

18.21 **Hydraulic transportation system for use in hole-bottom during oil shale bore hydromining**

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Bore hydromining is a promising new technology for extraction of oil shale. The process involves the use of a high-pressure water jet operating at the bottom of a borehole to crush oil shale and a hydraulic circulating system to transport ore particles (<60 mm) to the surface. As ore particles are discharged from the borehole, the size of the mining field increases. Using numerical simulations and laboratory tests, we have developed a flow model of the hydraulic transportation system for use in hole-bottom, bore hydromining. The influence of jet pressure on the hydraulic transportation field during hole-bottom mining has been assessed. In order to optimize the efficiency of transporting ore particles in the system, several factors have been investigated, including flow velocity in hole-bottom, pressure, flow trace, and ore slurry entry position. A summary of key results will be presented.