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National
Water Program
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# USDA-CSREES 2007 National Water Quality Conference

## Monitoring the Quality of CBNG Produced Water across Powder River Basin, Wyoming

The demand for coalbed natural gas (CBNG) in the United States is increasing to meet national energy demands. The extraction of CBNG from coalbed aquifer results in production of large amounts of produced water. The objective of this study was to collect and monitor CBNG water samples at well head and corresponding disposal ponds across the Powder River Basin, Wyoming. Samples were analyzed for major elements (Na, Ca, Mg, K), major anions (Cl, F, NO2, NO3, SO4, PO4), and trace metals (Al, Mn, Fe, Pb, Cu, Cd, Ba, B, Cr, As, Se, Mo). The analytical data was input into a geochemical model MINTEQA2 to determine quality of CBNG produced water and beneficial uses such as irrigation, livestock/wildlife watering, and aquaculture. In addition to these results, water quality monitoring data from previous studies in the Powder River Basin, Wyoming will be discussed.

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