

Never let a serious crisis go to waste? West Virginia decides to plug the hole in regulation of aboveground storage tanks

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On January 9, 2014, in Charleston, West Virginia, a chemical leak impacted the drinking water of 300,000 West Virginians in the state’s capital and an adjacent nine-county area. Freedom Industries Inc. (Freedom) stored a mixture of coal-cleaning chemicals, crude MCHM (consisting mostly of 4-Methylcyclohexanemethanol), and PPH Stripped (collectively MCHM), along the Elk River in an aging aboveground storage tank (AST). Approximately 10,000 gallons of the organic compound MCHM escaped from the tank and secondary containment and entered the Elk River above the water intake for the local water utility, West Virginia American Water.

West Virginia’s governor and President Obama declared a state of emergency in nine counties, and the state issued a do-not-use order for the utility’s water. For several days people were told not to use the water for drinking, cooking, cleaning, washing, or bathing. The only allowable uses were for sanitation and fire suppression. It took nine days before state officials lifted the do-not-use order for all customers except pregnant women. The advisory for pregnant women remained in place for two months, until the state could no longer detect MCHM in the drinking water. Although the spill was significant in the number of affected people, it was fortunately insignificant in its immediate human health impact. No lives were lost, but the long-term impact of MCHM on the population is unknown.

The chemical leak calls for a renewed analysis of current regulations to determine what regulatory holes exist, if any, and how they can be plugged to prevent a similar event.

“I don’t think of them as being unregulated, but as being under-regulated.”

Randy Huffman, Secretary of the West Virginia Department of Environmental Protection, made this statement to clarify the confusion over whether Freedom was “regulated.” His remarks are fairly accurate. Freedom was not “unregulated” because it is subject to the West Virginia National Pollution Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Associated with Industrial Activity (General Permit). It is also accurate to describe Freedom as being “under-regulated” because its General Permit only superficially regulated the manner in which the company stored the MCHM. Regular inspections of NPDES general permits were not required.

The General Permit focuses on best management practices for the control of stormwater discharged from areas of industrial activity, not ASTs and the chemicals they contain. The only AST requirement comes from the West Virginia Groundwater Protection Act, which requires secondary containment for ASTs and quarterly inspections conducted by the owner, not regulators. Freedom's General Permit incorporated these requirements. Because Freedom's secondary containment was in disrepair and failed to contain the MCHM leaking from the AST, proper adherence to its permit and current regulations may have prevented the chemical leak.

The state environmental agency could have also inspected Freedom's site to ensure it was adhering to its General Permit but the agency has limited resources to inspect the hundreds of similar facilities in the state covered by NPDES general permits on a regular basis. Because the agency lacked a mandate to conduct regular inspections, the agency focused on complaints about specific permits. Additionally, most environmental laws focus on a specific medium (e.g., air emissions, water discharges, waste disposal), not holistically on an entire facility. This results in regulators most often conducting narrower, media-specific inspections.

The Freedom site is a perfect example of these practical limitations. Although no inspections took place regarding the General Permit, the agency's Division of Air Quality conducted inspections in response to complaints about the licorice odor of MCHM. The division focused on air quality and would not have been looking at spill prevention.

Contributing to a gap in regulation are programs that regulate ASTs but exclude MCHM because it is not a statutorily defined substance under those programs. It is not a waste under the Resource Conservation and Recovery Act, nor is it oil that would subject it to the U.S. Environmental Protection Agency's (EPA) Spill Prevention, Control and Countermeasure Rule. MCHM is not a listed or extremely hazardous substance that subjects it to the Clean Air Act's risk management plan program, and Freedom's facility did not generate enough air pollution to bring it under other requirements of the act. These programs have requirements for the design, integrity, installation, or inspection of ASTs that may have prevented Freedom from using an AST that was more than 50 years old and failed to meet minimum industry standards.

Other laws directly address the chemical used in an industrial setting. The U.S. Occupational Health and Safety Administration classifies MCHM as hazardous, which triggers the requirement that MCHM's manufacturer prepare material safety data sheets. This classification in turn triggers the requirements of the Emergency Planning and Community Right-to-Know Act to file Tier I and Tier II forms with state and local emergency planning agencies indicating which chemicals are being stored on-site. But these laws only provide information; they do not mandate safety precautions.

MCHM is also one of 62,000 "grandfathered" chemicals in existence when the Toxic Substances Control Act (TSCA) was enacted in 1976. As a result, EPA is not required to conduct testing on its toxicity and can only require the manufacturer to conduct testing if EPA can provide evidence that the particular chemical poses a risk. Putting the burden on EPA contributes to the dearth of public information

about MCHM. After the chemical leak, it came to light that the manufacturer had conducted some testing on MCHM but considered those tests proprietary (although the manufacturer eventually released its studies to the public).

These overlapping and complementary laws show that, technically, Freedom's facility was regulated. In-depth review reveals that the practical difficulties of effectively implementing current regulations left a big hole. Without standards directly addressing ASTs and with little oversight to ensure compliance with current regulations for secondary containment, Freedom's facility leaked through the regulatory landscape. There is little doubt that if Freedom had adhered to the current regulations—and the state's environmental agency had fully implemented those regulations—the chemical leak may have been prevented.

With regard to chemicals themselves, there is a hole where information is not readily available, such as the specific hazards associated with MCHM. Wholesale testing of the 84,000 and counting chemicals in the TSCA inventory will never be required, however, even with significant TSCA reform, because the task would be onerous and prohibitively expensive. Notably, the lack of information caused one of the greatest impacts from the chemical leak—loss of confidence in the government's ability to protect public health.

“I can't tell you that the water is unsafe, but I also can't tell you that the water is safe.”

Jeff McIntyre, president of the water utility, made this statement on the morning after the leak occurred, and it exemplifies the public's lack of confidence in the official response to the leak. Officials simply did not know enough about MCHM and its potential hazards to effectively and confidently present information to the public. No regulation required substantial testing that could have explained the acute and chronic impacts, if any, MCHM has upon human health.

Despite this lack of information, the U.S. Department of Health and Human Services Centers for Disease Control and Prevention (CDC) calculated a “protective of public health” level of concentration of MCHM in water. The public and outside experts assailed CDC with allegations that it had insufficient information regarding MCHM to properly conduct its calculation—essentially opining that the CDC was equating lack of evidence of harm with evidence of safety. It did not help that the CDC conducted its calculation outside public discourse and for days refused to release information on how it determined the level. Furthermore, two days after parts of the water system were flushed and deemed safe to drink, the CDC released a recommendation—“out of an abundance of caution”—that pregnant women should refrain from drinking the water until MCHM was no longer detected.

The CDC's missteps in communication were only part of the equation. The public raised additional concerns regarding (1) the flushing process utilized to clean the system, (2) inhalation of MCHM during hot showers, (3) disagreements between state and county health officials, and (4) the MCHM's odor still being observed at levels far lower than the CDC level. The prevalence of the licorice odor in the water, even after the do-not-use order was lifted, contributed greatly to the public's skepticism. Even weeks after officials lifted the do-not-use order and deemed the water “safe,” not a single water utility or government representative would say that the water was “safe” at a congressional field hearing.

If the water utility and local emergency authorities had been better prepared, most of this miscommunication could have been avoided. The 1996 amendments to the federal Safe Drinking Water Act (SDWA) focused on surface sources of water. West Virginia implemented a Source Water Assessment and Protection Program (Water Protection Program) pursuant to the amendments and the West Virginia Department of Health and Human Resources Bureau of Public Health prepared Source Water Assessment Reports (Assessment Reports) for each public water system. An Assessment Report includes an inventory of land uses within the recharge area of the source water and the susceptibility of contamination from these land uses. Once an Assessment Report is completed, the 1996 amendments to the SDWA recommend that the Bureau of Public Health prepare a Source Water Protection Plan (Protection Plan). A Protection Plan goes beyond the Assessment Report by developing contingency and management plans and identifying alternative sources of water. Because there is no mandate that a Protection Plan be prepared, there is a disconnect between the collection of information in the Assessment Report and the utilization of that information to prevent and respond to contamination of the source water.

Although the Bureau of Public Health prepared an Assessment Report for the water utility's Elk River intake prior to the accident, the water utility never completed a Protection Plan. If the water utility had completed a Protection Plan, it would have described activities to address the protection of the source water and plans for responding to contamination. Examples include: (1) collection of additional information regarding MCHM since it was a known potential contaminant; (2) planning for periodic inspections of sites containing potential contaminants, including Freedom's site; (3) identification of alternate water sources in case of contamination; and (4) innumerable other activities to protect the source water including zoning, conservation easements, and studies of potential contaminants.

"The bill outlines a reasonable regulatory structure to ensure all aboveground storage tanks are meeting standards to ensure tank integrity."

West Virginia Governor Earl Ray Tomblin uttered this statement when he signed Senate Bill (SB) 373 containing the Aboveground Storage Tank Act (AST Act) and the Public Water Supply Protection Act (Water Protection Act) into law. He concluded that "This is a good bill." Coincidentally, the leak occurred while all 134 West Virginia legislators were in town for the regularly scheduled session. Having experienced firsthand the ramifications of the leak and facing significant pressure from the public, the West Virginia legislature took up the daunting task of reviewing current regulations.

The AST Act implements a statewide registration and permitting program for ASTs and sets forth design, integrity, and installation standards. It also requires an annual inspection by a trained individual knowledgeable in ASTs. In addition to the AST Act, the Water Protection Act looks at potential sources of significant contamination located within zones of critical concern above public water systems' surface intakes. In addition, the legislature amended the Water Protection Program to require that all public water systems complete or update a Protection Plan by July 1, 2016.

The passage of SB 373 hopefully plugs the regulatory holes. Nevertheless, even though the legislature took relatively swift action in enacting broad regulatory reform, confidence in government is at an all-time low. Citizens still do not trust the safety of the water and questions remain, particularly whether there are long-term effects of the spill that cannot yet be quantified. Proper implementation and enforcement of the new acts will go a long way toward healing this loss of confidence.

West Virginia's experience serves as a cautionary tale for other states that might have the same regulatory holes regarding ASTs and the protection of public drinking water sources. States should not wait until a large spill threatens the drinking water of its citizens before taking action.