

Air-FTG[®] Paleochannel Survey South Africa

An Air-FTG[®] survey was flown in the Ventersdorp area of South Africa for Etruscan Resources to search for buried paleochannels that are a source of diamonds. The Survey area is covered by Cretaceous and young unconsolidated sediments (gravels, laterites etc.). The sediments are underlain by dolomites that lie on top of a granitic basement. Diamondiferous gravels are in paleochannels that appear as long, narrow, generally N-S trending features, called "RUNS". Areas of channel thickening where diamonds accumulate are called "POTHOLES". Figure 1 shows an outcrop of a paleochannel.

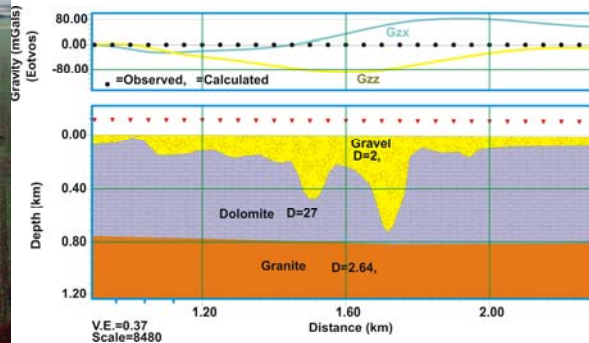


Figure 1. Picture of paleochannel outcrop.

Figure 2. Forward model of pothole shows an 80 Eotvos gravity gradient response.

A forward model of a typical pothole (Figure 2) shows that the potholes should provide a large gravity gradient response. Figure 3 shows that the Tzz map of a small area of the survey confirms that Air-FTG[®] images the buried channels and detects a large gravity gradient anomaly at a "pothole". Note also that the Paleochannel interpretation changed to southeast coming out of the "pothole" as a result of the Air-FTG[®] survey; this has been confirmed.

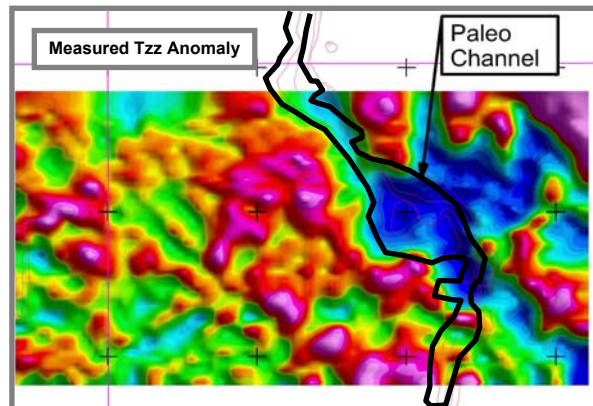


Figure 3. Tzz image of a pothole.

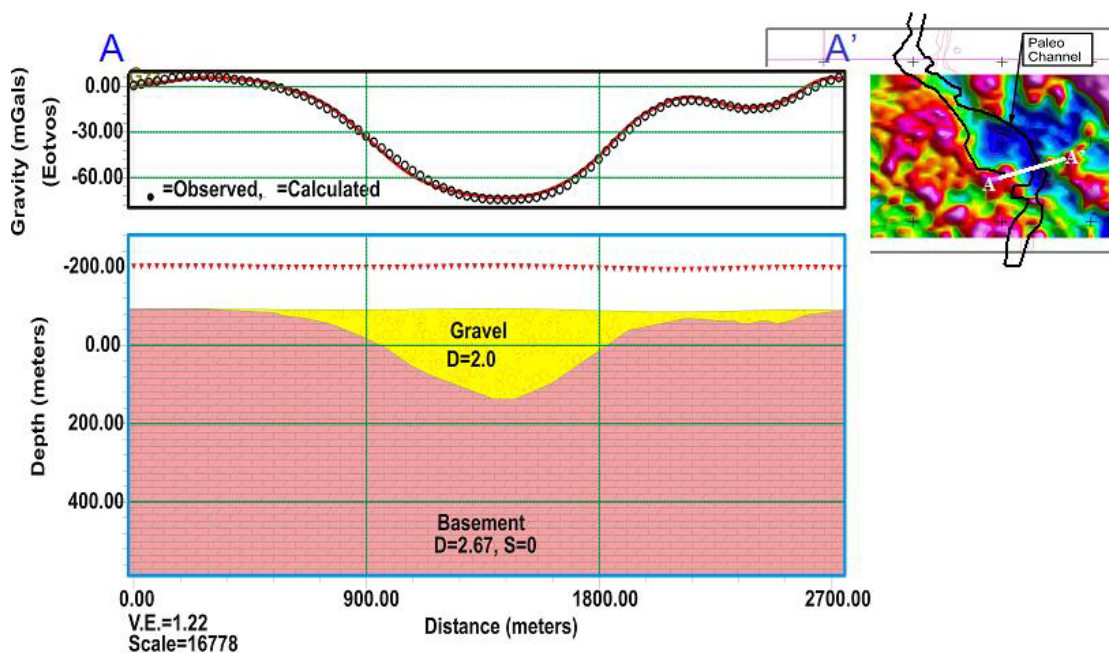


Figure 4. Iterative forward modeling shows cross section of channel across A-A'.

Using the gridded Tzz data across the channel along A-A' in Figure 4, iterative forward modeling provides a model that fits the measured Tzz data.



(We would like to acknowledge Eturscan Resources of Windsor, Nova Scotia for allowing us to show this data)

For additional information please contact:

Americas:

John Mims
 Bell Geospace
 2 Northpoint Drive
 Suite 250
 Houston, TX 77060
 USA
 Ph. 281-591-6900 ext. 402



<http://www.bellgeo.com>

Africa, Asia, Australia, Europe:

Karel Zuidweg
 Bell Geospace
 Aberdeen Science & Technology Park
 Bridge of Don
 Aberdeen, AB22 8GU
 United Kingdom
 Ph. +44 1224 227722