

## **Abstract**

Large depression cone in water table was formed due to mining in surroundings of Střeleč quarry. The concentrated inflow from conduits to quarry is up to 70 l/s. Large conduit systems are created by flowing water into the quarry. The biggest conduit system was at least 300 m long and 17 m high with maximum calculated volume of 22 thousands m<sup>3</sup>. Evolution of these conduits usually takes several months to few years. Fast conduit evolution allows to study erosion processes in detail in situ. In the thesis I am describing conduits, character of flow and erosion processes. Measured flow velocities in conduits are up to 0,4 m/s with hydraulic gradient 1 to 5%. Flow velocities and hydraulic gradients are typical for piping erosion. Piping initially forms small protoconduits. The bigger conduits are formed as water is progressively drained from larger area. Conduits are following fracture surfaces, which are also limiting the conduit propagation to the sides. Above water table the conduits are enlarged mainly by mass wasting of undercut sandstone slabs. For distinguishing less and more erodible parts of sandstone, we adapted and partially developed a method for measuring erodability (REI) and drilling resistance (DR). Both are used to compare different types of sandstone surfaces. In lowermost part of the quarry, where the channels are formed 65% of exposures are formed by erodible sandstone. Describing and understanding of these processes in Střeleč quarry may be essential for understanding the evolution of similar features in sandstone landscapes in Bohemian cretaceous basin.