

THE GEOLOGY, GEOCHEMISTRY AND
GEOCHRONOLOGY OF THE NORTHERN
MOST HALF OF SAINT FRANCIS ISLAND,
NUYTS ARCHIPELAGO: SOUTH AUSTRALIA.

by

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ABSTRACT

The study area is located on Saint Francis Island, of the Nuyts Archipelago. Middle Proterozoic alkali granite, leucogranite, rhyolite and various granitic, rhyolitic, and doleritic dykes are the major rock units present. These are overlain by Quaternary Bridgewater formation.

U-Pb zircon dating of the rhyolite of the western end of Saint Francis Island reveals an age of 1631 ± 3 Ma, which is interpreted as a primary age.

Chemical analyses of the western rhyolites and the eastern alkali granites indicate that both were probably formed by a partial melting process. The rhyolites and granites possibly originated from the same source. The I- and S-type classification is not satisfactory for the granites. These granite may be A-type granites, that is derived from a granulite source. The rhyolites and granites were possibly formed by partial melting of a granulite, which has had a long residence time in the crust.