Gorody, A. W. 2012, Addressing environmental concerns in shale gas development: Baseline groundwater sampling, monitoring, and other mitigation strategies (Invited), Houston Geological Society, Nov. 14, 2012.

Abstract

Environmental concerns related to gas development are significantly extending unconventional resource drilling and development project life cycles. This is particularly evident in Rocky Mountain regions where private surface and mineral ownership is split. Both accelerated population growth and accelerated gas development programs are encroaching upon one another, thereby creating the greatest potential for conflict in urban areas. We will review and discuss approaches that various operators are implementing in the Piceance Basin to reduce conflict with surface use agreements, water well agreements, and baseline air and water sampling and monitoring agreements.

Surface owners and non governmental organizations (NGOs) have extrapolated their concerns regarding coalbed natural gas resource development to the tight gas sand resource. Both resources share potentially negative impacts associated with ground surface disturbances. These arise from the need to develop a relatively dense development infrastructure. As a result, surface use agreements are being increasingly used. In Colorado, surface owners without a surface use agreement can now request on site inspections from Colorado Oil and Gas Conservation Commission (COGCC). A recent landmark memorandum of understanding between BP and LaPlata County Commissioners, proactively establishes terms to voluntarily regulate land use for infill drilling development of the Ignacio Blanco coalbed natural gas field. Similar proactive agreements are being drafted among tight gas producers and city development planners in the Piceance Basin.

Although surface water disposal issues and concerns regarding shallow groundwater withdrawal are not relevant to tight gas sand development, surface owners are increasingly requesting water well agreements. Because many water wells in Colorado are susceptible to drought and have poor yields and poor water quality, many operators are voluntarily conducting baseline sampling and monitoring surveys to document water well conditions. Their sampling and analysis protocols are similar to those required by the COGCC under the permitting requirements for infill drilling of the Fruitland Formation (Orders 112-156 and 112-157).