

Dewatering in Complex Hydrogeological Conditions – a Case Study “Drmno” Coal Open Pit

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Complex hydrogeological, geomechanical, hydrological and mining conditions in open pits mainly impose design and construction of complex dewatering system for the purpose of open pit protection against ground and surface waters. This system implies numerous dewatering facilities such as wells, canals, pumping stations with water collection sumps, as well as structures for river stream regulation and dislocation, vertical and horizontal boreholes, control observation boreholes, nidle filters, water impervious screens, etc.

Taking into account a number of informations needed for successful dewatering operations, an information system was designed which consists of several parts on the following: data base of geological, hydrogeological, gemechanical, hydrological and mining parameters, application of professional software packages such as those provided by Waterloo Hydrogeological Inc. (Visual MODFLOW, Visual Groundwater) and the system for remote supervision and control in real time.

Having in mind above mentioned, the information system was developed as a result of research conducted by the authors on the coal open pit “Drmno”. It is operating in a highly complex system where only in the initial stage 250 wells and 150 observation wells are in operation, and in line with mining development the number of wells and observation wells should reached a final number of 600.