

The paleo-redox environment in the deep sea at the P/T boundary: implications from trace element concentrations in pyrite

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The P/T boundary deep-sea sedimentary sequence in Southwest Japan was analyzed to reconstruct paleo-redox environment across the boundary. Different concentration profiles are identified for redox-sensitive elements, which are explained as the changes in depositional environment from oxic to suboxic toward the boundary, and euxinic above the boundary. Strong correlation between S and elements such as Mo, As, and Tl are observed, suggesting high concentration in the pyrite phase. Mo/As ratio increases upward, which may reflect changing the chemical environment during the processes of pyrite formation. It is possible that some information on the paleo-redox environment can be extracted from this ratio.