

Mine Pools as a Valuable Municipal and Economic Water Resource in the Central Appalachian Coalfields

Hannah Patton¹ and Ben B. Faulkner²

Presented at the 2022 West Virginia Mine Drainage Task Force Symposium. Morgantown, WV October 4-5, 2022.

Abstract: Underground mine pools represent a substantial water resource when water quality is acceptable for the intended use and pool storage and recharge provides a reliable quantity of gravity discharge or pumped flow. In 1981, 72 cities and communities in West Virginia depended solely on mine pools for public water supply. Currently, 30 cities and communities provide safe drinking water from mine pools. While many publicly owned water treatment systems in West Virginia have abandoned their mine water sources, others have included them in the last 40 years. Simultaneously, water line extensions, often funded through the Abandoned Mine Lands Program, have increased the number of households served by public water systems. Many individuals in Appalachia are still not served by a PSD and rely on private water systems, such as roadside “springs” (often mine pool gravity discharges). Examination of water quality at some of these water sources indicates that they may represent a health risk due to bacterial contamination or metal contaminants. A simple point-of-use chlorine disinfection method was evaluated and then shared with spring users. As clean, dependable water sources become increasingly scarce and valuable across the United States and the world, agencies and several entrepreneurs are utilizing mine pools, not only as public drinking water sources, but for aquaculture projects.

¹Hannah Patton, MS, MPH, EIT, CPH, PhD Candidate, Biological Systems Engineering, Virginia Polytechnic Institute & State University. hpatton@vt.edu

²Ben B. Faulkner, Field Supervisor - Virginia Tech, Sr. Consultant – Civil & Environmental Consultants, Inc., Environmental Consultant at Bratton Farm. BenBFaulkner@gmail.com