Seismic Testing For New Shale In Western PA

TIMOTHY PUKO, Pittsburgh Tribune-Review

FINDLAY, Pa. (AP) — Three white trucks roll head-to-tail along Route 30 at about 1 mile per hour. Every 250 feet, they stop and slowly lower wood and metal pads to the road.

Then they shake. Some in the gas industry call this "getting elephants to jump at the same time."

These are seismic testing trucks, sending vibrations 20,000 feet deep to get a picture of the Marcellus shale just as a sonogram pictures an unborn baby. And it's the first step for gas companies after they commit to drilling a new region.

The trucks working Route 30 in Findlay are on assignment for Consol Energy Inc. as it gets ready to drill for gas on 10,000 acres around Pittsburgh International Airport. These vibration trucks may become a familiar sight for analyzing prospective gas fields as drillers encroach the urban core or more densely populated areas.

They are "an ideal source. You can put exactly the frequency you want, and it's low impact," said Doug Reif, adviser geologist at Cecil-based Consol. "You drill holes in the ground and use explosive charges, it's a whole new ballgame. In a metropolitan area like this, I don't think you'd do that."

Seismic testing has been an initial flash point for drilling opponents. They have complained about environmental and property damage and noise — especially when companies use explosives to map and analyze gas fields. And some municipalities have adopted ordinances to address some of those concerns.

Companies are in the middle of seismic surveys all over the region. Work once most prevalent in rural areas like Fayette and Washington counties is closing in on the Pittsburgh suburbs. In addition to Consol's work in Findlay and Moon, EQT Corp. is doing a seismic survey across the South Hills, from Forward to Peters.

Greater Pittsburgh "is kind of in the bull's-eye," said Jeremy Boak, a shale expert at the Colorado School of Mines. "The pressure (to drill) will be there. However, if companies cannot convince the population that they are operating safely, it will be very difficult to apply that pressure."

The area — even right around Pittsburgh __ is too big of a draw for drillers to pass up. Butler, Beaver, Allegheny, Washington and Greene counties and part of the neighboring West Virginia Panhandle are the richest spot for shale gas in the Appalachian basin, according to the most recent investor presentation from Range Resources Corp., which drills that area.

The local sweet spot has between 200 and 425 billion cubic feet of gas per square

mile, with Allegheny County in the center, the richest part of it all, the company's maps show. At today's prices, gas under Allegheny County alone would be worth more than $950 billion.

"Those are huge numbers," said Doug Patchen, director of the Appalachian Oil and Natural Gas Research Consortium at West Virginia University. "They show potential for it to produce a lot for many years to come — particularly in southwest Pennsylvania. ... We're only starting to realize the potential."

As gas companies push closer to Pittsburgh, the tension rises. In Peters, township officials spent more than three months this year crafting new rules to govern the whole process. In Forward, 70 landowners are locked in a lawsuit with Downtown-based EQT about what it can do. Seismic testing was a big issue in both communities.

Peters spent more than three months crafting new rules for drilling. Companies have to have at least a 40-acre parcel to drill and they need special permission to use explosives — instead of the trucks — for seismic testing, manager Michael A. Silvestri said.

"The whole process was fairly new to us, and we felt we had to take a conservative approach just to be sure," he said. "I think everybody realizes that sooner or later somebody's going to look at potentially drilling in sections of the township."

EQT, which received the first permit in Peters, will use explosives on only one property when it works there in mid-December, Silvestri said. But there are other places in its survey where it needs a lot more explosives, company officials said in a recent court hearing.

It's the early focal point of the company's lawsuit in Forward. EQT and the landowners there are ultimately fighting about whether the company has legitimate leases to drill. Seismic testing is their initial battleground. The project covers 82 square miles and costs about $9 million, company officials said in an October court hearing Downtown.

"We drill where we think we have the best understanding of the subsurface and can manage our risk," said Joel G. Starr, principal geophysicist at EQT Production. "So we'll drill where we have the best images of the subsurface."

Some of the challenges that EQT's had, especially in Peters, are discouraging for any efforts to go deeper into Greater Pittsburgh, Consol spokeswoman Lynn Seay said. There are a lot of physical challenges, too, especially in finding room for pipelines, experts said. But, in the early days, that public engagement is at the top of the list.

One way some in the industry hope to be responsive to public concerns is the way they conduct seismic tests. In populated areas around the airport, Consol is leaving out the explosives that often go with seismic testing and working with vibration trucks.

"Getting along with everybody is a big factor in our business," said Doug Reif, adviser geologist at Cecil-based Consol. "If there's going to be a public uproar, that's a big factor in us working here."

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