Acid Mine Drainage Water Testing and Metals Analysis at Morris Creek, WV[1]

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Abstract: Acid mine drainage (AMD) is generated by abandoned mines and negatively affects bodies of water across the nation. Morris Creek is one of these bodies of water in Montgomery, West Virginia. The Morris Creek Watershed Association has worked with the WV Department of Environmental Protection to implement a limestone bed remediation treatment. This research conducted Water Quality Index (WQI) testing and Atomic Absorption (AA) analysis of metals on water samples collected at several different points in the treatment system. The WQI testing includes temperature, pH, turbidity, total solids, dissolved oxygen, biochemical oxygen demand, phosphates, nitrate, and fecal coliform (Johnson, Holmquist, & Redding, Water Quality With Vernier, 2007). The hypothesis of this study is that Water Quality Index (WQI) testing and metal ion concentrations are related, mainly through the correlation between dissolved oxygen levels and metal (Fe and Ca) concentrations. The results show that the hypothesis is supported.

Additional Key Words: AMD, water quality testing, metals analysis.

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