Stratiform manganese deposits in accretionary complexes of Japan: a paleoceanographic formation model

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Many stratiform manganese deposits occur as conformable lenses or beds in the chert-dominant blocks of accretionary complexes in the Japanese Islands. Majority of the deposits are restricted to two mineralization horizons of Late Triassic and Middle Jurassic. A well developed stratigraphic sequence is often observed in the vicinity of the manganese horizon, i.e., footwall bedded chert, black shale, massive chert, manganese ore and hangingwall bedded chert, in ascending order. A paleoceanographic model responsible for the succession, chemical and sulfur isotopic profiles is constructed. Their formation would essentially be triggered by an influx of warm saline oxic surface water into deep stagnant ocean floor environment.