Marcellus gas well activity in Washington County, Pennsylvania

Photo 1: A "Super Misting" pit location as seen from Google Earth.

I am a concerned citizen of Pennsylvania. I am not a scientist, and I do not claim to be "in the know" about the procedures of the gas drilling industry. I am struggling to understand the bigger picture: I want to know the intentions of Marcellus Shale drilling companies; I want to know the possible impact that Marcellus Shale drilling will have on my life, my land, and my neighborhood. The purpose and spirit of this document is to present what I have learned, voice my concerns, and ask some questions. I hope that this photo essay inspires you to ask some questions of your own about what I call the "Super

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Misting" pits, and about the public's right to know what's happening in their own back yards.

The gas extraction industry is not saying much about their presence here, and many of the people that live in the affected areas do not seem to know a whole lot about this issue.

How I Learned About Marcellus Shale Drilling

Late last year (2009) it first came to my attention that the Marcellus Shale well-drilling industry was possibly coming to our area in Westmoreland County. The town criers were trumpeting prosperity and "riches beyond belief," encouraging us and the land owners around us to get on board and sign a lease with the gas company. The only thing I knew about gas wells at that time was what I had seen all over our area—but those were not Marcellus Shale wells. I guess they call them "surface" gas wells. They are small green tanks with some piping around them. They are usually tucked neatly away in a field with grass and flowers around them; you might even see a bird of prey sitting on top of one. I did not see much of an issue with them.

So I started to do some research on the Internet about gas wells, and I found many articles about people that are having problems living around Marcellus Shale wells; people who claim that the drilling procedures ruined their land and water (Do a Google search for the name **Ron Gulla,** or the town of **Dimock, Pa.**, for more information).

It was at about this same time that I also heard people talking about a Marcellus well being set up in our area close by, so I went to have a look. As I drove over the hill and looked down on the area, my first impression was that it looked like they were putting in a Wal-Mart. Until then, I had no idea that this type of gas well took up so much acreage, and all I could think of on the way home was the size. That was my first "wake up call" about the fact that there is a big difference between the small "surface" gas wells that have dotted Pennsylvania farms for ages and the new Marcellus wells. I could see that I needed to find out more.

Over the next several months, I did research on the subject, and I came across many concerns voiced by other citizens about the Marcellus Shale gas extraction industry, as well as information about the extraction process. The millions of gallons of water used to extract the gas, the gas companies' lack of disclosure of toxic fracking chemicals used in the process, "trade secrets," the fact that Marcellus extraction companies get exemptions from federal laws that oversee the safety of our clean water and air, and the many complaints from families affected by drilling who complain of a loss of quality of life. I started to realize that this whole issue was really massive and complex. I think the information that bothered me the most was from Penn State's Web site on the subject, which says that according to current projections, gas companies plan to drill 30,000 Marcellus wells in the next ten years throughout central Pennsylvania, with more to come later.

Google Earth

For my home research project on this issue, I had been using the Internet, and Google Earth in particular, to get familiar with the counties of Pennsylvania, the surrounding landscape, and the rivers. Google Earth is a free satellite image viewing program that you

can use on the Internet (www.earth.google.com). Early in the project, I noticed that the satellite images (tiles) that were used were very outdated (roughly eight to ten years old) and were extremely low resolution. There was no visual record of Marcellus well drilling.

But in September 2010, I was on Google Earth and I noticed that the satellite images had changed in our area; they had been upgraded. Based on known changes in our area, the new satellite images were from around the first of June, 2010 and were available on the Internet by sometime in late August 2010. Also, the updated images are very high resolution. So I started to look to other areas to see if I could find Marcellus drilling sites. By this time, I had seen many photos of the Marcellus gas well drilling process on the Internet, so I knew what to look for. It was not difficult to find Marcellus drilling sites as I scanned over parts of Washington County. Newly cleared pads with rectangular dark waste pits, trucks lined up, piping and entry roads—they all have a familiar look, and they're available for everyone to see on Google Earth (See photo 2).

Photo 2

I found that Google Earth's satellite images of much of Washington County and Westmoreland County have been updated; I assume other new county images will follow. So now we have a satellite snap shot from around June 2010 of Marcellus well activity in these areas for all to inspect.

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The Super Misting Pit on Google Earth

The thing that caught my attention the most as I scanned around Washington County on Google Earth was what I saw in photos 1 and 3. I have seen photos of small waste pits before, and some had small misting heads on them. The purpose of the misting heads, I have been told, is to help get the waste water to evaporate. When I saw the size of this pit, and the size of the misting heads, I knew I had found something significant. It took me several days of looking at this image to realize just how big it is. Notice the house and car in the lower left of the photo. Notice the size of the twelve large misting heads in relation to the houses. I would estimate the pit is six to seven acres (see photos 1 and 3).

Photo 3: This pit is not visible at all from the road.

Photo 3b: Compare the size of the misting head on the right to the size of the cars and trucks on the left.

A Tour of Mcadams Road In Washington County, Pa.

After several days of looking at this image I decided to go to the area to see for myself what this thing looked like from ground level. The location of this particular misting pit is about five miles south of the town of Washington, just off Interstate 79 on Mcadams Road (See photo 4).

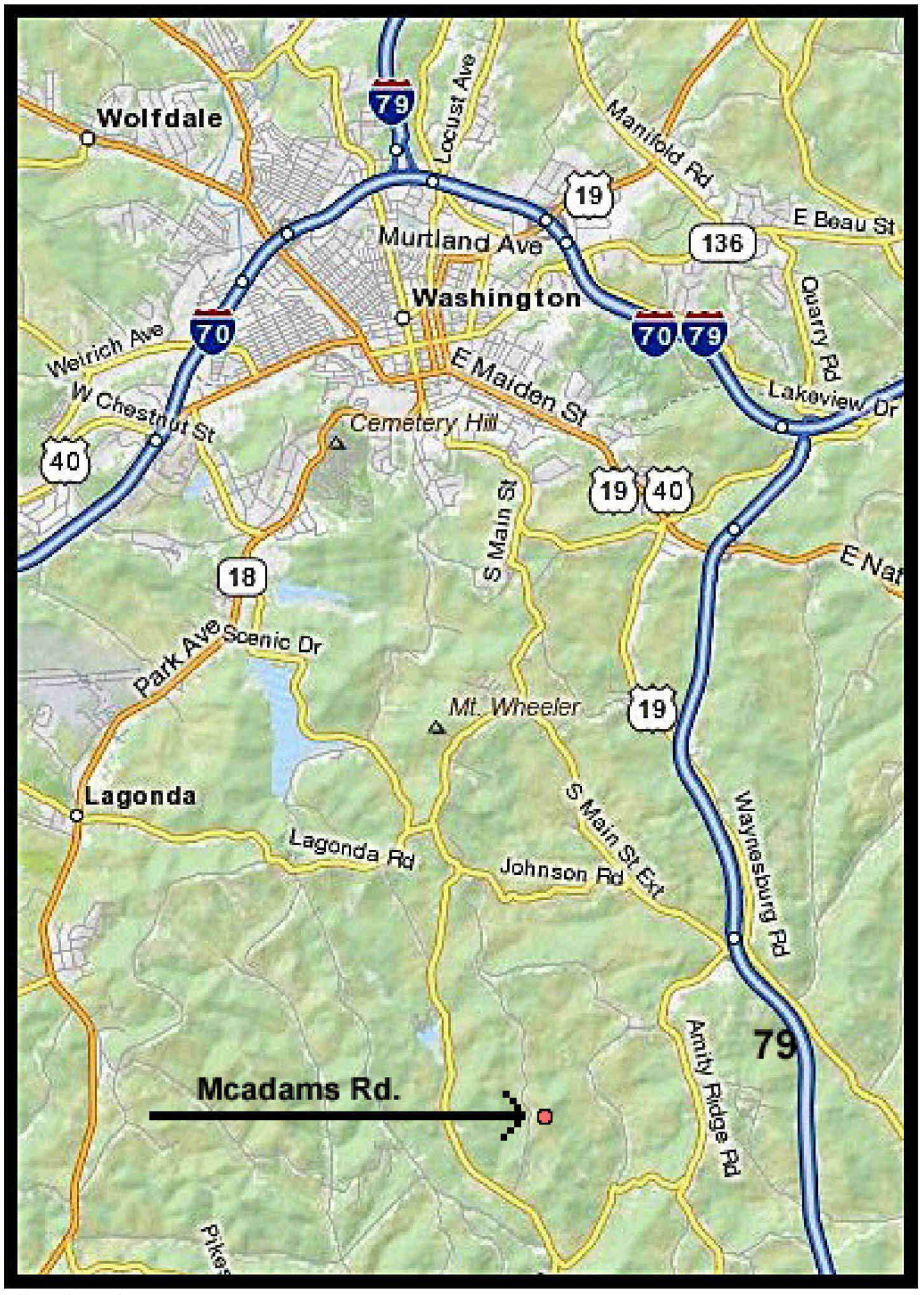

Photo 4

As I drove on Mcadams Road, the first thing I noticed was the amount of water that was on this road. This was September 3, 2010, at around noon. We had just had a long spell with no rain—several weeks—and on this day, the temperature was in the 90s. It was hot and hadn't rained, but most of the road was saturated with water.

Photo 5

I also noticed a large amount of "gray splash" on the bushes and grass that lined the road. Everything had a gray look to it (see photos 6 and 7).

Photo 6

Photo 7

I did not see any waste water trucks on this visit; I have no direct knowledge of how this water got here. But I do suspect that it is directly related to the massive waste pit nearby.

Photo 8

Photo 9

Further up the road, I came to the guard shack entrance of the "Super Mister" (Photo 9). If I had not seen this massive pit on Google Earth's newly updated images, I never would have known it was here. Photo 9 shows what you can see from the road. I can see why the neighbors that I talked to in this area were not aware that it was there. The red arrow

points to the faint distant fence pole at the very top corner of the misting pit (the red arrow in photo 3 points to the same post).

Photo 10

There were two yellow containers just above the guard shack with a sign that reads, "Spill Control Kits and Disposal."

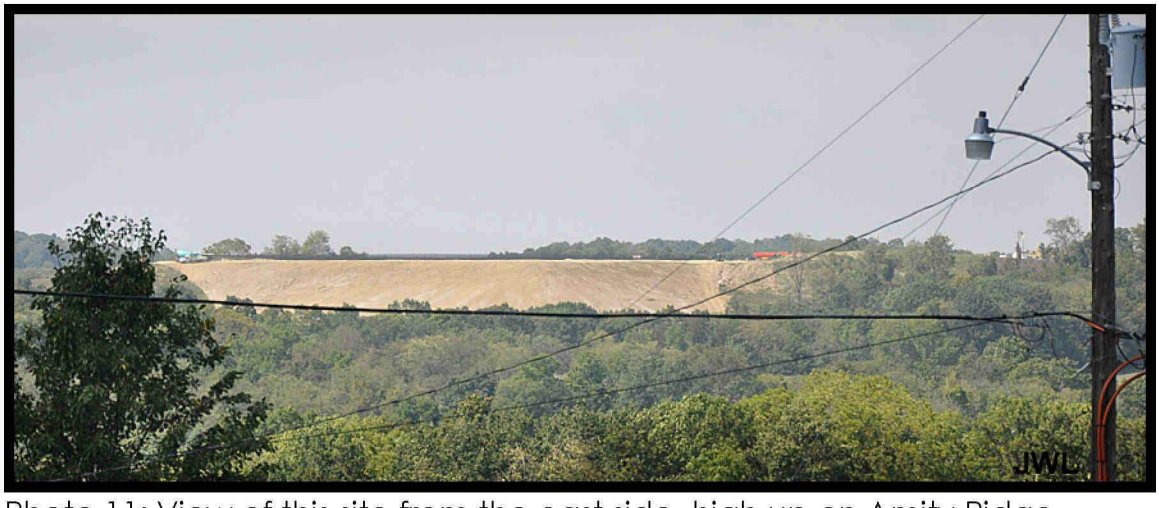

Photo 11: View of this site from the east side, high up on Amity Ridge Road, looking to the southwest. The misting heads are not visible from this vantage either.

Photo 12

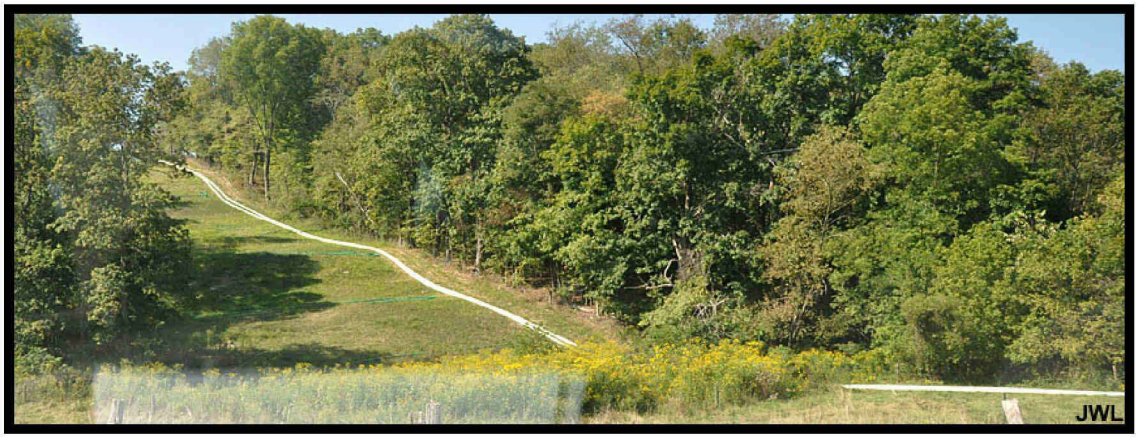

Photo 13

Some of the area water pits and gas wells are connected with a network of piping. The company used existing road culverts to run the pipes along and to get the pipes under intersecting roads and driveways. It looks like the well's delivery pipes almost completely block the pre-existing road culverts (see photo 12). Does this not block the water runoff flow? Where will the water go when it rains hard?

Comments From Area Residents I Interviewed

"This has been going on for two and a half years, day and night, twenty-four/seven. The trucks; the noise—I have trouble sleeping at night."

"I have not received any royalties for two and a half years, and they say it will probably be another year and a half before we do. The gas company says that the wells are on standby, no production."

"I wish we would have had the township put operating time restriction on the activity."

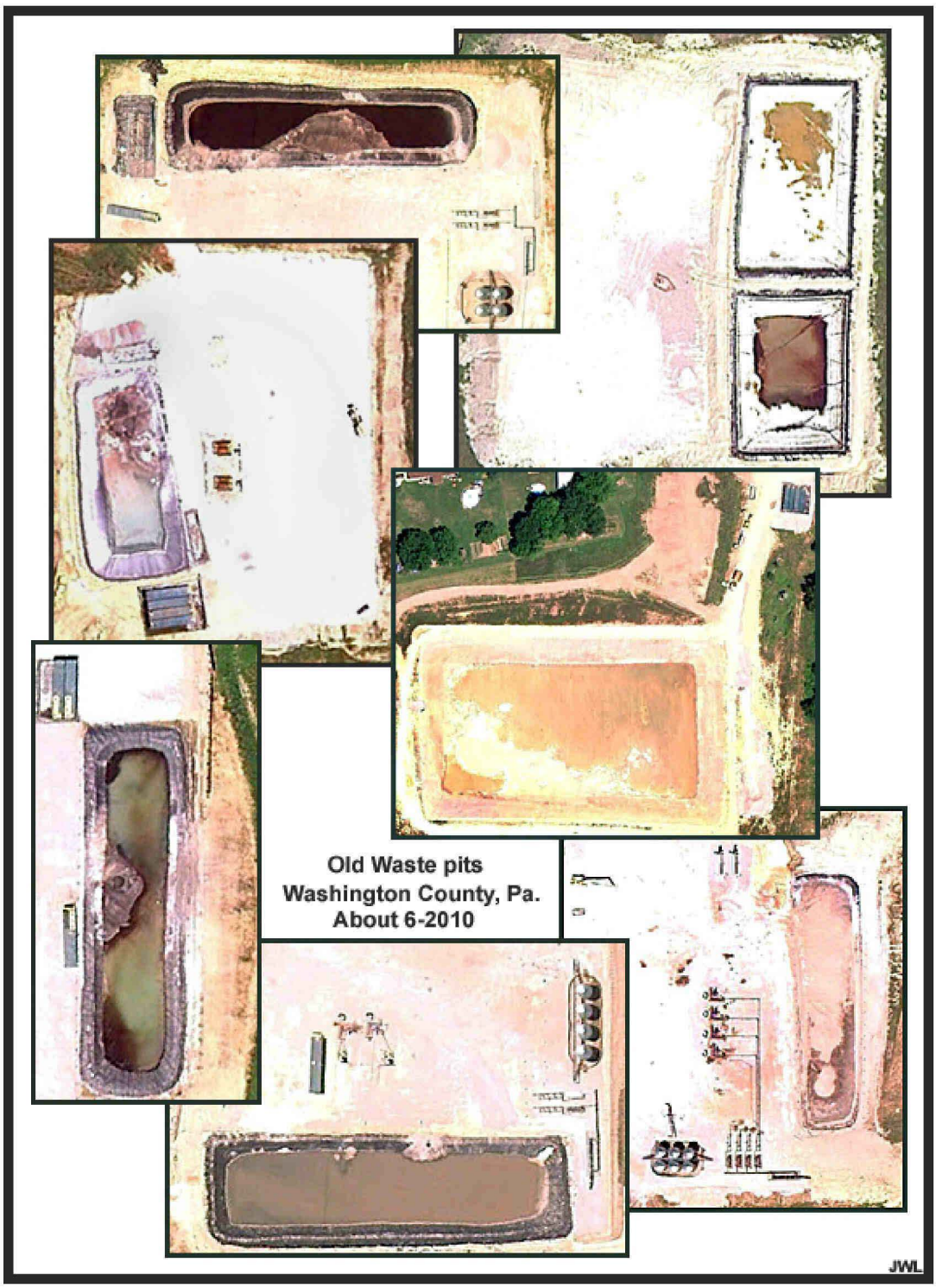

Photo 14

Another thing that I noticed while touring Google Earth was the number of old waste pits. In the **1984** Pennsylvania Oil & Gas Act 223, Chapter 2, the section on "well site restoration" states that: "**(c) Within nine months after completion of drilling of any well, the owner or operator shall restore, remove or fill all pits used to contain produced fluids or industrial waste and remove all drilling supplies and equipment not needed for production."** Why are there so many of these old waste pits left open and not restored?

Some of my questions, concerns and comments

1) What is in the water that is being misted?

There seems to be an ongoing debate concerning the waste sludge that comes out of the drilled well and fracking process as processed waste. Industry representatives keep saying that it is only water, sand, and foaming agent. But third-party researchers say this is far from the truth. Dr. Theo Colburn, resident of Colorado, has done extensive research with collected samples reclaimed from large spills that have occurred. Dr. Colburn, in her presentation, says air quality is also an issue: "Drilling may produce a number of airborne pollutants as well. These pollutants may include heavy metals such as arsenic and mercury, and radioactive materials. Fugitive methane and volatile organic chemicals may be released directly into the air around a well site. In addition to methane, these chemicals may contain the "BTEX" complex (benzene, toluene, ethylbenzene and xylene)…" This seems to be a hard issue to pin down, especially when the gas extraction industries will not tell researchers or the public all the chemicals that they are putting into the ground, claiming that they are "trade secrets." And, the companies are exempt from some of the regulations in the federal Clean Air Act, the Clean Water Act, and other environmental legislation. If it is the case that this waste water sludge is heavily carcinogenic, misting it into the air in such high quantities would seem criminal. Are these private corporations really that powerful that they can dismantle environmental safeguards that our government has put into place to protect our air and water?

The misting pits are being used to help get rid of the waste water. If it is bad to dump the waste water in the Monongahela River, or to pave the roads with it, and if the sewage plants cannot process it properly, why is it OK to mist it into the atmosphere? Are these not issues that the public has a right to know about? Or is the public just in the way?

2) Where, exactly, is all this gray road water coming from?

3) What is the actual size and volume of this misting pit?

4) How much waste water does this misting pit actually mist to the atmosphere? What is the chemical make-up of the mist?

5) How many more of these misting pits are there? (I have found others.) And how many more will be built?

6) Is this industry allowed to clog existing road runoff drains?

7) Why must the neighbors suffer through the round-the-clock noise and commotion of the operation year after year?

8) Why are there so many old waste pits left open and not restored as required by law?

9) The DEP (Department of Environmental Protection) of Pennsylvania is going through some of the biggest budget cuts it has ever seen. In the last ten years, there have been budget cuts of almost 60 percent. Can the DEP do its job in light of these numbers? Is this not a prescription for a "Perfect Storm" to an accumulative, environmental disaster? Are we really so desperate that we need to fast-track this gas extraction at the expense of our health, environment, and future generations?

10) Over the past year, I have heard a lot of very aggressive and vociferous land owners pronouncing their "rights" to make money off of their property without some neighbor hindering them or getting in their way. I basically agree with this "right" that they talk about, except when it interferes with the Constitution of the Commonwealth of Pennsylvania, Article 1, Section 27, which states: **"The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people."**

The apparent zeal our state and local representatives (trustees) have demonstrated to fast-track the extraction of Marcellus gas, leads me to wonder whether they are taking into account this constitutional right of the people of Pennsylvania when they make their decisions. That right should trump corporate and private profits. I guess it comes down to a question of values.

11) In 1984 the State of Pennsylvania specifically created the Oil and Gas Act 223 for this purpose:

Oil and Gas Act 223
Chapter 1
Sec. 601.102. Declaration of purpose

The purposes of this act are to:
(1) Permit the optimal development of the oil and gas resources of Pennsylvania consistent with the protection of the health, safety, environment and property of the citizens of the Commonwealth.
(2) Protect the safety of personnel and facilities employed in the exploration, development, storage and production of natural gas or oil or the mining of coal.
(3) Protect the safety and property rights of persons residing in areas where such exploration, development, storage or production occurs.
(4) Protect the natural resources, environmental rights and values secured by the Pennsylvania Constitution.

Do we now have a healthy sustainable balance between "optimal development…" **and** "protection; health; safety; environment; property rights; and values secured by the Pennsylvania Constitution"? Or, are we suffering from an epidemic of a very contagious psychological condition called, "Gold Fever"?

A repeated pattern of disasters

It seems that just about every month or so you hear on the news of another environmental disaster caused by industrial and fossil fuel corporations:

2009—Water contamination in the town of Dimock, Pa. The Associated Press wrote in October 2010 that "John Hanger (DEP) blames the methane contamination of the Dimock aquifer on faulty Marcellus Shale gas wells drilled by Cabot. The company vigorously denies responsibility for the pollution. It took out a newspaper ad and released a 29-page rebuttal document this week in which Cabot's chief executive officer, Dan Dinges, lambasted Hanger and his agency for 'political pandering' and abuse of authority."

April 2010—BP's Deepwater Horizon drill rig explodes, killing eleven people and causing the largest marine oil spill in industry history, discharging 185 million gallons of oil into the Gulf of Mexico, almost 20 times more than the Exxon Valdez spill in 1989.

June 2010—Well blowout in Clearfield, Pa. Workers lost control of the well on the Punxsutawney Hunting Club grounds, and it unleashed a combustible 75-foot fountain of natural gas and toxic wastewater. The gusher spewed for 16 hours before containment.

July 2010—Shallow gas well explodes in Indiana Township, Pa., killing two people.

September 2010—In San Francisco, an aging gas pipe explodes in a rural neighborhood, killing eight people and destroying 37 homes. The plans and location of the pipe were kept from the public. Most people did not even know a 30-inch gas main ran under their neighborhood.

October 2010—A toxic pond collapses in Hungary, killing four people and spilling 180 million gallons and threatening the Danube River. The Associated Press reported that Kolontar Mayor Karoly Tili noted that the disaster occurred only a week after Hungarian environmental authorities had declared the reservoir safe. "People are scared," he told the AP. "People no longer trust or believe what is said about the reservoir." MAL Rt., the Hungarian Aluminum Production and Trade Company, which owns the Ajkai Timfoldgyar plant where the spill occurred, insist the sludge is not considered hazardous waste according to European Union standards.

Hope springs eternal

It is my hope that this photo essay will encourage others to ask important questions about the pressing issue of Marcellus Shale drilling in their area. Be informed.

Please spend some time on Google Earth. Take a look at the satellite images of Washington County and see the Marcellus gas well activity that has been going on there for the past four years. And keep in mind that activity is going to double next year (2011), and that an estimated 30,000 wells will be put in place throughout central Pennsylvania in the next ten years.

Jay Langham
10-5-2010

Credits and Additional Information:

● I would like to thank the courageous people from all states that are coming forward and telling the other side of the story about the Marcellus Shale gas extraction process, and giving their first-hand accounts of what it is like to live around a Marcellus well.
● Satellite images from Google Earth: www.earth.google.com
● Map from MapQuest: www.mapquest.com
● Dr. Theo Colburn: www.endocrinedisruption.com.
● All images are in Washington County, Pennsylvania.
● Book resource: *Toxic Sludge Is Good For You: Lies, Damn Lies and The Public Relations Industry* by John Stauber and Sheldon Rampton
● Ground photos by Jay Langham
● Super Misting pit location:
40° 05'22.39" N
80° 13'40.04" W

● Release statement:
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