

Summary

Kutná Hora and its outskirts is an area significant for polymetallic ore mining since the Middle Ages. The mining was conducted till 1990s with several interruptions thru history. The latest modern mining operation took place in Turaňk mine, which was reopened in 1950. The production was terminated in 1991 including the operational hutch water pumping. The mine was continuously flooded by groundwater affluents and precipitation water till 2001 and the hutch waters were distinctively enriched with mining elements and compounds of secondary minerals originating from oxidation in opened mine. In 2001 the hutch water overflowed to ancestral adit of 14 adjuncts causing an emergency situation. The hutch water was freely flowing thru the adit to Beránka stream which it contaminated. A hutch-water treatment plant was build consecutively in the area of former ore-preparing plant and pumping of hutch water commenced for the purpose of decreasing water level in Turkaňk hole followed by water decontamination. The plant is currently operational and optimized to maintain stable water level under the spillway to the adit of 14 adjuncts.

The ore extraction took place in crystallinic massif of Kaňk hill, which northwest and southeast vicinity is settled with saturated cetraceous and quaternary sediments. These are potentially endangered by the spill of the contaminated hutch water. For this reason are underground and hutch waters in this area monitored. Until now the monitoring was probably mostly informational and no conclusions were made from environmental perspective, such as debris from mining operation, precipitation, its infiltration and pumping on changes in the hutch water.

The thesis deals with interpretation of the ongoing monitoring from perspective of above mentioned factors. Furthermore it reviews the monitoring system, whether it provides data for such evaluation. The result of this work is a comparison analysis determining the development of level and chemism of the hutch waters in Turkaňk hole and underground waters in the area and if and how are the underground waters contaminated. During the evaluation was found out that the monitoring is not enough systematic to allow exact complex analysis. The thesis hence recommends some optimalization steps.