

To be presented at the Ground Water Protection Council Produced Water Conference, Colorado Springs, CO, October 16-17, 2002

**Management of Produced Water from Coal Bed Methane Wells:
Discharge, Inject, or Reuse?**

John A. Veil¹

¹Argonne National Laboratory, 955 L'Enfant Plaza, SW, Suite 6000, Washington, DC 20024, USA

Biographical Sketch of the Presenting Author

John Veil is the manager of the Water Policy Program for Argonne National Laboratory in Washington, DC. He analyzes a variety of energy industry water and waste issues for the Department of Energy. He has a B.A. in Earth and Planetary Science from Johns Hopkins University, and two M.S. degrees -- in Zoology and Civil Engineering -- from the University of Maryland. Before joining Argonne, Mr. Veil had statewide responsibility for industrial water pollution control permitting through the National Pollutant Discharge Elimination System (NPDES), Underground Injection Control (UIC), and oil control programs. Mr. Veil also served as a faculty member of the University of Maryland Department of Zoology for several years. Mr. Veil has published many articles and reports and has made numerous presentations on environmental and energy issues.

Abstract

Coal bed methane (CBM) wells are being developed in increasing numbers throughout the United States. These are wells that are drilled into coal seams to withdraw ground water (produced water) to reduce the hydrostatic pressure on the coal seam. The reduced pressure allows methane gas to migrate to the well bore where it moves to the surface and is collected. Where possible, operators prefer to discharge the produced water into nearby streams, rivers, or other surface water bodies. Depending on the chemical characteristics of the produced water, different levels of treatment are applied to the produced water before discharge. In some locations, produced water cannot be discharged and is injected, reused, or evaporated. Although the CBM industry is producing "natural" gas, such gas may not necessarily be covered under the existing national regulations for discharges from the oil and gas industry. This paper describes the existing national discharge regulations, the ways in which CBM produced water is currently being managed, the current CBM discharge permitting practices, and how these options might change as the volume of produced water increases because of the many new wells being developed.