

Dimock, PA Fracking Disaster

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Introduction

Pennsylvania was an epicenter for natural gas pipeline installation and fracking operations in the early 2010's. Just days after fracking began in the area Dimock PA was hit with a major problem, mass contamination in the fresh groundwater supply, Dimock relies on groundwater to give the people of there town fresh and clean water. The populations water turned immediately brown causing major concern on the quality of the water since fracking began. The water was filled with alarmedly high concentrations of very harmful chemicals that posed a risk to everyone in the town of Dimock.



Figure 1: Dimock PA on a map



Figure 2: Oil Drilling Rig

Human Health Risks

With all these chemicals in the water it creates not just risk for human health for physical hazards as well. All data below comes from EPA.gov⁷

- **Arsenic:** Skin damage or problems with circulatory systems, and may have increased risk of getting cancer
- **Lead:** infants and children: Delays in physical or mental development; children could show slight deficits in attention span and learning abilities. Adults, kidney problems; high blood pressure
- **Copper:** Short term exposure can cause gastrointestinal distress Long term exposure can cause liver or kidney damage
- **Lithium:** Can cause massive amounts respiratory system issues and gastrointestinal issues.
- **Methane:** Can causes toxic fumes that harm the respiratory system, if sparked can cause explosion
- **Barium:** Causes respiratory problems.



Figure 3: Methane making water flammable



Figure 4: Water Discoloration

Populations Reaction

- Residents protest in front of EPA Administrator in Philadelphia¹⁰
- Demand an order of fresh clean water¹⁰
- Lawsuits against drilling companies
- Cabot Oil & Gas Corp Pays 16.3 Millions Dollars for a new public water system⁴
- Company will Cover water bills for 75 years⁴
- 4.7 Million Dollar lawsuit against Cabot Oil & Gas Corp⁹



Figure 5: Protesting in Philadelphia

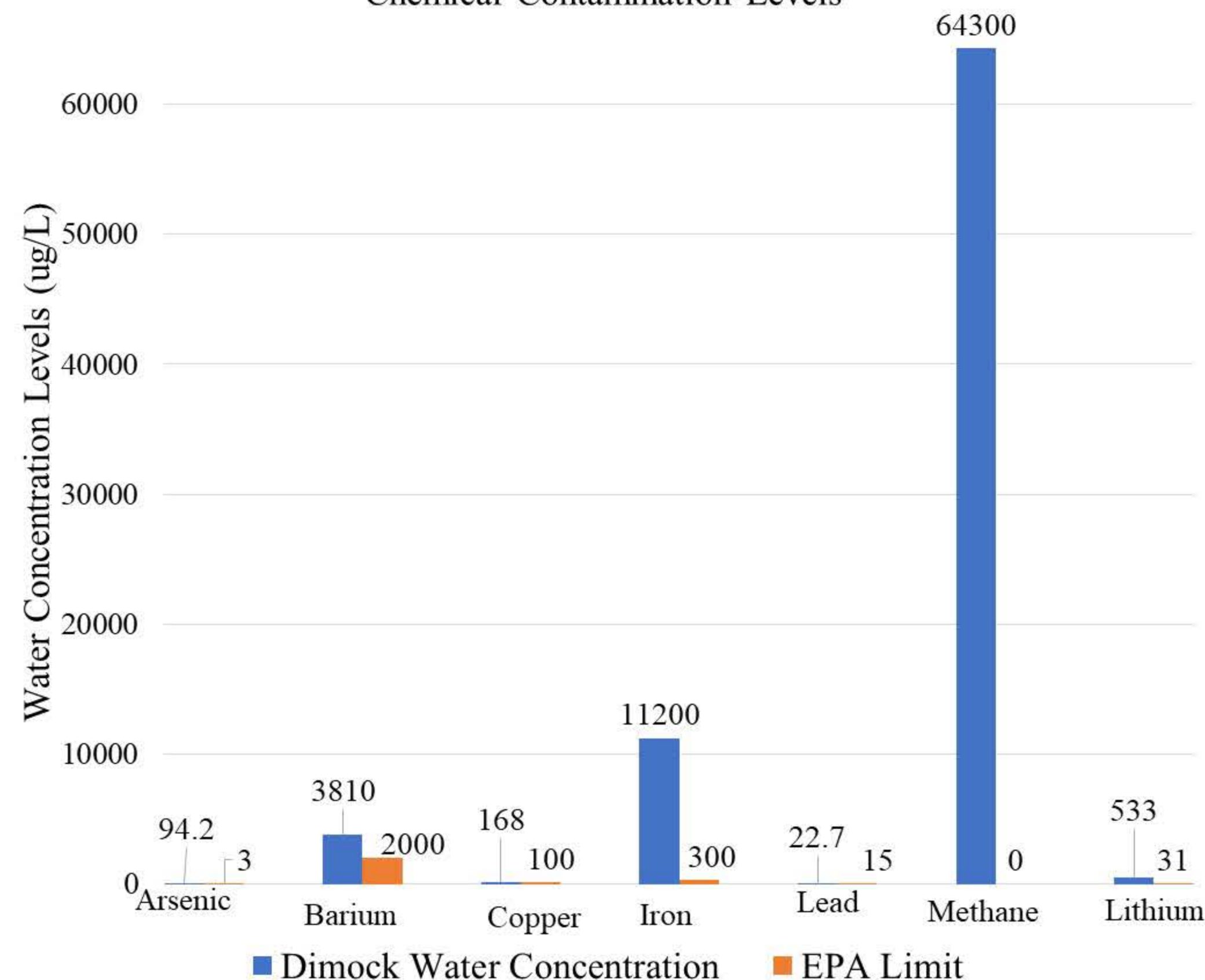


Figure 6: Protesting in Front of EPA Building

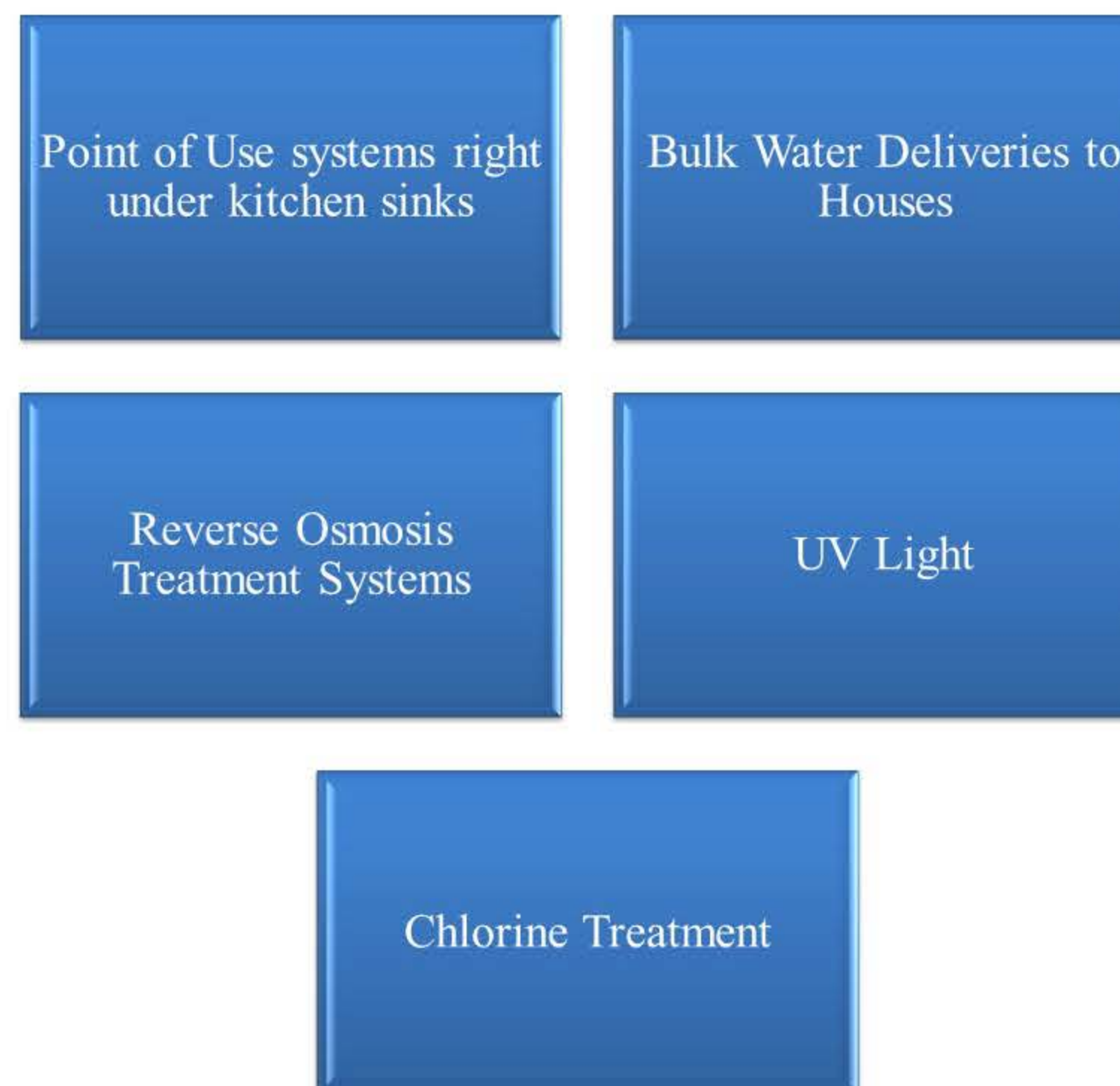
High levels of Chemicals

In 2012 64 wells in Dimock were samples with the results shown below. Along with countless other chemicals these were the biggest ones that posed the biggest risk. Data taken from ATSDR¹ and EPA.gov⁷

Chemical Contamination Levels



EPA Recommended Treatment Methods



All Treatment methods come from ATSDR.gov⁸

References

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- 5.) "Dimock Water Contamination Verdict Prompts Calls for Federal Action on Fracking." *Resilience*, 15 Dec. 2020. <https://www.resilience.org/stories/2016-03-18/dimock-water-contamination-verdict-prompts-calls-for-federal-action-on-fracking/>.
- 6.) Engelder, Terry, and John F. Zevenbergen. "Analysis of a gas explosion in Dimock PA (USA) during fracking operations in the Marcellus gas shale." *Process Safety and Environmental Protection* 117 (2018): 61-66.
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- 9.) "Pennsylvania Couples Win \$4.24 Million in Lawsuit against Fracking Company." *PhillyVoice*, 10 Mar. 2016. <https://www.phillyvoice.com/pennsylvania-couples-win-47-million-lawsuit-against-fracking-company/#:~:text=Two%20couples%20from%20Dimock%20Township%20in%20northeastern%20Pennsylvania.a%20result%20of%20its%20natural%20gas%20drilling%20projects.>
- 10.) "Upstate PA. Residents Affected by Fracking Protest at EPA Head's Visit to Philadelphia." *CBS News*. CBS Interactive, 13 Jan. 2012. <https://www.cbsnews.com/philadelphia/news/upstate-pa-residents-affected-by-fracking-protest-at-epa-heads-visit-to-philadelphia/>.