

## Definition and Volume Analysis

### PURPOSE:

The purpose of the survey was to determine the geo-metric characteristics of the pipe well below the limitation of current physical information from mining and drilling.

Potential economic impact and benefit was to come through improving mine planning and providing future cash flow implications by better estimating future mining potential.

### CHALLENGES:

Challenges included not only operating within the active mine environment but also collecting accurate and useful information in an extremely culturally effected area.

### RESULTS:

Kimberlite bodies were imaged to depths up to 800 metres. The survey located edges of the pipe to plus/minus 25 metres through DC and MT, and detected a second pipe off-section. Varying resistivities within the pipe were noted to relate to distinct kimberlite facies.

These results impact on delineation drilling, mine planning and discovery processes.

Regardless of noise, the Titan 24 survey was successfully completed at an operating diamond mine. In addition, resistivity contrasts within the Kimberlite, associated with different diamond bearing facies were mapped with the Titan data. These results impact on delineation drilling, mine planning and discovery processes, highlighting priority zones for the next step drilling.

The largest diamond mine in the world, the Jwaneng mine, found in southern Botswana has been operating since 1982. Owned and operated by De Beers, the company contracted Quantec Geoscience to perform a Titan 24 DCIP & MT survey over its Jwaneng and Venetia mines. Distributed

technology, digital signal processing and data over sampling are some of the features of Titan technology that allow the acquisition of information in culturally harsh environments. The advantages are early stage volumetric studies, early stage geometric studies, and highlighting priority zones for next step drilling.

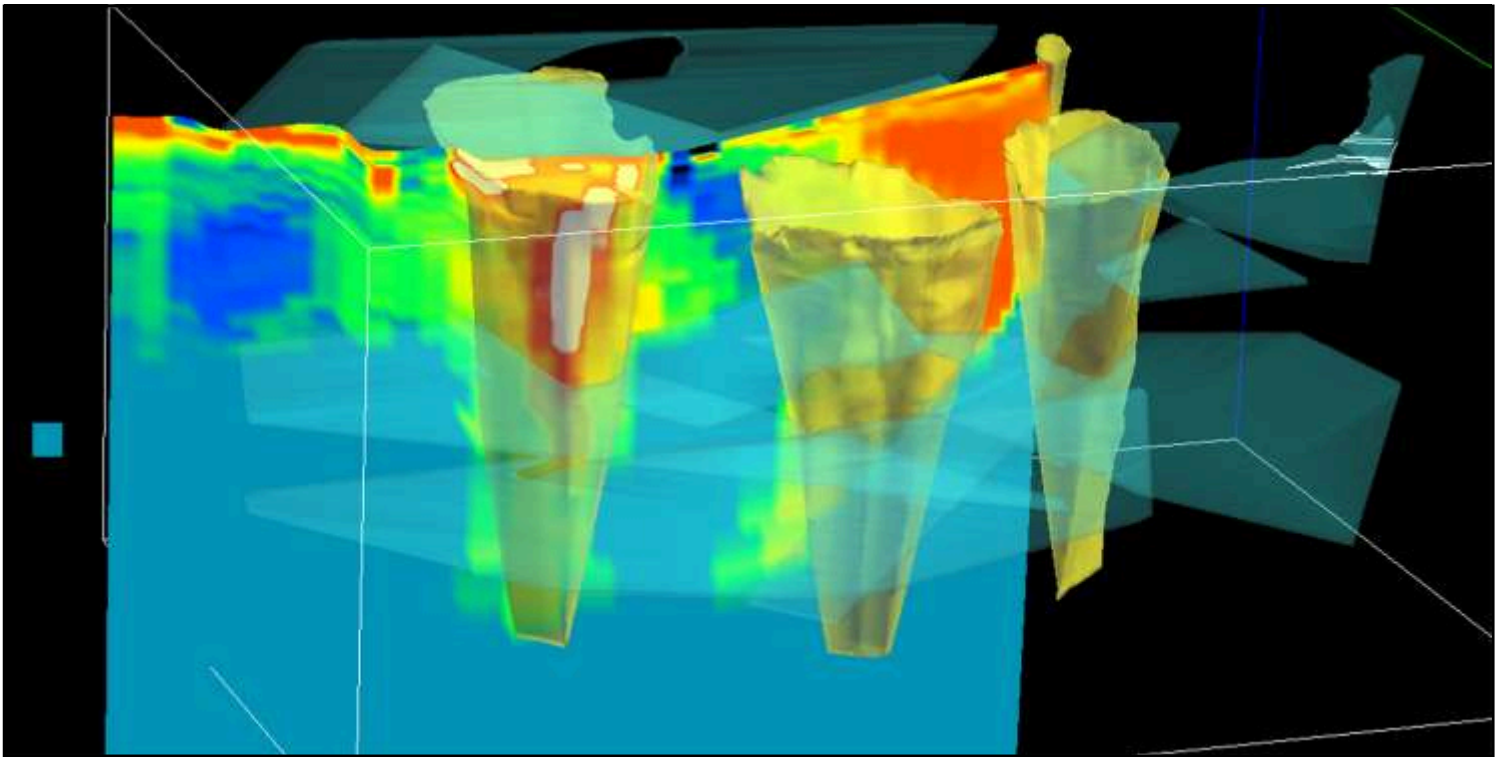


Distributed technology, digital signal processing and data over sampling are some of the features of Titan technology that allow the acquisition of information in culturally harsh environments.





# Jwaneng, Botswana- Diamond Mine



resistive                      conductive

Data used by Permission: Debeers



Titan applications for kimberlite exploration and diamond mining:

- Early stage delineation studies
- Drill planning and prioritized targeting
- Geometric and volumetric studies pertaining to mine planning and mine life

## About Quantec

**Quantec Geoscience Ltd.** has been helping with discovery for over 20 years.

Our offices throughout the world allow access to a collective knowledge database of thousands of projects with practically all possible geophysical surveys.

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