Water Quality From Underground Coal Mines. (S11-skousen162850-Oral)

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Abstract:

Abstract: The duration of acid mine drainage flowing out of underground mines is important to watershed restoration and mine reclamation projects because an understanding of acidity changes over time will help in designing reclamation and treatment methods. Past studies report that acid water flows from underground mines for hundreds of years with little change in quality, while others state that poor drainage quality may last only 20 to 40 years. Over 50 underground mine discharges were located and sampled during 1968 in northern West Virginia, and we revisited those sites in 2000 and measured flow, pH, acidity, Fe, Al, and sulfate. There was no significant difference in flows between years from these discharges, so we felt that the data from these two sampling years could be compared. Significant changes between 1968 and 2000 were found for all parameters: pH increased from 3.1 to 4.0, acidity declined from 1,150 to 295 mg/L (as CaCO3), Fe decreased from 352 to 61 mg/L, Al decreased from 143 to 38 mg/L, and sulfate from 2,918 to 1,037 mg/L.

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