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In Licking County, Junior ROTC is cool / B1 McCarron helps Bengals clinch playoff berth / C1

Seahawks roll up on Browns, Manziel / C1

He's got a tfig for spelling backward / E1

Coca-Cola.

High: 50 • **Low**: 47 Details on Page B12

Cybersecurity

AEP intent on guarding the grid

By Dan Gearino THE COLUMBUS DISPATCH and Garance Burke and Jonathan Fahey ASSOCIATED PRESS

The nation's power grid is under near-constant assault from hackers, including people tied to foreign governments.

They sometimes make their way past key defense points, raising serious questions about the security of the nation's power supply. Against this backdrop, utility companies and the government are trying to stay a step ahead as the

See Grid Page A8

Environment

Injection wells spur concerns

By Laura Arenschield THE COLUMBUS DISPATCH

COOLVILLE, Ohio — Five months ago, Felicia Mettler had never heard the term *injection* well. She didn't know what one was or what it held. She didn't know what an injection well looked like.

She lives with her husband and children in a wood-frame house in a rural part of Athens County near the Hocking River, and she relishes the relative peace of the countryside.

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DISPATCH INVESTIGATION / WRONG TRACK



Jerry Gibson, a railroad inspector with the Public Utilities Commission of Ohio, looks over a section of track in central Ohio.

Overwhelmed

Despite a rash of derailments, the number of state, federal inspectors remains the same

About the series

As domestic oil production has grown in the United States, longer, heavier trains that carry volatile crude from shale fields to coastal refineries are taking a toll on the nation's rail network. When those trains derail, the result can be catastrophic.

Sunday: Dangerous cargo **Today**: Inspection gaps Tuesday: Emergency response

By Rick Rouan and Laura Arenschield • THE COLUMBUS DISPATCH

onths before a CSX train carrying crude oil derailed and exploded in Mount Carbon, W.Va., polluting the air and water and forcing more than 1,100 people from their homes, inspectors missed a problem with the track there. • Inspection reports compiled by a railroad contractor and CSX showed evidence of the defect, but the track wasn't repaired or replaced. In fact, CSX officials and federal regulators didn't find out about the defect until it was too late.

About 140,000 miles of train tracks crisscross the nation, carrying hazardous cargo past houses, hospitals and schools every day. And hundreds of trains derail or crash each year because of problems with those tracks.

One-third of all incidents — about

17,000 since 1995 — are blamed on problems with track.

For the most part, railroads are responsible for inspecting their own tracks, but they don't report those in-

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Injection

FROM PAGE A1

But like many of her neighbors, the growing number of injection wells in Athens County has caught her attention.

In the first three quarters of 2015, Athens County's injection wells took more fracking wastewater than wells in any other county in Ohio.

It was the first time that Athens County took the most fracking waste. Almost 93 percent of that waste came from out-ofstate oil and gas wells, likely in Pennsylvania or West Virginia.

And even though oil and gas prices are down, both by the barrel and at the pump — causing a slowdown in drilling across the country -Ohio as a whole is on pace to take about 4.7 million more barrels of fracking waste in 2015 than it did in 2014, a Dispatch analysis of state records shows.

In the first three quarters of 2015, Athens County took nearly 3.2 million barrels of fracking waste, more than any other county and about 16 percent of the total fracking waste pumped into Ohio injection wells this year. Almost 3 million barrels of that waste came from fracked wells outside Ohio.

The next closest counties, Tuscarawas and Muskingum, took about 2.2 million barrels and 2 million barrels, respectively.

More than 20 million barrels of fracking waste have been injected into injection wells across the state this year, and if injections continue at that pace, Ohio injection wells will by the end of 2015 have taken more than 4.7 million more barrels of fracking waste this year than they did in 2014.

Eric Heis, a spokesman for the Ohio Department of Natural Resources, said the state believes the injection wells are safe.

'They used to put (oil and gas waste) in evaporation pits, which is just a very bad idea — not just because of the chemicals, but the salt would leak into everything," Heis said. "And now it's going thousands of feet below the water table with no leaking, which is always a good thing."

Residents still worry. California has shut down dozens of injection wells over concerns that fracking chemicals might have gotten into drinkingwater aquifers. In Oklahoma, injection wells have



KYLE ROBERTSON | DISPATCH

Athens County residents Loran Conley, left, and Felicia Mettler worry that a new fracking-wastewater injection well might foul the nearby Hocking River. State officials think the injection wells are safe.



been linked to earthquakes.

And beyond the environmental threats, Athens County residents say, they worry about safety.

More fracking waste means more brine trucks traveling along the county's roads.

For many Athens County residents, and for residents in other counties where fracking waste gets dumped, the risks far outweigh the rewards: Unlike fracked wells, injection wells don't create many jobs.

The Ohio Department of Natural Resources collects fees for the first 500,000 barrels of brine that are pumped into each injection well throughout the state. In the first three quarters of 2015, three wells — two in Tuscarawas County and one in Coshocton County - topped 500,000 barrels. The state collected more than \$2.1 million from January through September of this year.

But the counties don't receive any of that money, Heis said. Instead, Natural Resources uses it in part to pay and train inspectors who oversee both fracked wells and injection wells throughout Ohio. The state has about 50 inspectors who monitor about 200 injection wells and 1,140 fracked wells.

Mettler has written

letters to the Department of Natural Resources, raising concerns about water quality and asking for air monitoring. Her neighbors have written similar letters, including some that point to problems in other states

So far, she said, she has been ignored.

'We absolutely feel like the people in this community, we're expendable," she said. "It's like we don't matter."

They have asked the Department of Natural Resources to hold a public hearing to address their concerns. But the department rarely holds such meetings, with one in Athens in 2012. The state held an "open house" in Portage County in 2013. Heis said the 2012 Athens County meeting

became contentious.

Even some Athens County residents who say they are in favor of hydraulic fracturing - the controversial technique that oil and gas drillers use to access oil and gas deep underground - are concerned about the volume of fracking waste being injected into their county.

One such person is George Weigly, who lives up the road from a site where one injection well already operates and another is being considered.

"What's the limit on the number of barrels and pressure you can put on the geology under Troy and Rome townships right now it's unlimited, and they just keep dumping and dumping and

dumping," Weigly said. "Why can't we put limits on the number of injection wells in a geographic area? The more pressure you put on the geology, the more likely you're going to have a problem."

larenschield@ dispatch.com @larenschield

The Columbus Dispatch

War in Yemen

Foes inch closer to peace

By Tom Miles

BERN, Switzerland — Yemen's warring parties have agreed on a broad framework for ending their conflict at talks in Switzerland, but they first have to agree to a permanent cease-fire after a weeklong truce was widely violated, the United Nations said on Sunday.

U.N. Yemen envoy Ismail Ould Cheikh Ahmed said the two sides would meet again on Jan. 14. The location has yet to be set, although both Switzerland and Ethiopia are possibilities.

"The participants to these talks have unanimously agreed that the ultimate objective that we all have is the end of this war and, therefore, to have a permanent cease-fire," Ould Cheikh Ahmed told a news conference in the Swiss capital.





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