

**NATURA VIVA cc**  
***Palaeontological Impact Assessments & Heritage Management,***  
***Natural History Education, Tourism, Research***

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**Date: 8 October 2009**

**RECOMMENDED EXEMPTION FROM  
PALAEOLOGICAL IMPACT STUDY**

**New cemetery, Calvinia  
(Hantam Municipality, Northern Cape)**

The proposed development footprint (c. 10 hectares) on the southern flank of the Hantamsberge some 2km to the west of Calvinia is underlain by Early Permian (c. 270 million year-old) sediments of the **Tierberg Formation** (Ecca Group). Apart from rare records of disarticulated microvertebrate remains (eg fish scales, teeth), plant debris (leaves, petrified wood of the *Glossopteris* Flora) and microbial mats, the commonest fossils within this by far are a range of non-marine (brackish / freshwater) trace fossils. These mainly comprise a variety of arthropod trackways, fish trails and invertebrate burrows (De Beer *et al.*, 2002, Almond 2008, Almond & Pether 2008). Large ribbed, strap-shaped burrows reported by Lichtenstein in 1803 from Tierberg mudrocks at Onder Downes near Calvinia represent some of the first records of fossils from southern Africa (MacRae 1999).

However, the proposed cemetery development is on a small scale (especially in view of the extensive outcrop area of the Tierberg Formation in the Calvinia area), and the bedrock excavations involved are shallow (less than 1m for the crematorium) and small (burials). The development is consequently considered *not* to pose a significant threat to palaeontological heritage, and in my view no further palaeontological impact studies are required.

Should fossil remains be encountered during development, however, the responsible ECO should inform SAHRA at the earliest opportunity to consider possible mitigation measures.

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## REFERENCES

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