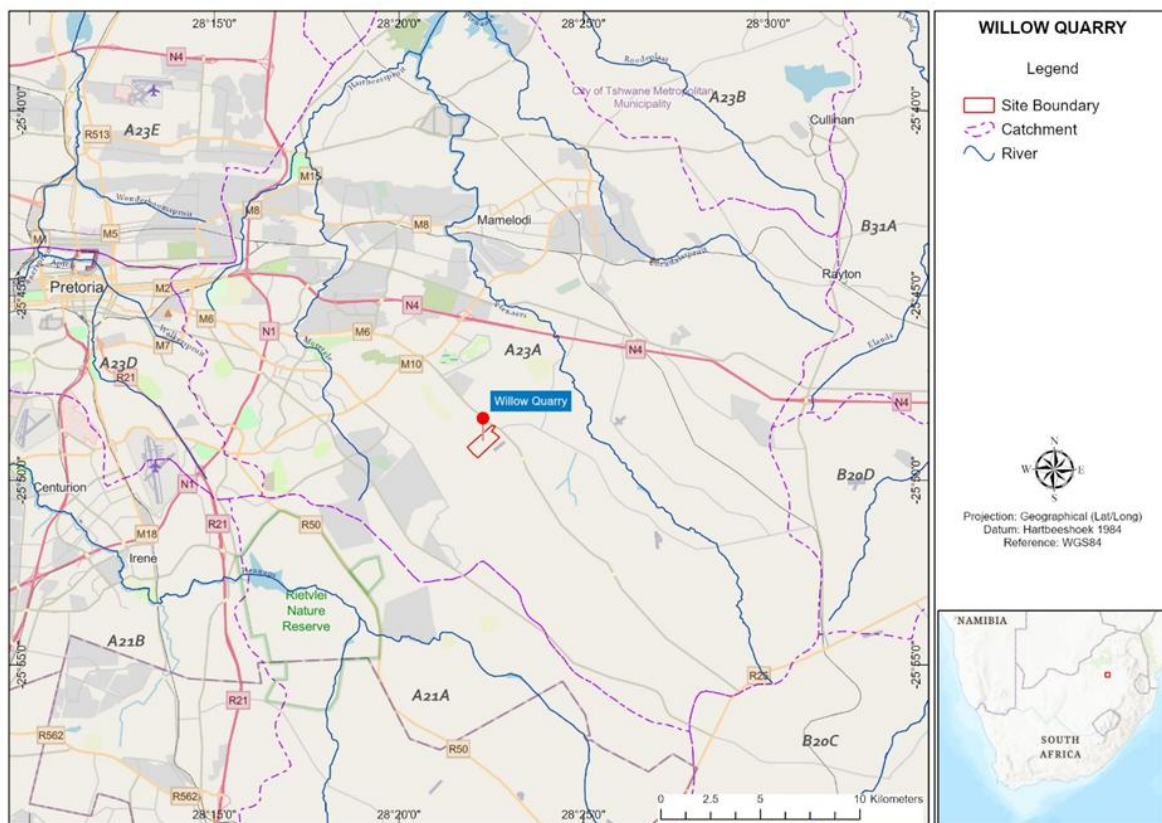


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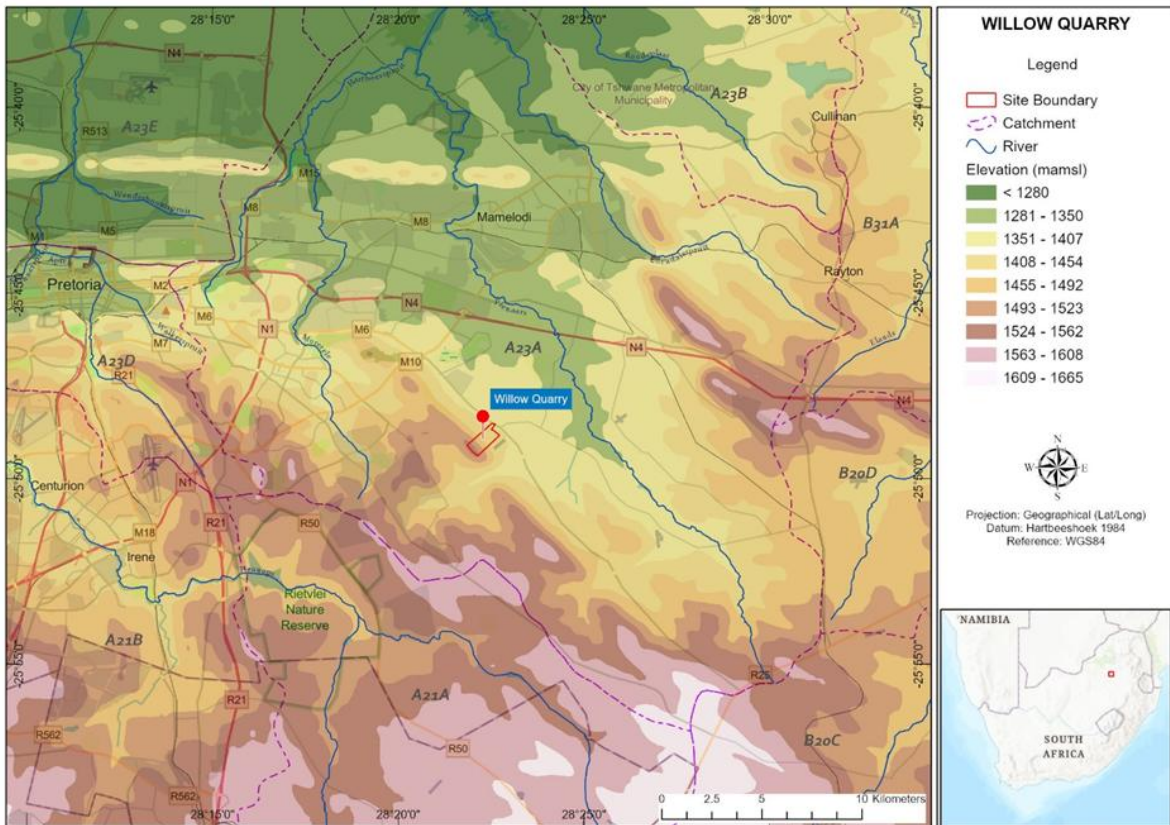
*Evaluating contaminant pathways in an altered vadose zone: A multidisciplinary approach in open-pit quarry environments*

Author(s): Yazeed van Wyk, Jacques Bodin, Kai Witthüser, Eunice Ubomba-Jaswa, Matthys Alois Dippenaar<sup>1\*</sup>, Mike Butler

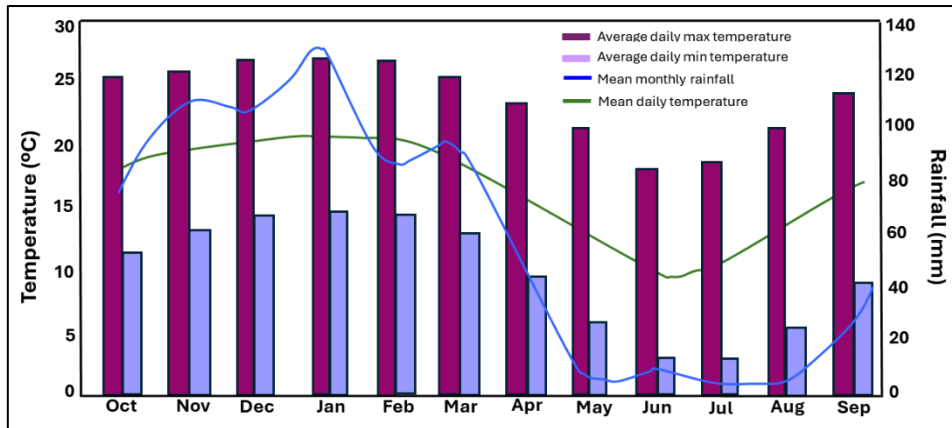
Correspondence to: Matthys Alois Dippenaar ([matthys.dippenaar@up.ac.za](mailto:matthys.dippenaar@up.ac.za) / [madippenaar@gmail.com](mailto:madippenaar@gmail.com))



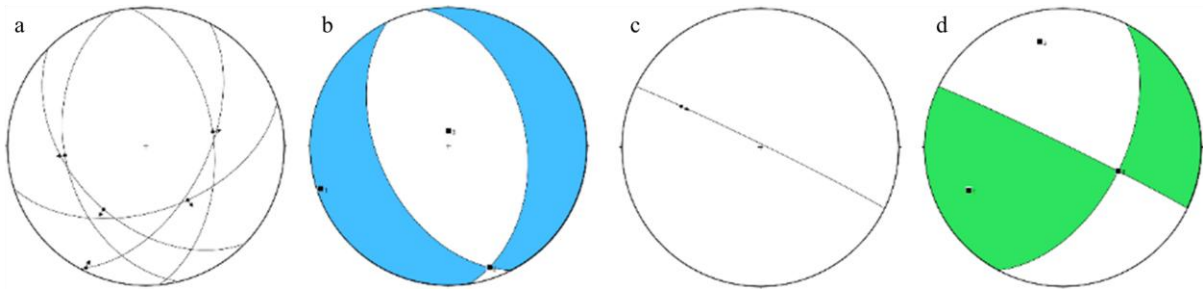
**Fig. S1** Study area location within the Crocodile West and Marico Water Management Area (WMA)



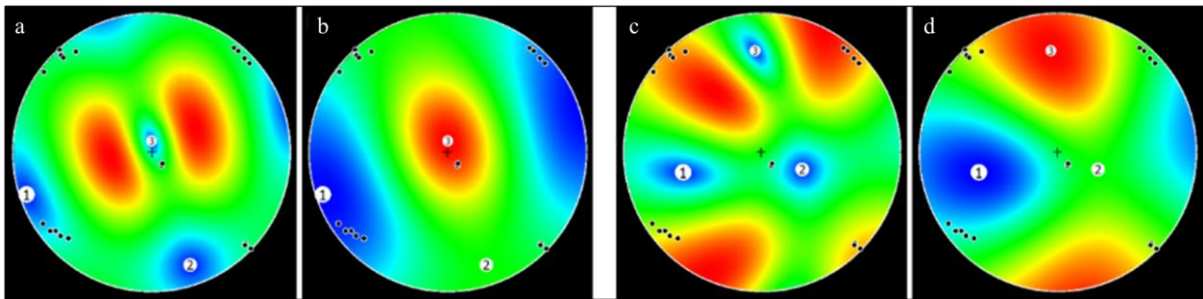
**Fig. S2** Map showing the regional surface drainage features, topography, and study area



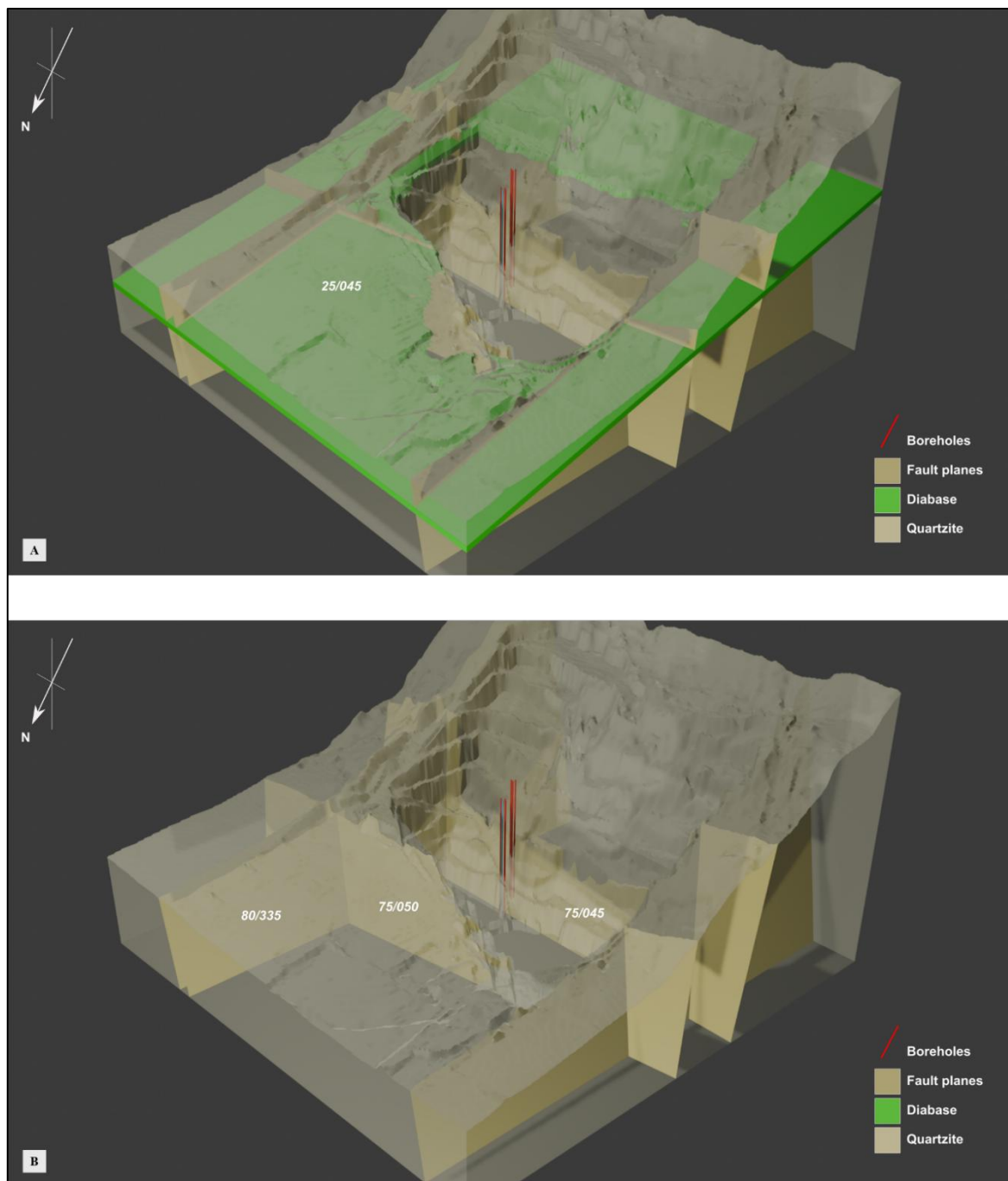
**Fig. S3** Climatogram generated from data recorded at the Irene Weather Station.



**Fig. S4** Present-day stress regimes as derived from earthquake focal mechanisms for normal and strike-slip faulting, a and c, respectively. Principal stress orientations for both faulting regimes are shown in (b) and (d), with beach ball diagrams representing  $\sigma_1$  (blue) and  $\sigma_3$  (green)



**Fig. S5** Slip and dilation tendency analyses for normal faulting and (c)(d) strike-slip faulting



**Fig. S6** Three-dimensional geological block model of the open-pit quarry showing diabase orientation, faults, and quartzite planes