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Data lacking on gas drilling waste disposal

by **Ken Ward Jr.**
Staff writer

CHARLESTON, W.Va. -- A 2011 law has provided new information about what natural gas companies are doing with the huge amounts of waste generated by West Virginia's drilling boom, but major data gaps remain, a legislative committee heard Tuesday.

Evan Hansen, president of the consulting firm Downstream Strategies, said the state requires drilling operators to report what they do with only about 38 percent of the waste they produce.

"We have no idea what happens to the other roughly 62 percent of waste that's being generated at the wells in West Virginia," Hansen told the Joint Legislative Oversight Commission on State Water Resources.

Hansen offered lawmakers a sneak peek at a new report his firm is putting together to provide the first look at what West Virginia regulators know about the huge amounts of water used and waste generated by the boom in natural gas drilling in the Marcellus Shale.

Like the boom in gas production in other shale gas regions, advances in drilling technologies have fueled the Marcellus rush.

Drilling operators use a process called hydraulic fracturing, or "fracking," which shoots vast amounts of water, sand and chemicals deep underground to break apart rock and release gas. They also frequently use a process that drills down, and then turns horizontally to allow more gas to be acquired.

During a hearing Tuesday, Hansen said the state's Natural Gas Horizontal Well Control Act, passed by lawmakers during a December 2011 special session called by Gov. Earl Ray Tomblin, included some new reporting requirements for well operators.

But in examining a database maintained by the Department of Environmental Protection, Hansen's firm found some unreliable data, gaps in required reporting, and inadequate enforcement of the reporting requirements.

For example, 35 percent of wells did not report required data, Hansen said. And West Virginia only required operators to file reports about "flowback" fluids that come back out of wells, not other types of waste, Hansen said.

Still, Hansen said, the DEP data is the best currently available, and allowed his firm to draw some conclusions about water use and waste disposal by the industry.

They estimate, for example, that the average Marcellus well in West Virginia uses about 5 million gallons of water. Hansen said that while that sounds like a lot, it really depends on the source of the water and the season it was withdrawn from a stream or lake.

More than 80 percent of water withdrawals by the natural gas industry came from surface waters such as streams, Hansen said. Only about 8 percent of the water used came from recycling water that was previously used in an earlier fracking operation, he said.

Still, the industry has increased the share of its total water use that it recycles. About 78 percent of total flowback fluids are now reused to frack more than one well, Hansen said. Most of the wastewater from drilling operations that is not being reused is being sent to underground injection wells for disposal, Hansen said.

Overall, fifty-seven percent of "flowback fluids" remains in West Virginia for reuse or disposal. Twenty-two percent is shipped to Pennsylvania, mostly for reuse, and another 21 percent is shipped to Ohio, mostly for underground injection, Hansen said.

Hansen recommended that West Virginia require better reporting of the data, make the datasets available online in a searchable format, and compel operators who aren't reporting to do so.

"We really are talking about large quantities of water and large quantities of waste," Hansen said. "Waste handling is a crucial question. This is a 'game changer' and it has many positives associated with it. We just need to be careful to protect the environment as we go."

The full Downstream Strategies report is scheduled for public release next week. It was funded by the Robert and Patricia Switzer Foundation and prepared for the environmental group Earthworks.

Reach Ken Ward Jr. at kw...@wvgazette.com or 304-348-1702.