West Branch Susquehanna Subbasin AMD Remediation Strategy Recommendations Summary

Encourage restoration activities within the management units contributing to a majority of the AMD-pollutant loads;

Utilize the tools outlined in this document to assist with decision making on restoration planning, including maintaining the water quality database through periodic updates;

Develop restoration plans for areas where none currently exist;

Investigate other factors contributing to aluminum loading issues in the West Branch Susquehanna Subbasin;

Encourage efforts to combine the restoration of Priority I and II Health and Safety Sites with the elimination/treatment/improvement of "adjacent" AMD discharges (Priority III sites);

Investigate opportunities to restore wild trout streams affected by AMD for the ultimate goal of reconnecting populations within the West Branch Susquehanna Subbasin;

Encourage collection of flow measurements when water quality data are collected from streams and discharges;

Complete assessments of areas lacking discharge and instream water quality data; and,

Continue to monitor instream water quality for the 34 management unit endpoint stations so that any improvements can be documented.

Major Highlights of the West Branch Susquehanna Subbasin AMD Remediation Strategy

- ✔ Water quality impairment, mainly from AMD, of the West Branch Susquehanna Subbasin is the only major hindrance to biological expansion since nearly 90 percent of the subbasin has been documented as containing either excellent or supporting habitat (LeFevre, 2003).
- ✔ 1,205 stream miles of the West Branch Susquehanna Subbasin are impaired by AMD, which is 66 percent of the total AMD-impaired mileage in the entire Susquehanna River Basin. However, the subbasin also contains 1,249 of Exceptional Value waters and 5,229 stream miles of High Quality Cold Water Fisheries (West Branch Susquehanna River Task Force, 2005).
- ✔ There are approximately 1,964 AMD discharges in the West Branch Susquehanna Subbasin, however, only 788 (40 percent) contained enough data to meet analytical criteria standards.
- ✔ 11 Management Units (10 tributary MUs and one West Branch Susquehanna River MU), comprising only 10 percent of the West Branch Susquehanna Subbasin area, contain nearly 80 percent of the analytical criteria discharge loading.
- ✔ 8 of the 11 priority Management Units are found within the Clearfield Creek, Moshannon Creek, and Bennett Branch Sinnemahoning Creek Watersheds.
- ✔ The hypothetical examples for West Branch Susquehanna Subbasin remediation would allow for a completely net alkaline West Branch Susquehanna River mainstem with iron concentrations that meet Pennsylvania Department of Environmental Protection water quality standards. Aluminum concentrations, however, may still exceed water quality standards between the entry of Clearfield Creek and Bald Eagle Creek. The capital cost needed for this remediation has been estimated to be between $43 and $165 million.
- ✔ Treatment of Cresson #9 discharge, Gallitzin #10 discharge, Gallitzin Shaft Mine Complex, and Dean Clay Mine in Brubaker Run could lead to a majority (~ 86 percent) of the Clearfield Creek mainstem attaining water quality standards for iron.
- ✔ Out of the 788 analytical criteria discharges, 213 (27 percent) are within one-quarter mile of a Priority I or II Health and Safety Problem Site. Land reclamation of these sites could pay water quality dividends, particularly in the Clearfield Creek, Moshannon Creek, Bennett Branch Sinnemahoning Creek, Anderson Creek, and Chest Creek Watersheds due to possible hydrologic connections.
- ✔ 48 focus watersheds in the West Branch Susquehanna Subbasin contain, at minimum, sections of Pennsylvania Fish and Boat Commission documented wild trout and sections of Pennsylvania Department of Environmental Protection documented AMD and/or atmospheric deposition (acid deposition) impairment. These 48 focus watersheds contain 634 miles of Wild Trout classifications, 99 miles of Class A Wild Trout designations, 55 miles of Wilderness Trout designations, but also 438 miles and 89 miles of AMD and acid deposition impairment, respectively. Only 3.7 percent of the subbasin contains large/strong populations of wild brook trout.
- ✔ Total capital costs of complete West Branch Susquehanna Subbasin remediation from AMD impacts could be as high as $400 million; however, true costs ultimately will not be known until projects are competitively bid.