Behavior of trace and rare earth elements with chemical weathered sedimentary rocks, Miocene Onnagawa Formation, Oga peninsula

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To understand the migration of trace and rare earth elements during the weathering of sedimentary rocks under the oxic environment, we examined mineralogical and geochemical features of weathered shale and siliceous shale, Miocene Onnagawa Formation, Oga peninsula, NE Japan.

Fe2O3* positively correlates with REEs, U, Mo, Pb, Cr and V, indicating that these elements are adsorbed by ferric hydroxide.

However, there is significant difference between in the migration behavior of shale and siliceous shale. Correlation coefficient between Fe2O3* and trace and rare earth elements in shale is significantly lower than in siliceous shale. This is considered to be due to difference in pH condition for the weathering of each type of lithology.