

## **EPA Initiates Rulemaking to Set Discharge Standards for Wastewater from Shale Gas Extraction**

### **Natural Gas Extraction from Shale Formations**

Shale gas extraction refers to the use of hydraulic fracturing to obtain natural gas trapped in underground shale deposits. Hydraulic fracturing involves injecting large amounts of water, mixed with sand and chemicals, at high pressures to break up the shale to release the gas.

### **Issue Unfolds as Part of Wastewater Standards Review**

EPA has an extensive review and planning process for industrial wastewater discharge regulations. As part of this planning process, EPA conducts an annual review of existing industrial wastewater discharge regulations. Comments submitted to EPA in early 2010 as part of the annual review prompted EPA to carefully review wastewater discharges from shale gas extraction.

### **Summary of Wastewater Discharge Issues**

Based on data provided by industry, it is evident that a portion of the injected fracturing fluid will return to the surface as “flowback,” sometimes called “produced water.” Up to one million gallons of shale gas wastewater may be produced from a single well within the first 30 days following fracturing.

These produced waters generally contain elevated salt content (often expressed as total dissolved solids, or TDS), many times higher than that contained in sea water, conventional pollutants, organics, metals, and NORM (naturally occurring radioactive material). Additional data show that flowback waters contain concentrations of some of the fracturing fluid additives.

While some of the shale gas wastewater is re-used or re-injected, a significant amount still requires disposal. Some shale gas wastewater is transported to public and private treatment plants, many of which are not properly equipped to treat this type of wastewater. As a result, pollutants are discharged into surface waters such as rivers, lakes or streams where they can directly impact aquatic life and drinking water sources.

### **Next Steps to Collect Data**

EPA plans to reach out to affected stakeholders and to collect information to better characterize shale gas wastewaters and the efficiency of various treatment, re-use, and disposal technologies that will reduce shale gas wastewater pollutant discharges, including those technologies currently in use in public and private treatment plants. EPA also plans to collect financial data on the shale gas industry to determine the affordability of treatment.

EPA is also conducting a study of the effects of hydrofracturing on groundwater, and the Department of Energy is collecting new information related to shale gas wastewater and its disposal. The two agencies are coordinating and sharing information. Should the new information indicate that shale gas wastewaters are already adequately treated, EPA is open to adjusting its rulemaking plans accordingly. Beginning a rulemaking now, particularly the data collection necessary to support such a rule, is an appropriate step given what we already know about wastewater discharges from the industry.

### **Schedule**

EPA plans to propose new standards for public comment in 2014.