

Carrapateena IOCG Deposit: Discovery to Operating Sub Level Cave Mine and Beyond

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Carrapateena is a breccia hosted iron oxide Cu-Au deposit (IOCG) which is located along the eastern margins of the Gawler Craton in South Australia approximately 100km SSE of the iconic Olympic Dam IOCG deposit. Disseminated Cu-Fe sulfide (bornite, chalcopyrite, pyrite) mineralisation is hosted within the Carrapateena Breccia Complex (CBC); a polymictic hematite-granite breccia with variable hematite-sericite-chlorite-carbonate alteration. The deposit is surrounded laterally by altered Paleoproterozoic Donington Suite granitoid and is overlain by Neoproterozoic Stuart Shelf sediments. Felsic and multiple generations of mafic dykes crosscut the surrounding granite and to some extent crosscut the outer parts of the CBC.

The Carrapateena deposit was discovered in 2005 by RMG Services, a small private Adelaide firm. A subsequent joint venture followed with Canadian major Teck Cominco (now Teck) conducting delineation drilling to further understand the deposit. Carrapateena was wholly purchased in 2011 by OZ Minerals Limited (OZL), who completed further delineation drilling and scoping studies before commencing a box cut and decline from surface in 2016 to access the planned Sub Level Cave mine (SLC). Production from the SLC commenced in 2019, producing first concentrate in December 2019. OZ Minerals was taken over by BHP in May 2023 and became the 100% owner of Carrapateena.

The geoscience knowledge (e.g. grade distribution, structure, mineralogy, geometallurgy, rock mass characteristics and hydrology) required to support the journey from deposit discovery through various study phases and into production has evolved significantly and will continue to grow as the mine transitions into a caving operation. The teams involved throughout the 20 years have built on predecessors work and continually work to extract the most value out of all the rocks available and the information they hold to unlock and support the future of this unique deposit.