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10 April 2025

Dr Ragna Redelstorff
Heritage Officer Archaeology, Palaeontology & Meteorites Unit
South African Heritage Resources Agency
111 Harrington Street
Cape Town 8001

Dear Dr Redelstorff

RE: Request for Exemption of any Palaeontological Impact Assessment for the proposed Rustenburg Platinum Mines (RPM) upgrade of the Mortimer Smelter, west of Northam, North West - Limpopo 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:

Rustenburg Platinum Mines Limited (RPM) owns and operates three smelting complexes in South Africa, namely Polokwane, Mortimer and Waterval. This project relates to the Mortimer Smelter situated in the North-West Province.

The Mortimer Smelter is an existing metallurgical industrial furnace where sulphide ores are smelted. Wet concentrate from the Concentrator is received and dried in flash dryers. The dry concentrate is smelted in an electric furnace, resulting in the recovery of platinum group metals (PGMs) and other base metals. The product of the smelting process (referred to as 'matte') is then tapped from the furnace, cast and crushed. The resulting furnace slag is currently stockpiled.

The off gas from the process currently passes through an electrostatic precipitator (ESP) where the dust is removed prior to gas being vented into the atmosphere via a stack at 80m above the ground. The constituents in the emissions include particulate matter (PM), SO_2 and nitrogen oxide (NOx).

In line with the National Environmental Management: Air Quality Act 39 of 2004 (NEM: AQA) and the requirement to reduce emissions, RPM committed to construct and operate an SO_2 Abatement Plant at the Mortimer Smelter.

RPM: Mortimer Smelter obtained Environmental Authorisation (EA), via an Amendment of the Existing Environmental Management Programme Report (EMPr) (Reference NW30/5/1/2/3/2/1/366EM) on 12 March 2018 from the Department of Mineral Resources and Energy (DMRE) for the Proposed Installation of Sulphur Dioxide Abatement Plant at Mortimer Smelter.

RPM re-categorised / restricted the RPM: Union Section in 2017 and divested certain of its operations that were no longer considered to be "core" to the greater business considering its long-term goals. As such RPM: Union Section carved-out all Mines, Shafts and Concentrators and only retained the Mortimer Smelter. Due to this change the DMRE is no longer the competent authority and the North West Department of Economic Development, Environment, Conservation and Tourism (NWDEDECT) took over this responsibility.

CURRENT OPERATIONS

The Mortimer Smelter is one of AAP's three primary smelters in South Africa. It is understood that the Mortimer Smelter is under care and maintenance and is not currently operational. When operational, the site operates a single primary smelting furnace, which was upgraded to 38 MW in 2011. The wet concentrate from the AAP concentrators and third parties in the area is delivered to the Mortimer Smelter where it is dried in a 54 wet ton per hour (nominal at 16% moisture) flash dryer to produce the feed material. The furnace produces slag and matte products. The slag is granulated with high pressure water, dewatered in rake classifiers and sent to the slag mill for further processing. Slag that cannot be utilised is deposited onto an intermediate slag stockpile. The matte is cast into silica sand pits for cooling, after which it is crushed and transported to the Anglo Converter Plant for further processing.

PROPOSED OPERATIONS

The Slag Cleaning Furnace (SCF) at Waterval Smelter provides a critical function for recovery of Platinum Group Metals and base metals from the Anglo Converter Plant converter slag (WACS). The SCF capacity has been constrained for many years and will continue to be under capacity pressure, despite a full furnace rebuild that was completed in 2023.

Historically, deficits in slag cleaning capacity have given rise to excess WACS stockpiles containing significant PGM's. Crude milling and flotation campaigns of the excess WACS have been carried out for recovery of some metal to a concentrate, however, this resulted in a large WACS tailings (WACSt) stockpile at Waterval Smelter and also displaced significant quantities of mixed six-in-line and SCF slag also requiring stockpiling. The WACS flotation allows for substantial values of Platinum Group Metals

and limited base metal sulphides to be recovered, however, base metal oxide recoveries are poor. The WACS and WACSt stockpiles contain significant quantities of base and precious metals, and it is important for overall smelting recoveries that there is sufficient slag cleaning capacity to process all the WACS and WACSt. Based on the requirements for reprocessing stockpiles and new WACS arisings, AAP are proposing an Additional Slag Cleaning (ASC) Project be constructed at the Mortimer Smelter to de-risk the metal flow processing circuit.

An associated SO_2 abatement plant is also proposed, which is required for the converted furnace to allow compliance of the SO_2 emissions with the National Environmental Management: Air Quality Act Minimum Emissions Standards when operating both in slag cleaning and primary smelting phases. Authorisation for the SO_2 abatement plant is already in place, however, the Project was halted due to Mortimer smelter going on care and maintenance.

The development will be located wihtin the existing Mortimer Smelter boundary, because the technology needs to be installed and connected to the existing gas cleaning equipment. As such, no site alternatives were considered.

LOCATION
Mortimer Smelter is located on the farm Turfbult 404 KQ in close proximity to the provincial boundary between the North West and Limpopo Provinces. It is located at the boundary between the Thabazimbi Local Municipality in the Limpopo Province and Moses Kotane Local Municipality in the North West Province. The mine areas are approximately 3 kilometres (km) to the north west of the Sifikile Village and 20 km west of Northam.

Geology and Palaeontology
The project lies entirely on the gabbro-norite Mai Zone of the of the Rustenburg Layered Suite (RLS) that is part of the Bushveld Igneous Complex (Fig. 2). The RLS intruded through the Transvaal Supergroup rocks about 2055 million years ago (Cawthorne et al., 2006; Zeh et al., 2020). All these rocks are igneous in origin and do not preserve any fossils at all. In addition, their emplacement predates the evolution of visible life-forms and only microbes were present in certain environments.

Figure 1: Aerial map for the

Figure 2: Aerial map of the Mortimer Smelter and associated infrastructure.

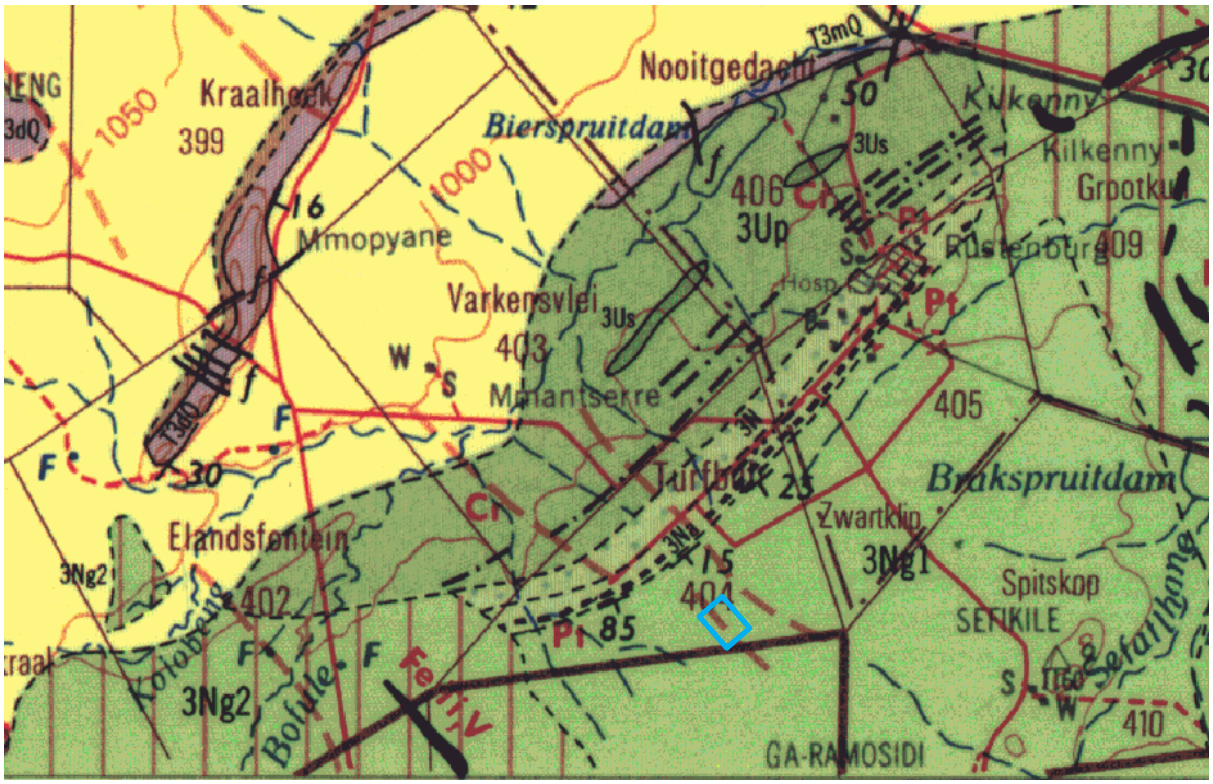

Figure 3: Geological map of the area around the Mortimer Smelter. The location of the proposed project is indicated within the blue polygon. Abbreviations of the rock types are in the table below. Map enlarged from the Geological Survey 1: 250 000 map 2426 Thabazimbi.

Table 1: List of abbreviations for the geology map.

Symbol	Group/Formation	Lithology	Approximate Age
Q	Quaternary	Alluvium, sand, calcrete	Quaternary Ca 1.0 Ma to present
Jd	Jurassic dykes	Dolerite dykes, intrusive	Jurassic, approx. 183 Ma
	Drakensberg Fm	Basalt	Early Jurassic
d	Diorite	Diorite, intrusive	Palaeoproterozoic Ca 2055 Ma
3Ng2	Upper Zone, Rustenburg Layered Suite, Bushveld Igneous Complex	Magnetite-gabbro	Palaeoproterozoic Ca 2055 Ma
3Ng1	Main Zone Gabbro-norite, Rustenburg Layered Suite, Bushveld Igneous Complex	Gabbro-norite	Palaeoproterozoic Ca 2055 Ma
3N	Main Zone Norite-anorthosite, Rustenburg Layered Suite, Bushveld Igneous Complex	Gabbro-Norite, -anorthosite	Palaeoproterozoic Ca 2055 Ma
3Up	Pyroxenite, Rustenburg Layered Suite, Bushveld Igneous Complex	Pyroxenite	Palaeoproterozoic Ca 2055 Ma

Palaeosensitivity and Recommendation

The Rustenburg Layered Suite is part of the Bushveld Igneous Complex that intruded through the Transvaal Supergroup rocks about 2055 million years ago (Cawthorne et al., 2006; Zeh et al., 2020). All these rocks are igneous in origin and do not preserve any fossils at all.

The insignificant to zero palaeosensitivity is confirmed by the grey colouration in the SAHRIS map (Fig. 4). Since there is no chance of fossils occurring tin the project footprint, we request exemption from any further palaeontological impact assessment

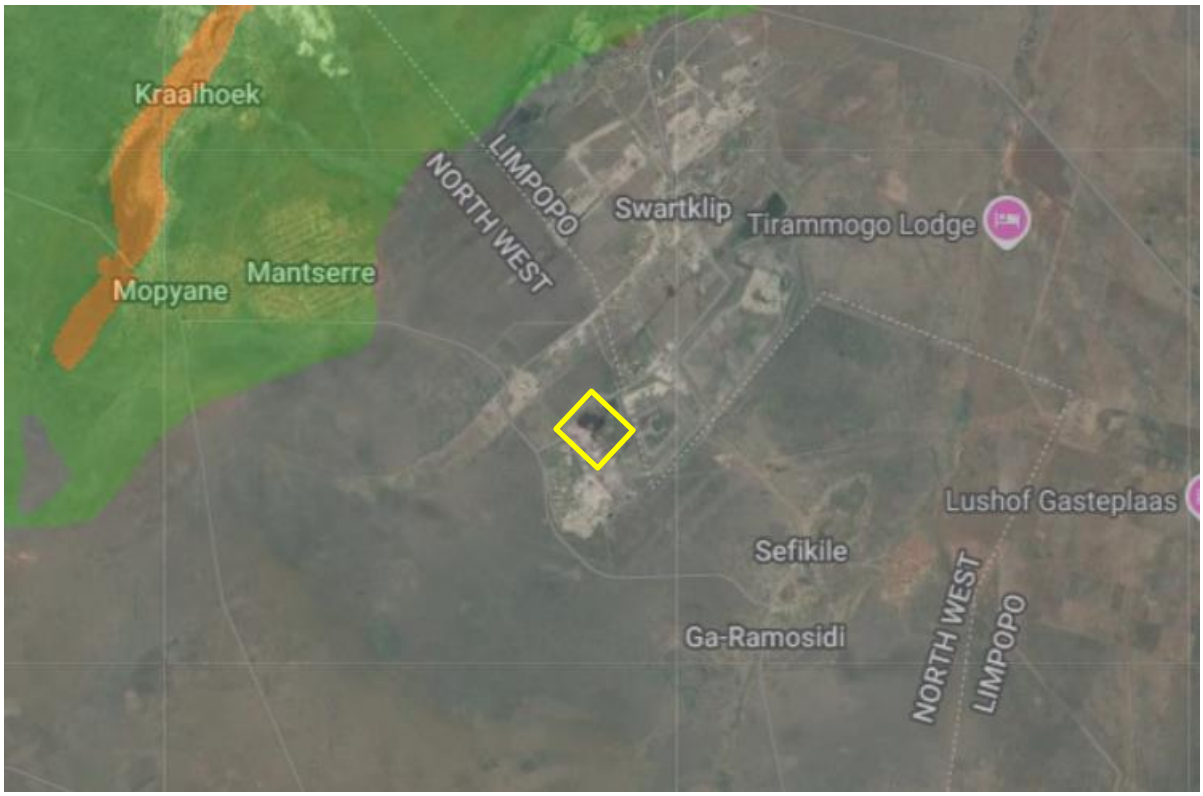

Figure 4: SAHRIS palaeosensitivity map for the site for the proposed Mortimer Smelter and infrastructure shown within the yellow polygon. Background colours indicate the following degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero.

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Yours faithfully

Prof Marion Bamford
Palaeobotanist; PhD (Wits 1990)

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

Declaration of Independence

This letter has been compiled by Professor Marion Bamford, of the University of the Witwatersrand, sub-contracted by WSP, 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: