

FAST-TRACKING GOLD EXPLORATION BELOW 300M - 3D SEISMIC CASE HISTORY FROM DARLOT GOLD MINE

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The Darlot-Centenary gold deposit is one of the larger known mineralised systems in the southern end of the West Australian Yandal Greenstone Belt, with an estimated 3 Moz having been extracted from the Darlot Centenary Mine since 1988. The area is well explored near surface but given the proven endowment there is potential for significant additional mineralisation at depth. With current proven reserves dwindling, Gold Fields recognised the need to identify a technology to fast-track target generation in order to more rapidly evaluate the nearby rock volume.

In August 2016 Gold Fields began investigating the potential for 3D reflection seismic to accelerate evaluation of the rock volume accessible via existing workings. In November 2016 a seismic crew was on ground acquiring approximately 150km³ of 3D seismic data (25km² surface area x 6km depth). The survey coverage was designed to image the local steeply dipping geology and structures. Processing of the seismic dataset was completed in Q1 2017 and Gold Fields has completed preliminary interpretation of the 3D cube.

The seismic data has provided a rich 3D picture of the Darlot structural framework to depth, which could not be obtained by any other geophysical method. It has highlighted a number of features with similar characteristics to known mineralisation and has provided a better defined structural framework that has greatly assisted the fundamental geological understanding and further aided ranking of these targets in terms of prospectivity.