

# Drilling chemicals identified

By Marc Levy  
ASSOCIATED PRESS

HARRISBURG — Petroleum services giant Halliburton Co. said Monday it has begun publicly disclosing the identity of chemicals in solutions it makes to be pumped into the ground by Pennsylvania's booming natural gas industry.

A new Halliburton website provides information on the chemicals the company says are in its three most commonly used solutions in the state, where drilling crews are rushing to exploit the Marcellus Shale, the biggest known deposit of natural gas in the nation.

Halliburton does not say how much of each chemical has been pumped into the ground or identify the wells where they are used, nor does it reveal the exact concentration of each chemical in an overall solution. In general, water makes up the lion's share. Sand comprises about 6 percent while chemical cocktails amount to less than 2 percent.

"We think it's a great first step," Halliburton spokeswoman Teresa Wong said.

Many of the chemicals, including hydrochloric acid, methanol and acetic acid, are toxic in high enough doses, and appear in

everyday household and industrial solvents, cleaners and adhesives. One chemical, formaldehyde, is classified by the federal government as "reasonably anticipated to be a human carcinogen."

Myron Arnowitt, the Pennsylvania state director of nonprofit environmental advocacy group Clean Water Action, called the information "concerning" and said Halliburton should be able to say which chemical is being used at each well site.

"They should know what they send where. I can't imagine they don't know," Arnowitt said.

Last week, the federal Environmental Protection Agency issued a subpoena to Halliburton, seeking a description of the chemical components used in its hydraulic fracturing, or fracking, solutions that are used to break up the shale and release the natural gas deposits. The EPA said Halliburton refused to voluntarily disclose the chemicals, while eight other major energy companies complied.

Halliburton responded that it has worked to supply the EPA with the information it wants.

Wong said Monday the new website about fracking chemicals in Pennsylvania was not intended to satisfy the EPA's request for

information. The Houston-based company plans similar disclosures for other states where the company's chemicals are being used in the drilling practice, Wong said.

She did not identify the other states, and could not immediately say whether other drilling solutions the company produces include chemicals not listed on the website.

State and federal regulators are increasingly seeking disclosure of the chemicals, particularly in the northeastern United States where the use of fracking — in which millions of gallons of water, sand and toxic chemicals are injected into each well at high pressure to break apart the shale and release trapped gas — is raising pollution concerns.

While the industry maintains that fracking has proven to be safe over the decades, homeowners are coming forward with tales of drinking-water wells producing brown, foul-smelling water or water polluted with methane and chemicals.

Drilling-services companies have largely sought to protect their chemical formulas, calling them proprietary.

Pennsylvania state regulations that could be finalized later this year would require disclosure.



NASA/Associated Press

This composite image provided by NASA shows a galaxy where a recent supernova probably resulted in a black hole in the bright white dot near the bottom middle of the picture.

# Exploded star forms black hole in its wake

By Seth Borenstein  
ASSOCIATED PRESS

WASHINGTON — Astronomers may have lucked into the ultimate in cosmic baby pictures: a voracious black hole fresh from its birth.

After watching a nearby star that exploded into a supernova in 1979, astronomers now believe the star's death wasn't an ordinary one. The star's explosion was big enough to cause a black hole to develop in its wake. They think it's a black hole because they see something steadily consuming the gassy remnants of the exploded star, which is a telltale sign of a black hole. It sucks up everything in sight.

And in this case it's a lot. In the past 30 years since this star exploded, this baby black hole has eaten about the equivalent of the Earth in mass, which is about as big as black hole appetites can get, said Harvard astrophysicist Avi Loeb. He's co-author of a new paper in the journal *New Astronomy* and he discussed the findings at a NASA news conference Monday.

On a cosmic scale the mass of the Earth is not an awful lot to

eat, but from Earth's point of view, it's kind of awesome, said NASA astrophysicist Kimberly Weaver. "It's like the planet eater in 'Star Trek,'" she said.

Black holes are warped regions in space where it is so dense that nothing — not even light — escapes. Scientists in this case see energy bursts from matter as it is sucked in. That matter is heavy gas from the exploded star, and possibly a partner star that may have been next to it, Weaver said.

"It's the first time we're seeing a black hole being born in a normal supernova," Loeb said. "We're able to learn about environments that cannot be reproduced in the lab and can only be observed in the universe."

While black holes are seen throughout the universe, it is unusual to witness one from near birth that "evolves and changes into its youthful stages," said Weaver.

And unlike other black holes, thanks to the keen eye of a Maryland schoolteacher who witnessed the supernova in 1979, astronomers know exactly when this black hole was born, Weaver said.

# Heart device companies to fix issues

By Matthew Perrone  
ASSOCIATED PRESS

WASHINGTON — Federal health officials are calling on manufacturers of heart-zapping defibrillators to fix long-standing problems with the emergency devices that have triggered dozens of recalls and occasionally have led to injuries and death.

The Food and Drug Administration said Monday that the devices have been plagued by design and manufacturing flaws for years, occasionally failing to work in life-and-death situations.

In 2009, the FDA issued 17 recalls on the devices, up from nine in 2005. And more than 28,000 problems have been reported to the agency in the last five years.

Defibrillators use electric shocks to jolt the heart back to normal after patients collapse from cardiac arrest. Once considered high-tech devices for use in

emergency rooms, defibrillators are now found in airports, office buildings, gyms and schools.

But the FDA says the companies that make the devices — including Philips Healthcare, Cardiac Science Corp. and others — have failed to fix problems that have led to the recall of hundreds of thousands of devices.

"The pattern of widespread safety problems we have seen with external defibrillators is unusual and it calls for a multi-pronged, comprehensive approach," said FDA's medical device chief Dr. Jeffrey Shuren. "Many of the problems we've identified are preventable, correctable and have the potential to impact patients' safety."

Problems cited by the FDA include:

- faulty circuitry that can cause devices to fail.
- confusing design that makes devices difficult to use.

— sloppy manufacturing standards that can lead to device defects.

Spokesmen for Philips Healthcare and Cardiac Science would not immediately provide comment Monday. Other makers of the devices include Defibtech and Welch Allyn.

FDA officials say manufacturers typically fix problems on a case-by-case basis, rather than addressing larger quality problems with their devices.

In one case, the FDA said, a company tracked hundreds of reports of a common defect with its defibrillators, fixing each device individually. But the company never issued an announcement to alert all owners of the devices to the problem.

The FDA also said it had uncovered a circuitry problem that caused a defibrillator to shut down, which may have resulted in the patient's death.

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