

Water Quality Impacts from Marcellus Shale Natural Gas Drilling (Chapter 5)



Special thanks for the pictures to Bob Donnan

www.marcellus-shale.us



CLEAN WATER
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Why is Our Water Threatened ?

- **Safe Drinking Water Act**

- Since 1974, provided regulatory protection of drinking water
- Calls for monitoring of underground injection of chemicals that may come in contact with drinking water supplies

- **The 2005 Energy Policy Act**

- Bush administration pushed and Congress approved exemption of hydraulic fracturing from the regulatory authority of the Safe Drinking Water Act

- **Absence of Federal Regulations**

- States are left to determine monitoring protocols for hydraulic fracturing.
- As is the case with many issues where a clear lack of federal regulation exists, a patchwork of state regulations governs the process.
- Most state regulation does the bare minimum of merely collecting data on fracturing operations.

Impacts Are Inevitable

“A natural gas drilling boom would inevitably result in some environmental damage including possible contamination of water supplies.”

-Former DEP Secretary John Hanger-

Water Supply Sources :

- Ground Water
- Surface Water

Threats to Water Supply Sources :

- Poor Treatment
- Frac Pits
- Stormwater Management
- Cement Casings

Wastewater Treatment Facilities (Surface Water)



- PA has 1 facility are capable of handling “frac water”. Typically it is diluted before being dumped back into our rivers.
- Some public water utilities downstream from big gas wastewater treatment plants have struggled to stay under the federal maximum for contaminants known as trihalomethanes, which can cause cancer if swallowed over a long period.
- In 2008 and 2009, the Mon did not meet drinking water standards.
- At least 3.6 million barrels of the waste were sent to treatment plants that empty into rivers during the 12 months ending June 30.

Stormwater Management (Surface Water)

- The drilling process is allowed as close as 200 feet from a water supply.
- DEP “streamlined” stormwater permits, allowing companies to write their own plans without DEP review.
- County Conservation Dist were removed from E & S permitting process
- 119 Violations in 2010



Frac Pits

(Surface & Ground Water)

- **Frac pits are lined with a synthetic liner made of acrylonitrile, which is toxic. These liners often develop tears.**
- **Liners are disposed of by simply burying them in the frac pit.**
- **303 violations in 2010 (the most frequent)**



Cement Casing

(Ground Water)

“ Until recently, DEP inspectors simply weren’t looking at cement grade during their survey.”

-Former DEP Deputy Secretary J Scott Roberts-

- **There’s different grinds (for) different kinds of cement. Most of the cements around here (are) built for resistance. But the cement necessary to protect the pipes and what’s inside them from the different levels of freshwater aquifers, soil and porous layers of rock that stretch to the harder Marcellus Shale has a different function. It must withstand pressure and temperature unlike that of buildings and bridges.**
- **84 violations were sited for improper cementing/casing of wells in 2010.**
- **Cabot Oil and Gas, a Texas-based company with regional headquarters in Pittsburgh, received violation notices from the DEP for improperly cementing its wells in Dimock Township, where water wells were found to have gas in them and a leak caused one well to explode.**

Your Water Might Be Contaminated If...





CLEAN WATER ACTION

www.cleanwateraction.org/pa

Myron Arnowitt

State Director

412-765-3053 x 203

marnowitt@cleanwater.org

Steve Hvozdovich

Marcellus Shale Policy Associate

412-765-3053 x 210

shvozdovich@cleanwater.org