

CATASTROPHIC THREAT TO THE DELWARE RIVER WATERSHED

If gas drilling is permitted within the Delaware River Watershed area, the results will be catastrophic. In the Delaware River Basin alone, hundreds of billions of gallons of fresh water will be usurped and mixed with highly toxic chemicals in order to extract the gas from the shale rock.

The Marcellus

Thirty-six percent of the Delaware River Watershed (4,928 square miles) lies within the Marcellus Shale region. This shale rock, up to a mile and a half deep, is said to be rich with natural gas, trillions of cubic feet worth. The gas industry says that the Marcellus Shale, spanning 600 miles across parts of four states (NY, PA, WV & OH), will become the nation's largest gas field.

Drilling in Delaware River Watershed

In northern Wayne County, Pennsylvania alone, over 1400 property owners have signed gas drilling leases. Under current law, companies could end up putting a well every 40 acres in New York and Pennsylvania. This would result in over 50,000 wells within the Delaware River Watershed, in effect, transforming it into an industrial zone. The amounts of fresh water consumed and polluted could reach 400 billion gallons. (It takes between 3 and 5 million gallons of fresh water to fracture each horizontal well).

Impacts Elsewhere

Colorado, Wyoming, New Mexico and Texas have learned some hard lessons about the impacts of natural gas extraction. These states have experienced serious water contamination, air pollution and environmental degradation. Now it is happening in PA. In Dimock, PA, a water well exploded soon after drilling began and by the end of the year(2009) the PA DEP declared a 9 square mile area contaminated by Cabot from the drilling. Subsequent tests found gas and volatile organic compounds in the private water wells of at least nine families. People and animals that drank this water became ill. Families have been forced to drink, cook and bathe with bottled water. In western PA and in Susquehanna County, PA the contamination events keep multiplying.

Toxic Chemicals in Drilling Fluids

New technologies pioneered by Halliburton made it possible to extract natural gas from rock formations such as the Marcellus Shale. Horizontal drilling and hydraulic fracturing use drilling fluids that contain an industrial brew of toxic chemicals: biocides, surfactants, acids, scale inhibitors and friction reducers.

Health Impacts

Chemicals added to the fracturing fluids are linked to human health effects, including, cancer; liver, kidney, brain, respiratory and skin disorders; and birth defects. Scores of these chemicals, including benzene, flourenes, ethylene glycol and methanol, even when diluted, can be injected into water supplies at concentrations that pose a threat to human health. The drilling companies have exemptions given to in relation to hydraulic fracturing and waste handling to major provisions of the Safe Drinking Water Act, Clean Air Act, Clean Water Act, the Superfund Act, Community Right to Know Act and other protective legislation. Most of these exemptions were passed in the 2005 Energy Policy Act.

Groundwater Contamination

The vertical portion of the well intersects layers of soil, clay, rock formations and aquifers, thus providing opportunities to contaminate water resources. Between 70 and 100% of the fracturing fluids can remain underground, a potential source of groundwater contamination for years to come. Then add spills, legal and illegal dumping, chemical handling "accidents" and "human error."

Hazardous Wastewater

The remainder of the fracking fluids flow back out of the well. This so-called “produced water” is laced with the toxic drilling fluids plus additional contaminants that come from deep below the earth. If drilling wastewater is taken to a conventional sewage treatment plant, the plants are incapable of processing these hazardous materials. Typically, they dilute the wastewater and then return it to waterways, again threatening drinking water supplies. In October 2008, this occurred in the Pittsburgh area contaminating drinking water sources along the Monongahela River for over 380 thousand people.

Radioactive Rock/Toxic Metals

The Marcellus is considered to be highly radioactive. These materials are brought to the surface during the drilling process. In some regions of the Marcellus, acid-producing minerals such as pyrite and sulfides are found. If toxic metals such as arsenic, cobalt, chromium, molybdenum, nickel, vanadium and zinc are mobilized, they could move through the soil and contaminate surface or groundwater. Parts of the Marcellus contain the poisonous hydrogen sulfide gas that is released into the air during the gas extraction process.

An Industrialized Landscape

To begin, many wells are spaced at one per 160 acres. As the drilling continues, companies will start to infill down to one well per 40 acres and as little as one per 20 acres. The end result is the industrialization of an area and extensive clear cutting of trees to make way for the typical 5-acre well pads and roads and pipelines leading up to them. For instance, the PA DEP has said that “they do not expect the wells to be any closer than 1000 feet apart”, or one every 22 acres.

Damascus Citizens for Sustainability (DCS)

DCS seeks to prohibit gas drilling activities within the Delaware River Basin, thus preserving the quality of the water that sustains over 17 million people. For the past two and a half years, DCS has been at the forefront educating the public about the hazards of the gas extraction industry. DCS has also hired a team of environmental attorneys to develop legal strategies to respond to this threat. In addition, DCS has retained a world-renowned watershed management expert to work with public officials to develop strategies to protect the **public health** from the gas extraction activities. DCS has paid special attention to the Delaware River Basin Commission which is responsible for regulating water withdrawals and water quality within the watershed. DCS has closely monitored all applications coming before the Commission.

For more info and to learn what you can do now, please visit us at

DamascusCitizens.org and NYH2o.org

