RECOVERY AND ENHANCEMENT PLAN DEVELOPMENT FOR THE LEADING CREEK WATERSHED, MEIGS COUNTY, OHIO

by

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Abstract. Following the flooding of the Meigs #31 coal mine in Meigs County, Ohio, a proactive plan was developed to evaluate initial dewatering effects, recovery and development of a watershed enhancement plan. Approximately half of the 31-mile Leading Creek mainstem received ~one billion gallons of coal mine discharge, including sludge and slurry. Damage to the stream system resulted from high conductivity (~6,000 μmhos/cm), low pH (2.5-3.5), high metals (aluminum, cadmium, copper, iron and iron floc, lead, manganese, nickel and zinc) and total suspended solids. Most forms of aquatic life were depleted in the impacted areas. Four years after the incident, many forms of benthic macroinvertebrates and fish have recovered in the creek, with sediments purged of metals by stormwater events. The enhancement plan involves a reconnaissance of the creek and tributaries pinpointing areas of agricultural sedimentation and abandoned minedland discharges (AMD). Seventeen tributary and ten mainstem stations were addressed as point source discharges with water/sediment toxicity and in-situ testing of Asian clams. One-third of the stations were intermittently toxic from rainfall runoff and the degree of AMD input. Benthic macroinvertebrates in many tributaries were stressed and comprised 1-5 taxa. Erosion/sedimentation was addressed by the USEPA 1-Dimensional Hydrologic Simulation Program Fortran (HSPF) model, as well as incorporating land use management/habitat assessment, and data management by Geographical Information Systems.

Additional key words: recovery, restoration, watershed enhancement, sedimentation, AMD

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