

# Geology and Mineralisation of Altura's Pilgangoora Lithium Mine

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## ABSTRACT

Altura's Pilgangoora Lithium Mine is located approximately 90km south of Port Hedland, in Western Australia's Pilbara region. Pegmatite mineralisation in the Pilgangoora area was first identified in 1983-84 during a drilling program targeting tin and tantalum, with a potential lithium anomaly reported. Mapping work by Altura identified a set of lithium anomalies within its tenements in 2006-09. Drilling by reverse circulation (RC) and diamond drilling methods from August 2010 to April 2013, resulted in the discovery of significant widths of mineralised lithium bearing pegmatites.

Detailed infill and sterilisation drilling from June to October 2016, improved Altura's geological understanding of the deposit, resulting in a revised mineral resource and a mineral reserve estimate being released in January 2017. Mine development and processing plant construction work commenced in March 2017, with the crushing of ore commencing in May 2018. Initial production of lithium spodumene concentrate occurred mid-2018 and in October, the first shipment of lithium ore was completed.

The deposit occurs at the southern end of a set of pegmatite intrusive dykes within the synformal Pilgangoora greenstone belt. The pegmatites are hosted within amphibolites which have a mafic and ultramafic volcanic origin. A total of fifteen mineralised pegmatites have been identified and these occur as a set of stacked lodes generally striking 010-030°NNE and dipping 25-70°ESE. The dykes generally range from 8-14m thick however there are areas where the pegmatites form lenticular pods up to 60m thick. The pegmatites occur within an NNE trending corridor which is approximately 1600 metres long (north to south), 550 metres wide (east to west) and potentially up to 450m deep. Mining activity has exposed several pegmatites over 750 metres of strike length, in a 500m wide zone, providing a clearer insight into the geology and mineralisation of the deposit, including the creation of a three-dimensional model of the pegmatite and host rock lithologies.