

This American Life
Episode 440
"Game Changer"
July 8, 2011

This transcript contains material from the podcast/online version of the story which was not part of the broadcast version due to time constraints.

Back in December of 2007, Terry Engelder, a geologist at Penn State University, put a piece of scrap paper from the recycling bin under his desk, and made a calculation.

Terry: What you see here are numbers for thickness and then aerial extent, and porosity is part of this calculation.

Ah, porosity. Engelder was trying to figure out the answer to a very, very basic question – something someone had asked him just in passing.

Terry: He said “Oh, by the way, how much gas is in the Marcellus?” And I hadn’t actually thought of that.

Exactly how much natural gas was trapped in the Marcellus, which is a giant rock formation - a kind of rock called shale - that runs underneath Pennsylvania, where Engelder was actually sitting, and New York, and into Ohio, New Jersey, West Virginia and Maryland. And which we now know, thanks to Engelder, is the second largest natural gas field in the world, the largest outside the Mideast.

Terry: And it just so happened that no one, at least in the public domain, up to that particular point in time had actually sat down and done the calculation. And so I found out and was astounded by the numbers.

His result? Fifty trillion cubic feet of natural gas. It sounded impossible. Engelder went online to see what the U.S. Geological Survey was estimating for the Marcellus. Their number was less than 2 trillion cubic feet. Engelder’s was 50 trillion cubic feet, conservatively. So he crumpled up his scrap paper.

Terry: And said “Oh boy, you know. There, into the trash bin.” And first of all, I didn’t believe it.

Engelder wanted a second opinion, so he sent the problem to a colleague at another university. Didn’t tell him what he’d come up with. Just let him have at it over the evening.

Terry: And then he called me the next morning in great excitement and said, “Gee, this is huge. What does this mean?”

What 50 trillion cubic feet of natural gas means, he says, is that America was about to have a revolution in how it powers itself. Right now, natural gas makes up about 25 percent of our nation's energy supply. It's used for heating over half the nation's homes, for making electricity, for all kinds of stuff. And we import lots of it.

But the country was suddenly getting access to all sorts of domestic shale deposits full of gas, the Marcellus chief among them, that could make it so we don't have to import natural gas for decades. This would make energy cheaper, create jobs in America. Conceivably natural gas could replace some of the coal and oil we use. It could change everything.

This realization and the fact that he alone knew it, and the entire country soon would know it, Engelder says that as he was driving home that day, it was like an out of body experience. It was like falling in love.

Terry: It really was like walking on air. The car was floating 10 feet off the ground as I was driving home with this music from Strauss in the 19th century, who had written this piece for the emperor of the Austro-Hungarian empire. Do you know the piece?

[music]

It was late December, right before Christmas, and a thought came to him...

Terry: The thought was "Merry Christmas America. You're in for a real treat."

It's a line Engelder's used elsewhere – it's been published in National Geographic and in Time Magazine. By the time our show talked to him, Engelder had talked to 208 reporters (yes, he counted). He gets multiple messages every week asking for interviews.

Message: Hi Dr. Engelder, I wanted to see if I could chat with you a little bit more.

He's been offered jobs by oil and gas companies. He's constantly flying around giving speeches. He was up to 198 (and yes, he counted that too). He started a consulting company and a research group. He's testified before Congress.

In May the president of Penn State University called Engelder a rock star (get it – rock star?) at a trustees meeting.

The message of his work: that there are huge gas reserves in Pennsylvania, and a lot of people can make a lot of money — from homeowners leasing their land for drilling, to all the jobs and side businesses to that support the industry. That Pennsylvania could become Texas. That message squared perfectly with what the oil and gas industry and what politicians in the state of Pennsylvania wanted to hear.

But travel with me now, across the state, to another university. The University of Pittsburgh, where another professor did an entirely different calculation. He came up with numbers that pretty much nobody – or at least nobody with any real power — wanted to hear. And now, he’s unemployed.

Dan: This Marcellus issue is probably, has more political capital associated with it than any other issue I’ve ever been around.

Dan Volz is the director of the Center for Healthy Environments & Communities at the University of Pittsburgh’s Graduate School of Public Health. Or he was, until about a month ago.

Dan: Everybody believes that this issue is going to save us from economic ruin, that we’re going to generate all kinds of jobs from this. I have a completely different view from that but that’s the prevailing political mood.

Today on our radio program, what happened when the big institutions of a state - the universities, industry and government - all joined forces to push for natural gas? That’s what happened in Pennsylvania. Other states have been far more cautious.

The people involved call the discovery of all this gas in the United States a game changer. But the only reason this matters at all is that in the last decade, technology was developed that can extract the gas from these rocks.

The process is called (the full name, get ready) horizontal, high-volume, slick-water hydraulic fracturing. Fracking. You may have heard of fracking, which basically means, they drill a hole into the earth, they pump a huge volume of water (millions of gallons), mixed with sand and chemicals, down into that well, into the rock. It pushes out the gas that is trapped in the shale, which then surges back up the well, and lots of that chemically treated water comes back up too, now mixed with other stuff that’s been a mile underground for eons, like huge amounts of salt.

How to handle that wastewater is one of the tricky things about all this.

From WBEZ Chicago, it’s This American Life, distributed by Public Radio International. I’m Ira Glass. Today on our program, what happens to a state when it’s hit with a game changer like natural gas has hit Pennsylvania. One of our producers, Sarah Koenig, lives in Pennsylvania and has been looking into this for months. Our show in two acts, the first in the state’s universities, the second in a small town.

Let’s begin at the universities, which people of course turn to for objective, neutral, unbiased analysis. That’s act one of our show: “You’ve Got Shale.”

Here’s Sarah.

Sarah: The story of that second guy Dan Volz's calculation, at first sounds an awful lot like Terry Engelder's. A couple of years after drilling had started in Pennsylvania, he also figured out something no one else had bothered to calculate: How much toxic crap, chemicals and other pollution from gas drilling was getting into water supplies.

Treatment plants were taking in the waste, supposedly cleaning it up and then releasing it into bodies of water like the Monongahela River in Pittsburgh, which actually runs right in back of Volz's office building.

Dan: I essentially did a calculation, looking at these 13 or so wastewater facilities. Every day, if these wastewater treatment plants were accepting their total allotment of oil and gas waste, they'd be putting something on the order of 800,000 pounds of solids into the river a day. And this would include tons and tons of things like strontium and bromium and barium.

High levels of strontium and bromium can cause cancer and birth defects. Barium is a heavy metal, which can be poisonous if you ingest enough of it.

Dan: That's just like backing up a dump truck full of powdered barium, and having about 16 of them, just dump that right into the Monongahela River. There's just no difference and I shocked myself.

I said to myself, this can't be and I went to my wife actually, and I said "You better look at my calculations for me."

Sarah: Is she also a scientist?

Dan: She's a physician. But she's a better mathematician than I am, so she looked at it and said "Well, Dan I think you're calculations are correct."

So Volz told the outside world about his calculation – the 800,000 pounds. Talked to community groups, gave seminars on it, told the Pennsylvania Department of Environmental Protection, put it on his center's website. And, of course, he told his boss.

Dan: I did bring this to the Dean's attention about this time last year, and gave him a presentation on it. And he is concerned, and he was concerned, but you know deans and administrators and department heads are busy people looking at lots of different things.

OK, so we'll come back to Volz in a bit but compare this reaction that Dan Volz gets from the higher ups at Pitt, to the one that that first guy, Terry Engelder, gets back at Penn State, when he tells his dean about his calculation. Here's Engelder.

Terry: And the dean's reaction was, "Boy the president of the university needs to know about this."

So the dean tells the provost and the president and within 24 hours word comes down from the president's office that they'd like Engelder to sit on this discovery – not tell anyone for about a month. The president wants to announce it at the next trustees meeting. A discovery like this helps Penn State's president with one of the most important parts of his job, which is to be constantly reminding lawmakers and donors why they should keep supporting the university. He can say, "See? Your investment in us does pay off! For every dollar you invest, you'll get back 10 or a 100" – or whatever the number is.

Terry: Well the upcoming board of trustees meeting was the 17th of January.

So that same day, the 17th of January, 2008, Penn State issued a press release on the Marcellus. It quoted Engelder as saying the discovery could be worth a trillion dollars. With that, Penn State positioned itself as an early booster of gas drilling in the state.

And I want to be clear here, that Penn State isn't monolithic and that there are other people at the university who are doing Marcellus work: on its effects on well water and song birds, on the chemicals in frack water, on how industry money is being spread around, on how communities are being affected.

But in the early days of this gas boom in Pennsylvania, it's fair to say the university quickly got a reputation of not really questioning whether this whole venture was necessarily a good idea.

Myron Arnowitz runs an environmental group in Pennsylvania called Clean Water Action. And he's gone to dozens of panels around the state, talking to citizens about gas drilling. He said the panels usually had someone representing the gas industry, someone from government, and often, someone from Penn State.

Myron: Very often on these panels, you know the industry will speak and say "There's never been a problem with gas drilling ever. No one has anything to worry about." And we'll get up and say "You know here are all the problems that have happened, here are the problems that can happen, and this is why we're worried about it."

And then the guy from Penn State will get up and say "You can make a lot of money from gas drilling. Pennsylvania is in an economic wonderland because there is all this drilling that can happen in our state."

And then someone from the audience will ask the Penn State person who they kind of thought was at least impartial or even knowing something about the environment will say "Well, what about some of the environmental risks? And the Penn State person - and I've been in multiple times when this has happened - the Penn State person will say, "You know, I don't really know a lot about that. You should ask Clean Water Action."

And it was just like a bizarre moment because I think people were obviously asking them because they wanted someone like an institution like Penn State to speak to what the environmental risks might be and they just wouldn't do it.

I heard this over and over again, from all kinds of people — that they don't trust Penn State on this issue. A researcher doing field surveys in rural towns about the gas industry told me it was sometimes hard to get people to talk or answer questions once they found out the research was being conducted by Penn State. Another scientist looking at water quality told me when he does public presentations around the state, he said he sometimes gets booed and heckled and yelled at. He's had a finger poked at his chest by people who assume that because he's from Penn State, he's in industry's pocket.

Besides Engelder's announcement, the other piece of Penn State research that got a lot of attention was an economics report, put out by the College of Earth and Mineral Sciences in 2009. It concluded that gas production could be generating \$13.5 billion in value added and almost 175,000 jobs in 2020. Later that was revised upward, to 212,000 jobs. Vastly higher than what the State Department of Labor and Industry was estimating.

Furthermore, the study said, taxing natural gas production would be a bad idea. Keep in mind, whether to impose a tax was and is a big debate in Pennsylvania - it's the only state that doesn't tax gas production, and companies would like to keep it that way.

So no, don't tax it, the Penn State report said. And not only that, don't regulate it, either. Quote: "Proposals to regulate hydraulic fracturing under the federal Safe Drinking Water Act pose yet another serious threat to the development of the Marcellus Shale."

Industry couldn't have paid for better advertising. And it, turned out, when activists made a stink about this: industry had paid for it. A group of gas and energy companies had sponsored the thing, had asked Penn State to create it, using data the industry provided. But the numbers did as numbers do, they took on a life of their own, as evidence in the case for drilling.

Tom Ridge: Literally thousands and thousands of jobs out there. I've seen some estimates go as high as 200,000 jobs over the next 10 years. So obviously there's a lot of potential there.

That's former Pennsylvania Governor Tom Ridge, who's now working for the industry's Marcellus Shale Coalition, talking to small business owners in April. And here's Senator James Inhofe of Oklahoma, at a committee hearing, citing Penn State to support the idea that there should be no federal regulation of fracking.

Inhofe: I would also like to submit for the record two studies from Penn State University. The studies found that Marcellus activity, I'm quoting now, this is Penn State University: "By 2020, employment would expand by 200,000 jobs. Additionally - Penn State University, I'm still quoting - also included that federal regulation was a serious threat to Marcellus development.

People critical of gas drilling have called Terry Engelder an industry shill. And while it is true that his Marcellus talking points line up exactly with those of industry, I got the impression that Engelder sincerely believes these talking points. He believes industry wants to do shale drilling right, that it's figuring out how to minimize the environmental and health hazards, and his job – his responsibility in fact – is to help. He believes he's had an opportunity only a handful of scientists get, to influence the course of history. He compared himself to Louis Pasteur and Jonas Salk. And so, back in 2007, for instance, back in 2007, when he was invited by a major investment bank to participate in a conference call for about 130 investors looking to put money into drilling in the Marcellus shale, Engelder felt it was almost his duty to do so.

Terry: In a very real sense, this was my one opportunity to repay the faith that the federal government has had in me and the industry has had in me.

I couldn't get tape from the call, but I did get a transcript. During the presentation, Engelder doesn't just talk up the Marcellus Shale. "I have to make a bit of a sales pitch for Penn State" he says. He repeatedly points out the quote "symbiosis between the gas industry and Penn State." And asks them to invest in research at Penn State "the type of research that's" quote "necessary to answer some of these questions that are going to be so critical to the future" of Marcellus development. The type of research that he himself will be doing.

Since that call, Engelder has started a research project — 10 oil and gas companies are paying about 40 grand each, so students can map the Appalachian Basin, showing companies where best to drill. Engelder also has a multi-million dollar project to help engineers figure out, among other things, how much pressure they need to frack wells.

Penn State depends hugely on industry money. And not just on the oil and gas industry, on pharmaceutical companies and on weapons manufacturers, and on the government. All major research universities do – not just Penn State.

But Penn State's got one of the oldest and best gas and petroleum engineering schools in the country; without industry money, the school might not survive. Flip through this year's awards banquet program for the energy and mineral engineering students, and it's an industry roster. They're getting money from Chesapeake Energy, Consol Energy, Chevron, BP, ConocoPhillips, Marathon Oil. Some of these students will go on to work for these companies, and make lots of money, and give it back to Penn State.

Which is great for the university. But if you take a close look at how some of these donations work, you can see how entwined the university is, not just with the gas industry but also with state government, and how all three of them are united on the topic of drilling. Take the biggest private donation in Penn State's history. In September, an oil and gas engineering alum named Terry Pegula gave \$88 million to create a Division I ice hockey program.

Pegula and his oil and gas company, East Resources – which, by the way, had the third highest number of gas well violations in the state between 2008 and 2010 — were top donors to Pennsylvania’s new Republican Governor, Tom Corbett, who is a great friend to the gas industry. Corbett has said repeatedly that he doesn’t think gas production should be taxed.

Corbett: The Marcellus is a resource, a source of potential wealth. The foundation of a new economy. Not just something new to tax.

That was Corbett’s first budget address in March when he also announced his new Marcellus Shale Commission, which will advise him on all matters of Marcellus development and regulation.

Who sits in the commission? Terry Pegula. The ice hockey guy. Plus 12 other business and industry representatives, four representatives from environmental groups, and one academic: Terry Engelder.

And I was surprised how frank Engelder was with me about his role on the commission. How baldly political. He says he’s there to push for one or two controversial topics – one of which is forced pooling. It’s a policy that lets drillers extract gas from under your property, whether you like it or not. Engelder thinks it’s a good idea; industry wants it. But Governor Corbett has opposed it.

Terry: I suspect that if the commission was to word their recommendations for pooling in a clever enough way, this would provide political cover for the governor himself. The reason this is important that it come from me, for example, is that it has no credibility if someone from industry proposes this. The fact is the commission has been criticized a great deal anyway for being top heavy with industry types.

There’s nothing necessarily sinister about Penn State being friendly with industry or taking industry money. Unless that money skews research or tamps down dissent.

The problem is, it can. A retired mining engineer from Penn State told me that faculty in his department knew very well that publicly criticizing the mining industry would be a risky career move. He knew of instances when companies got upset about something a faculty member said, and, quote, “in some cases their discomfort was expressed as, ‘We’re not gonna support you any longer if this goes on.’” He said mining faculty at Penn State generally won’t act as expert witnesses in lawsuits against mining companies for the same reason.

Likewise, for petroleum and natural gas engineering faculty, he said, “It would really take an earth-shattering event for them to feel free to take an active role in questioning industry motives or any aspect of industry behavior.”

I have tape of this interview, but I agreed not to use it, because two days after we spoke, this professor – a nice man who’s been retired for a decade – told me he had an anxiety attack, his first ever. He said he felt like a whistleblower, and he couldn’t go public.

At the University of Pittsburgh, Dan Volz did go public. He works in public health – he felt it was his duty to go public.

A couple of years ago, people started calling in to the Center for Healthy Environments and Communities, where Volz worked – at first three or four people a week, then as many as 25 a week. The callers lived near gas wells or compressor stations, and they had health complaints.

Dan: People complaining of bloody noses, of tingling in their distal portions of their fingers and their toes, of problems sometimes remembering things, getting headaches. And the same problem are being reported in Colorado, in Wyoming, and in Texas. And there’s just no investigation on the part of the Environmental Protection Agency or the state DEPs. So, we started investigating this.

Volz is pretty new to academia. He came to Pitt in 2004; but before that, he had his own successful consulting firm. He also worked for the government, at OSHA, and for industry at National Steel. What he was hearing in the phone calls reminded him of solvent exposures he’d investigated before, in factories. It was worrisome.

Also around this time, in late 2009, people started noticing that fish were dying in Dunkard Creek, which runs for 35 miles along the Pennsylvania-West Virginia border. Not just fish, but salamanders and shellfish. In fact all the aquatic life had turned belly up. The causes was said to be golden algae.

Dan: What was puzzling about this was that... golden algae only grows in salty water. So where is all the salt coming from? So I got very interested after that in the issue of where is, what’s adding all these totally dissolved solids to rivers like the Monongahela? Why are we seeing problems associated with high bromide levels in finished drinking water? What is going on here?

So Volz and his students decided the next thing to do was physically test the water themselves. The lab results from one brine treatment facility – known as the Josephine Plant — were so alarming, that Volz testified at a U.S. Senate hearing about them.

Dan Volz: And we found that coming out of the effluent pipe of that plant was discharge of nine pollutants, essentially all in excess of nationally recognized human and/or aquatic health standards.

Meanwhile, people at Pitt were getting annoyed with Volz. He’s not your typical academic – he doesn’t soften things so industry can save face. And he wasn’t just critical of the gas industry. At Pitt he’d taken on coal mining pollution, and toxic dumping by a plate-glass manufacturer.

Dan: So I have talked about many things. I was told, well, maybe you should moderate what you say a little bit, and to kind of pull my punches and talk about things with words such as “potential.” Like “potential public health problems” instead of public health problems.

I can see why they might want him to do that. He can be a loudmouth when he’s riled up. Like when I asked him about methane leaks from gas operations, which some people, like Terry Engelder, say can just be plugged.

Dan: Let’s get a grip on what we’re doing here. We’re making the ground into Swiss cheese. And how often are we going to go back to these hundreds of thousands and millions of wells over the next 20 to 30 to a 100 years to keep plugging them, to keep them plugged for the next generation and then the next generation and then the next generation? Do we have to plug it in...

Sarah: I feel like you’re yelling at me.

Dan: I am yelling at you. So we have to plug this damn thing in perpetuity? Come on.

Volz was also warning community groups about all the compressor stations and refineries that would inevitably follow the drilling in Pennsylvania – and about evidence of cancer clusters among people who live near these operations in Texas and Louisiana. He says he was specifically told not to talk about that. To cool it.

Dan: I certainly have had conversations with researchers here who were direct with me and said “You know, you’re going to ruin our chances to get funding from the industry. You’ve gotta not talk about this anymore. We’re not going to get any funding from the drillers, from Chesapeake, or Range Resources or any of these companies.”

Sarah: And these conversations were not like razzing you around the coffee maker. Like people were actually coming to you seriously and saying ...

Dan: These were department heads and these were people with power in the university. It was all administrators.

Sarah: Can you please ...

Dan: No “you need to keep your mouth shut, you know, you’re on this team.”

The team includes 18 people on Pitt’s board of trustees connected to the oil and gas industry, including the chairman of Marathon Oil, the CEO of Consol Energy, a director of Dominion Resources.

When Volz got his results about pollution coming out of the Josephine Brine Treatment Plant, he was told not to release them until they were published in a peer-reviewed journal, which can take months or even years sometimes. He refused, and handed the results over to the E.P.A. All this came to a head in April.

Sarah: How was it communicated to you, that “don’t be talking about compressors, pipelines and cancer clusters” and “don’t be handing out your Josephine Plant data to the E.P.A. or to the public before it’s peer reviewed?” Like, how was this communicated to you?

Dan: Directly. What do you mean how was it communicated to me?

Sarah: Did someone knock on your....

Dan: Don’t do it. In e-mail.

Sarah: It was an e-mail?

Dan: Yes.

Sarah: From?

Dan: From the dean of the graduate school of public health. That you’ve crossed a line to advocacy. You’re now an advocate, you’re not a scientist. As soon as I read that, I quit immediately. I just said, “I’m a 60-year-old man that’s had a complete career in environment and I don’t need to work for this university.”

I spoke to Volz’s dean, Dr. Donald Burke. He and Dan Volz like and respect each other. He told me the school’s differences with Volz weren’t political or financial; they were philosophical. They fundamentally disagreed about when it’s OK to be an advocate, and when it’s not.

Burke: Is advocacy in an academic institution appropriate? When there’s a strong evidence base, the answer is by all means. But if there’s not a strong evidence base, then advocacy is probably not appropriate for a university.

For Dr. Burke, lab results from the Josephine plant isn’t strong enough evidence, not like a peer reviewed study. Dr. Burke also said the research that Dan Volz and his students were doing would continue at Pitt.

Interestingly, just after Volz quit, the Pennsylvania D.E.P. asked all drilling companies to stop bringing their waste to treatment facilities that couldn’t handle them. Volz’s work wasn’t mentioned, but most people following this topic in Pennsylvania credit him in large part for making that happen.

Sarah: Do you know of other people, not even necessarily here at Pitt, but at other universities who have run into this similar thing you have? Maybe not to this degree, maybe they haven't been this outspoken, but who have gotten the message from their institution like can you please dial it down?

Dan: Have I heard of this?

Sarah: Do you know?

Dan: Yes, absolutely, sure.

Sarah: You don't have to tell me who they are now, but can you...

Dan: No, I'm not ever going to tell you who they are.

Sarah: Oh, you're not? Because they won't talk to me?

Dan: Again, turn that thing off. I can't...

Sarah: OK, and they're not going to talk to me?

Dan: They will not talk to you. I guarantee you that they will not talk to you. I will not even give you their names.

Sarah: And why won't they talk to me?

Dan: They won't talk to you because this is such a huge political question and they risk their job or their grant funding or their career over this. That's why.

New York's politics surrounding gas are different from Pennsylvania's. For starters, there's been a moratorium on drilling there, and so the politics within a university like Cornell, at least, are different enough that a professor named Tony Ingraffea has been speaking out, without any repercussions.

Ingraffea's one of the people who helped invent fracking. He's a structural engineer and he's taken gas industry money in the past. He's friendly with both Dan Volz and Terry Engelder, he even wrote a paper with Engelder.

But when he started seeing op-eds and industry spokesmen saying how fracking was no big deal, how the chemicals it released into the environment were perfectly safe, he started giving talks about how that wasn't true.

In May, he came to Penn State, Terry Engelder's turf, to deliver a talk that threw into question everything that Terry Engelder believes to be true about natural gas development. Penn State is also the home of the Nittany Lions and the first slide Ingraffea showed was a picture of an open-mouthed lion, with a guy's head stuck inside.

Tony: And you're right, this is not the right kind of lion. But I couldn't find anywhere on the web a Nittany Lion to stick my head into. That's how I feel right now. So I hope over the next few minutes I can overcome my anxieties and my knee knocking and fear that when I leave here, I'm going to find all my tires slashed...

Ingraffea recently co-authored a study that said all the hype about natural gas from shale being a cleaner alternative to coal or oil isn't really true. He questions the very idea that extracting natural gas from shale formations is good energy policy. Ingraffea says it's not. It's a sop – a temporary band-aid for our energy problems that's going to make some people very rich. But that will ultimately make global climate change worse and put off, for decades, development of better, sustainable energy solutions.

Ingraffea and Engelder and Volz all believe that they're practicing good science, and that that good science has led them to advocate for very different policies. Each of them sees what he's doing as a moral obligation. The difference is, there's plenty of money around to do the science Engelder wants to do. It's harder to find the money to do the kind of science that Volz and Ingraffea want to do. To answer huge questions about what shale gas extraction could mean for human health and the environment, here's Ingraffea:

Tony: There's so much inertia, wrong word. So much momentum in the gas industry right now to develop shale resources and there's so much bipartisan support in Washington for it to happen and there's so little resistance to slow it down to ask these big questions that take a long time to answer. What are the cumulative environmental and health impacts of a large-scale development of a 100,000 wells in a region? How do you get a handle on that?

That research is harder to fund, not just in Pennsylvania ... but everywhere.

Ira Glass: Sarah Koenig. Coming up. There will be crud. That's in a minute, from Chicago Public Radio and Public Radio International, when our program continues.

It's *This American Life* from Ira Glass. Today on our program, we're devoting the whole hour to Sarah Koenig's stories of what happens in a state when a huge, game changing economic boom arrives. In this case, trillions of cubic feet of natural gas being discovered underneath Pennsylvania.

We've arrived at Act Two of our show. Act Two, "Ground War."

One of the biggest drilling operators in Pennsylvania is called Range Resources, which has 80 percent of its capital budget (over a billion dollars) invested in the southwestern part of the state. And one of the places that they're most active is a little township south of Pittsburgh called Mt. Pleasant because Mt Pleasant, with its hilly old farms and windy main streets and handful of restaurants is, according to Credit Suisse and Morgan Stanley, smack in the middle of the, quote, "highest rate-of-return" spot for gas

exploration in the United States. That's why Range has leased 95 percent of Mt. Pleasant's land for mineral rights. 95 percent. Which means pretty much everything but the tiny downtown. They've already drilled 100 wells there. They've got plans for hundreds more.

So, Ok, imagine for a second what a billion dollars worth of investment looks like for a drilling company: parking lot-sized concrete well pads, giant drill rigs, pumps, condensers, miles of pipelines, hundreds of trucks bringing in special equipment and chemicals and workers. All this stuff rolled into Mt Pleasant. And in Mt. Pleasant, like you'd expect in most small towns, there were no laws on the books governing any of it.

So, a couple of years ago, in 2009, when the Pennsylvania Supreme Court gave towns around the state the right to pass their own laws for this kind of thing, Mt. Pleasant officials decided to update their ordinances, so they could have some control over where exactly companies like Range could drill. And Range fought back, with big league, hardball tactics.

Again, here's Sarah Koenig to tell what happened.

The standoff between Range and Mt. Pleasant started with one of the least gripping topics in all of government: zoning. It ended in a full-scale PR war in which Mt. Pleasant and its three citizen supervisors were ridiculously outmanned.

And I'm so sorry to have to do this, but to understand this story, you need a really quick primer on two types of zoning: Conditional use, and permitted use. Conditional use means that if a company wants to drill a well, say, 200 feet from your kid's preschool, and you're worried it might be dangerous, there'd be a hearing, for every new well there'd be a hearing, and you could lay out your concerns, and then the town could set conditions like the company has to move the well 1,000 feet back, or put up a special fence. But this, according to Matt Pitzarella, the communications director for Range Resources, just leads to heartache.

Matt: I would describe it as, a process that sounds very good on paper, and then practical implementation is, they never vote - well it's open ended so as long as you continue to interview someone or raise a question, it continues to drag on and it never ends.

Range prefers the other kind of zoning — permitted-use zoning — where you set general standards upfront for all wells, saying “here's what's permitted,” and that's it, no hearings, no dithering, no special conditions. Obviously if you're a drilling company — that's what you want. Permitted use. It's easier and cheaper and faster.

But here's how Mt. Pleasant saw it. They're a quiet, agricultural township, population 3,500. Suddenly, an industry arrived. And people started complaining that gas production polluted their water, ruined their farms, that toxins gave them headaches, they couldn't let their kids out to play when the wind was blowing the wrong way. Plus the town felt

overrun — the noise, the dust, the trucks, too many strange out-of-town men living on worksites. The township as a whole isn't anti-drilling, far from it. It just needed to figure out how to live alongside the drilling, without ceding total control to the drillers.

So a Mt. Pleasant citizens committee spent months looking at how other towns were zoning the oil and gas industry in Texas and Colorado and Wyoming, other towns in Pennsylvania, and they came up with a proposal for Mt. Pleasant: Make it conditional use; it was the only way residents could have any control over where drilling happened in their town. Here's Mary Ann Stevenson, township manager for Mt. Pleasant.

Mary Ann: So we crafted our ordinance around a conditional use process. And that is for compressor stations, processing facilities, and drilling. They all have to have a conditional-use hearing. We reached out to Range for their input on our ordinance...

They wanted input from Range because they wanted an ordinance that Range could live with.

Mary Ann: We gave them copies of our drafts every time we amended them. We gave them new copies and they did not provide any. There's never been written comments from Range on our ordinance. They've never, never done that.

Matt: Which we've done for them, I think it's 36 occasions over 18 months.

This by the way is the entire fight in a nutshell, both sides insisting that the other side is unwilling to communicate or just outright lying.

Matt: We've had these constant back and forth with them on all these issues. If they said what's your positions in writing, I would say see the last 14 letters we've sent to you.

Matt offered several times to show me the 36 correspondences, he says, Range had with the town over the past 18 months, but he never produced them.

In any case, Range communicated just enough to make it clear that it did not want the conditional use ordinance. The fight was on. Range took it to the people, tried to get townspeople to put pressure on Mt. Pleasant's three supervisors. Range's chief weapon, was its chief asset: Money. In the past few years, the company's spread a lot of it around the struggling township. And that's made people like them.

Evidence of the spending is everywhere. They've given a few hundred thousand dollars to 4-H and Boy Scouts and other local charities. Their matching grants have kept the local library open for the past two years. One of those oversized checks hangs over the front desk for \$10,000.

There's the bronze statue next to the fire department, honoring the farmers of Mt.

Pleasant Township. It's of a farmer in a hat and boots, holding a calf. The plaque below it lists about 20 donors – all farmers -- and then at the bottom “Special thanks to Range Resources,” which gave about \$40,000 toward the statue.

Frank Hnat: Range has done everything for Mt. Pleasant Township. I mean they've donated to schools, they've donated to the fire department. They've donated to the apple festival.

Frank Hnat is an artist, and he designed the statue, and raised money for it, along with a failed downtown revitalization plan that Range also helped fund.

Frank: There's a big upside to this gas. I mean there are a lot of happy people here. I mean there is people here who had barns that had been falling apart. They resurrected these barns. There are people here who have never had a car. They have brand new cars now. There are people here that didn't have any lawnmowers. They were riding lawn mowers that were 10 years old. They all have fancy lawnmowers now.

Frank has got a lease with Range. There's a well pad about a mile behind his house that's taking the gas from under his property. He got a signing bonus of \$1,000; he says his neighbor, who's hosting the actual well, got \$600,000 as a signing bonus, which is on par with other deals Range has made.

The biggest money though is promised in the royalties though. Matt told me the average well yields about \$4 million in royalties over the life of the well. And he says Range has paid out \$25 million so far in lease and royalty payments in Mt. Pleasant. They've also spent \$5 million on roads and infrastructure in the town. The thousands of heavy trucks they've brought in destroy local roads. Here's what it sounds like midday on a main street.

[sound of trucks]

There aren't many businesses in Mt. Pleasant, but the ones that are there – a gas station, restaurants – are all making more money than they used to. Most told me at least 30 percent more, which is a big deal in a bad economy.

Range made it plain. If Mt. Pleasant supervisors didn't enact zoning that was pleasing to the company, all this new money flowing into town could be jeopardized. It was like your rich aunt threatening to cut you out of the will.

To drive this point home, the company mass-mailed a letter – the first of a bunch of letters you'll hear about – and it's not clear when they sent it because as a matter of a strategy I don't fully understand, Range doesn't date these letters, or sign them with anyone's name. But anyway, the letter's heading was fake-addressed to Mr. and Mrs. Joe Schmo, 10 Cashstrapped Lane. The letter urged residents to “contact your supervisors and town officials” about the zoning. “The more restrictions placed on our activities, the

more difficult it is for us to move forward,” the letter says. “In short, if we don’t drill the wells, no gas is produced. And no gas means no royalties.”

Meanwhile, Mary Ann, the township manager, was still trying to get Range to let her know what they thought of the proposed zoning ordinance, to suggest changes if it wanted them.

Mary Ann: I would reach out to the attorneys of Range and say, “Look, please, please work with me.” I would almost beg. “Please.” You know, and they would say they would do everything in their power to get something.

Sarah: And then what would happen?

Mary Ann: Nothing. I would get nothing.

Mary Ann says it was exhausting. And then just before Christmas, just before her deadline to advertise the new ordinance in the newspaper -- which she’s required to do by law -- a Range attorney called and offered to get Mary Ann comments from the company by Christmas Eve.

Mary Ann: Yeah, I say, “If you want to submit something, submit it. I’ll take a look at it. You know, but this is kind of like last minute. “So I’ll see if I can get it to you by Christmas Eve.” Never heard another word. Do you know, that when we had our hearing, they turned that against me. They said to the people, “We offered our comments to Mount Pleasant Township, and they wouldn’t take them.” They turned it on me. I took great offense. This whole thing has been a job for me. But that’s the one thing I took offense to, because they kind of like said I was lying. And I don’t lie.

Mary Ann isn’t a lawyer or a politician, she’s just a normal person with a busy job. As Township Manager, she’s in charge of Mt Pleasant’s operating budget, she’s pension and healthcare administrator for 15 employees, she’s treasurer, she’s secretary and researcher for the township’s board of supervisors – who again, are just normal people like her: a retired coal miner, a road maintenance manager, and a truck driver. The week I was there, Mary Ann’s office manager was out of town, so she was doing that too.

Mary Ann: And now I am the oil-and-gas expert.

Sarah: And how much of the oil-and-gas expert part has been your job of late?

Mary Ann: It probably consumes 90 percent of my day.

Sarah: Oh my God.

Mary Ann: Yes, 90 percent. Sometimes 100 percent.

In March, things got precipitously worse with Range. The company asked for a meeting with Mt. Pleasant supervisors. According to Mary Ann, at the meeting Range presented the supervisors with the company's own "model ordinance." It wasn't bad, but it was based on permitted use. And then, again, according to Mary Ann, Range gave the township two options. First, they could adopt Range's model ordinance. And if they did, Range would write a letter to Mt. Pleasant residents. I'll let Mary Ann explain. This is from a letter she wrote to Range's attorney, recapping what had happened at the meeting.

Mary Ann: If the township went with option one, which was a permitted-use ordinance, then the letter would be positive and would state how well the township and Range Resources is working together, and in essence paint the supervisors in a good light. If the town went with option two ...

Sarah: Option two was the town's proposed conditional use ordinance..

Mary Ann: Then the letter as previously drafted and disclosed (a copy of which is attached) would be released to all of the residents of Mount Pleasant Township, but it would be amended to add that the supervisors were the ones responsible for the lease holders not receiving any money. Moreover, the letter would spell out how the residents could sue the township and sue each supervisor individually, seeking millions of dollars if not more.

Matt says this threat to sue was never uttered.

Matt: Categorically false. Absolutely. None of it. We've never stated, you know. any of those things.

Mary Ann: I did not misunderstand what was said. And our legal counsel was there, our zoning officer was there, our chairman of the board was there. Nobody misunderstood what was said.

What Range's lawyer might have mentioned, Matt said, is that other townships were being sued by other companies over their new zoning. Mary Ann also said that at the meeting, a Range official told them, "Range Resources has to take a stand somewhere, and that is going to be in Mt. Pleasant Township."

Matt: I wouldn't entirely classify that as inaccurate. We really believe like we said, Mt. pleasant has a real special place with the Marcellus shale and its development because that's where it all started.

This is also why Range is so annoyed. Range was the very first company to figure out you could even get gas from the Marcellus, by drilling test wells years ago in Mt. Pleasant township. It's their epicenter; they're proud of it. It's part of their corporate story now. Plus, it's their backyard. Range's president is from the area. So is Matt. So are a lot

of people who work for the company. Their plan is to drill in Mt. Pleasant for decades.

Matt: What we've said to them is, "Look, at some point we have to draw a line on this."

There are thousands of municipalities in Pennsylvania, and a good number of them are in the midst of changing their zoning regulations too. You can see why Range would want to nip this in the bud.

Already the struggle in Mt Pleasant has spooked the neighboring township of Cross Creek. The manager there told me her supervisors were one step away from approving a conditional use ordinance when a big group of residents came in and made a fuss, pointing to the strife in Mt. Pleasant. The supervisors changed their minds and approved permitted use instead.

The next thing Range did - surprise, surprise- was send out not one letter, but two. The first was mass-mailed to everyone in Mt. Pleasant. It was cheerful. It laid out the advantages of Range's model permitted use ordinance and talked about how Range was confident the town and company would continue to happily coexist.

The second letter was mailed out at almost the same time, but it went only to residents who had leases with Range. The tone was completely different. "We've tried to work with your township officials," it said, but "our attempts continue to be rejected." As a result, the letter went on, "we may be forced to shift activity to other, more cooperative townships." The letter also noted that Range would be "evaluating legal action."

In other words, people without leases were told not to worry, everything was going great. People with leases were told that things were very bad indeed. Some residents dubbed it a divide-and-conquer strategy.

Matt says Range wasn't trying to pit residents against one another, that the timing of these two letters was regrettable – and really a mistake. They weren't supposed to coincide. Somebody screwed up. Him maybe.

In any case, leaseholders who got the second letter were told that they should come to a meeting on April 6 that Range was hosting at Hickory Fire Hall. The people who got the cheerful letter weren't told about the meeting.

Jim Cannon: Again, all we're looking for is a middle ground... and for whatever reason, we can't seem to find it.

Range's PR specialist, Jim Cannon, did the talking at the fire hall meeting. Hundreds of people showed up. It was standing room only.

Cannon reiterated what Range said in its letters — that a lawsuit against the town was just one option Range was considering.

Jim: There's another option that I would like to throw out there and that is Range is pulling out of Mt. Pleasant all together. It's been floating around that somehow Range needs Mt. Pleasant more than Mt. Pleasant needs Range. Fair enough, but keep in mind that we have 450,000 de-risked acres in Washington County alone. We can go drill somewhere else. It would keep us busy for a few years.

This scared leaseholders. At the fire hall meeting people called for the supervisors heads. "The supervisors, you don't need them," one old lady says.

Mary Dalbo: The supervisors, you don't need them. Believe me, we need Range! Range don't need us!

This is Mary Dalbo. She doesn't actually live in Mt. Pleasant or have a say in its zoning, but she showed up to this meeting, shouting and talking smack, constantly. You can find her on Range's website, where she's featured in one of their folksy PR testimonials.

Mary: This money from drilling, I will just put it in a trust fund for my great grandchildren, so they can go to college.

Oddly, at the meeting, Jim Cannon said Range could live with conditional use, as long as the process wasn't too drawn out. They just needed to be able to plan. Mary Ann says that was the first she'd heard of it.

Mt. Pleasant isn't a town that's accustomed to being mad at itself. But by this point, divisions in town were pretty deep. The gas money had made things weird between leaseholders and non-leaseholders, even between close friends. Anyone questioning Range's activities felt marginalized. People started insulting each other on the town's Facebook page. A creeping censorship has slipped into town. People told me they'd been asked not to discuss drilling at PTA meetings, or at the local library, which again is funded by Range.

Dencil Backus: The same thing happened whenever I sought to schedule a meeting in our community center...

That's Dencil Backus from the citizens group that suggested conditional use zoning for the town.

Dencil: The gentleman in charge of the community center said, "Your meeting to oppose the drilling? Can't use it." At practically any meeting, anyone who raises a question about what it is that Range is doing is automatically labeled as anti-drilling. In fact, it's really kind of subtle because one of the things they do is they ask, "Do you own your mineral rights?" No. "Oh, well of course, then you have no interest. Of course you're opposed to it." And we hear that over and over again.

Frank Hnat: I think probably the problem with people over on Walnut...

This is Frank Hnat again, the artist. Dencil Backus lives on Walnut Street.

Frank: I don't think too many of the people have leases there, and I think that's why a lot of these people are aggravated — because they don't have a lease.

The underbelly of this argument is about class. That the people without leases don't have leases because they don't own their mineral rights. And they don't own their mineral rights because they're newcomers (the earlier owners retained the rights), and newcomers, in a lot of cases, is code for city folk, who've moved in and who have more money than the farmers who've lived there forever. In other words, the people without leases are either just bitter because they can't cash in or they've already got money, so they've got the luxury of questioning this whole endeavor.

After the fire hall meeting, Range stopped any new drilling in Mt. Pleasant. It announced it would continue to develop three well pads that were already underway. But Matt says they've taken 30 other locations off their two-year drilling plan – that's hundreds of wells and millions in royalties on hold. And here's the rub. Another company couldn't just come in and drill once Range left, in part because no one else could lay a pipe to move the gas out. All the surrounding land is spoken for.

Matt says they had no choice; the town supervisors have made the landscape too unpredictable for Range to do business. Prediction in all its forms has been Range's mantra during this fight; Matt used the words predict, predictability, and unpredictable 28 times during our interview.

Matt: So in other words, if you were trying to book a trip to go on vacation, but the airline wouldn't tell you what time the flight leaves, which airport it's going to leave from or when you come back, you probably wouldn't book the trip through that airline. It's kind of the same with us.

Mary Ann: We're not the ones stopping them from drilling. They're stopping themselves from drilling. They just want to blame us for it. I'm sure that's what it's going to be portrayed as too.

That's where Range has bested the township at every step, spinning this fight their way, stoking the notion that the supervisors were the ones causing people to lose money, because they refused to negotiate with the company, rather than the other way around. The mass-mailed letters, the meetings, the spending all over town, and all this on top of their normal media campaign. Like many gas companies, Range has ads on TV, they underwrite radio stations, they sponsored the State Association of Township Supervisors conference this year. For a township like Mt. Pleasant, they just can't compete with all that.

Mary Ann: We're not on the same playing ground, you know? We can't compare. It's not apples to apples. I don't they're being fair with the entity that they're dealing

with. They might be fair if this was another drilling company or somebody in their league.

Sarah: Just because their like this deep-pocketed company versus three supervisors and you?

Mary Ann: Pretty much, yeah, with no money. No pockets.

It seems Range's strategy, so far, has kind of worked. A lot of people do blame the supervisors for what's happened. I got to Mt. Pleasant the day after the primary when the lone supervisor up for re-election was defeated.

Frank Hnat: I don't know what their attitude is towards Range, and I just cannot believe that these people are so stubborn that they can't work with an individual. I think they just don't have common sense.

Again, that's Frank Hnat, the artist. Here's Mary Toward, who owns the Ole Hickory Inn.

Mary: You know, our supervisors are supposed to represent the people, but that's not always how it works. You know, they have their own little thing and they don't want to change. I just, looking a gift horse in the mouth. Take it for what it is.

Finally. Mary Ann wrote one last letter to Range. "To be blunt," she wrote, "we simply cannot continue down this path of conflict." She and the township offered one last solution: mediation.

And so in May, Range and Mt. Pleasant supervisors presented their cases to a neutral arbiter, a retired federal judge. And they came to an agreement that was about as good as anyone could hope for: The township got the conditional zoning it wanted but it would streamline the process so the company would avoid the kinds of delays that it feared. And Mt. Pleasant would allow Range to have its managers live in trailers on the drilling sites, which was a whole other fight they were having. Matt told me Range was hopeful about the compromise.

At the end of this mediation process, Mt. Pleasant supervisors took that agreement they'd hashed out and voted to turn it into law. It seemed like the year-and-a-half-long dispute was over.

And what happened next surprised me more than anything I'd heard so far. Matt Pitzarella claimed Range never got to sign off on the final language of the ordinance and was blindsided by the vote; that they'd only found out about it the day before it happened. Incidentally it was public information; I'd known about it for more than a month. And he also wrote me this, in an e-mail:

"It's disheartening that the township could not respect the mediation process and that

makes us very reluctant to make two-year-out operation plans based on a permitting process that we can't predict from a township who just went back on their word.”

So Range is still pulling out of the town, agreement or no agreement.

Regardless, Range and other gas companies have a potential trump card in all this. A trump card that could bypass Mt. Pleasant’s new rules and all the other zoning rules that towns have enacted all over Pennsylvania by putting the state in charge of zoning for gas production instead of local officials. That’s what gas companies have been lobbying for this year.

Matt: In a perfect world, we think there would be one ordinance across the state that everyone that has an encyclopedia of conditions in it, but at least we would know what to expect. It wouldn’t change from township to township.

That perfect world might come. A bill before the Pennsylvania legislature, sponsored by the senate president pro tem, would impose an impact fee on the gas industry – sort of like a tax. The money would go to municipalities affected by drilling. But as part of that bill, the state would enact the kind of zoning that industry wants, and that Mt. Pleasant rejected — permitted use zoning in all municipalities in Pennsylvania. Tucked into the second to last page of the bill, it says “If any town chooses to zone more strictly than the new state standard, that town will not get any impact-fee money.” In other words, Mt. Pleasant will either have to do it Range’s way or be cut out of the will.

Sarah Koenig is one of the producers of our show.

Well our program was produced today by Alex Blumberg, Ben Calhoun, Jane Feltes, Sarah Koenig, Jonathan Menjivar, Lisa Pollak, Robyn Semien, Alissa Shipp, Nancy Updike and me. Our Senior Producer is Julie Snyder. Production help from Eric Mennel. Music Help from Damian Graef. Seth Lind is our production manager. Emily Condon's our office manager.

Thanks today to Ian Urbina, Marc Schefsky, JoAnne Wagner, Gary Thornbloom and John Smith.

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WBEZ management oversight for our show by our boss, Mr. Torey Malatia, who was, I don’t know, kind of harsh back years ago when I first showed him my idea for this radio show:

Terry Engelder: Oh boy, you know. Into the trash bin.

I'm Ira Glass, back next week with more stories of *This American Life*.

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