Research to look at wastewater from gas 'fracking'

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WASHINGTON — Nine new research projects funded by the federal government are aimed at improving methods for treating, reusing and managing water used in drilling for natural gas, the US Department of Energy (DOE) announced in an August 19 **press release**.

Questions have been raised recently by various groups about the environmental impact of drilling fluids left in groundwater, especially as energy companies have started to extract natural gas from the large Marcellus Shale formation that underlies several eastern states. The fluids are used in an extraction method called hydrofracturing, or "fracking," in which an aqueous fluid is injected into a gas well at high pressures to open up gas-containing rock.

A total of $10.2 million, of which the DOE is contributing $6.9 million, has been allocated for the projects by the National Energy Technology Laboratory of DOE's Office of Fossil Energy. Following are the nine research contractors chosen, and the goal of each of project:

● ALL Consulting, Tulsa, OK — Develop a modeling system that will allow operators and regulators to plan all aspects of water management associated with shale gas development.

● General Electrical Co., Niskayuna, NY — Develop a low-cost, mobile process to treat the total dissolved solids in the flowback water from hydraulic fracturing operations.

● West Virginia University, Morgantown, WV — Develop and demonstrate a process for the hydrofracturing water returns from Marcellus Shale wells.

● University of Arkansas, Fayetteville, AR — Develop a water management decision-support system by modifying and integrating a state-of-the-art water resource simulation model with a modern enterprise geographic information system (GIS).

● Ground Water Protection Research Foundation, Oklahoma City, OK — Develop a new hydrofracturing module as an add-on to the well-known Risk-Based Data Management System.

● Geological Survey of Alabama, Tuscaloosa, AL — Analyze and develop strategies for water management in the coalbed methane reservoirs of the Black Warrior basin (a layer of coal- and gas-containing rock beneath parts of Alabama and Mississippi).

● Altela Inc., Albuquerque, NM — Demonstrate that the AltelaRain technology (an onsite technology used to treat wastewater from oil and gas production) can be successfully deployed in a cost-effective manner to treat the produced and flowback water from Marcellus Shale, and that it can operate within regulatory requirements.

● University of Pittsburgh, Pittsburgh, PA — Evaluate the potential for combining and treating two waste streams (flowback water and acid mine drainage) for reuse as a hydrofracturing fluid, and also develop novel viscosity modifiers for water high in total dissolved solids.

● Texas Engineering Experiment Station, College Station, TX — Identify an efficient and cost-effective pretreatment methodology for use in processes employed to treat and reuse field-produced brine and hydrofracturing flowback waters.