

# Assessment and Quantification of Water Treatment Systems to Meet West Virginia Water Quality Standards

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## Abstract

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In August of 2011, a ruling in the United States District Courts held that the West Virginia Department of Environmental Protection (WVDEP) was required to obtain Clean Water Act section 402 NPDES permits and meet prevailing water quality standards for one hundred sixty-eight (168) Bond Forfeiture sites scattered throughout West Virginia. As part of the judgment, the DEP was required to provide a site inventory, sampling data, a priority ranking of sites, a summary of the costs to achieve compliance, and a schedule detailing the corrective actions. In response to this judgment, the WVDEP requested the assistance of the West Virginia Water Research Institute (WVWRI) in developing the priority ranking for the bond forfeiture sites based on acid load, its impact to the receiving tributaries, and cost estimates to retrofit those sites with the goal of compliance.

The District Court order had identified a total of eighty-nine (89) sites located in the Northern District and eighty-two (82) sites located in the Southern District. Thirty-three (33) sites were determined by WVDEP as: 1) having no discharge; 2) NPDES permitted; 3) construction completed; 4) under construction; or 5) not applicable.

The West Virginia Water Research Institute (WVWRI) ranked the sites, developed cost estimates for both capital and annual costs. The results of the study performed by the WVWRI found that the capital costs required to get the sites to compliance totaled **\$33,122,958.35** and operation and maintenance costs are going to be approximately **\$5,547,227.85** a year.