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The Stuoragurra Fault is part of the Lapland province of postglacial faults and was identified in 1983 during a colloborative project between the Geological Surveys of Finland Norway and Sweden. The Stuoragurra Fault is an 80 km long fault zone which contains three main segments of eastward dipping faults (30-55 deg.) with up to 10 m of reverse displacement and a 7 m high escarpment. It cross-cuts glaciofluvial deposits and consequently being younger than 10.000 years. The postglacial fault segments follow to a large extent older fault zones represented by lithified breccias and diabases of Proterozoic age.

In this paper we will present textural and mineralogical study of a 135 m continous core drilled across the fault zone. The investigation methods include quality assessments by rock quality designation methods (RQD and Q- methods), textural and petrological descriptions visually and by thin section microscopy, and mineralogical analysis by X-ray diffraction. Special attention is drawn to neoformed and/or degraded minerals like clay minerals and iron oxides/hydroxides.

The quality assessments of the cored material reflect the degree of rock deformation and fragmentation and show the quality of the bedrock generally to be of very poor (about 60%) to poor quality" (25%) The main minerals in the fresh rock are quarts, feldspar, mica and iron oxides (magnetite and ilmenite). Throughout the cored borehole products of weathering have formed on fissures, fractures and in strongly deformed, gravelly, zones. The neoformed minerals include kaolinite, smectite, and vermiculite, as well as goethite. The mineralogical transformations will be discussed in relation to the rock texture,petrophysical properties and fault characteristics.