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to HWC once the project has been completed and only if there are fossils.

8. If no fossils are found and the excavations have finished then no further monitoring is required.

Declaration of Independence

This letter has been compiled by Professor Marion Bamford, of the University of the Witwatersrand, sub-contracted by ACRM, South Africa. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision making process for the Project.

Specialist: Prof Marion Bamford

Signature: