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Mary Leslie
South African Heritage Resources Agency
111 Harrington Street
Cape Town
8000

Re: TEMPORARY EXPORT PERMIT No 80/05/11/011/52

Issued 25th November 2005
To Mike Raath for Lucinda Backwell

Dear Mary

Following the conditions stipulated in the temporary export permit, I report here on my activities and the return of the material to South Africa.

Twelve possible bone tools from Drimolen were temporarily exported to the University of Bordeaux for study using a profilometer. The aim was to compare the surface roughness (wear patterns) recorded on these specimens with the wear patterns recorded on bone tools from other early hominid sites, experimentally created tools, and bones modified by a variety of natural processes. Relevant non-human agents include geological processes and animals, for example wind abrasion, water erosion and porcupine gnawing. Lastly, fossils from the remainder of the assemblage were studied to establish whether the wear pattern represents an extreme of variation, recorded to a lesser degree on the remainder of the assemblage.

Scott, Ungar *et al.* (2005) recently published in *Nature* on australopithecine diet using a similar approach on teeth. We have found the interferometer to be a powerful tool for quantitative analysis of microscopic features, and see many applications for archaeology and palaeontology.

The fossil specimens were non-invasively analysed using a light beam WYKO NT 1100 interferometer. Vision 32 and SPIPS software was used to measure roughness and record other variables that enable quantification of the surface features.

All twelve fossils are safely in my office at Wits University, where they will remain for the duration of the study, now in its first year. We hope to submit a paper by the end of 2006. Copies will be lodged with SAHRA in due course. Thank you for facilitating this research.

With kind regards.

Lucinda Backwell.