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FEBRUARY 4, 2014

EXAMINATION OF THE SAFETY AND SECURITY OF DRINKING WATER SUPPLIES FOLLOWING THE CENTRAL WEST VIRGINIA DRINKING WATER CRISIS

U.S. SENATE, COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, SUBCOMMITTEE ON WATER AND WILDLIFE

ONE HUNDRED THIRTEENTH CONGRESS, SECOND SESSION

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Barbara Boxer *[view video]*
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Mr. Erik D. Olson *[view PDF]*
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Mr. Brent Fewell *[view PDF]*
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Mr. Michael W. McNulty *[view PDF]*
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Mr. Richard O. Faulk *[view PDF]*
Partner, Hollingsworth, LLP

This hearing compilation was prepared by the Homeland Security Digital Library, Naval Postgraduate School, Center for Homeland Defense and Security.

Mr. R. Peter Weaver *[view PDF]*
Vice President of Government Affairs, International Liquid Terminals Association

AVAILABLE WEBCAST(S):*

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- *http://www.epw.senate.gov/public/index.cfm?FuseAction=Hearings.LiveStream&Hearing_id=8ccdaff7-cdc6-8a6f-ca6e-a7017498083c*

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Office of the Secretary of State
Building 1, Suite 157-K
1900 Kanawha Blvd., East
Charleston, West Virginia 25305

Natalie E. Tennant
Secretary of State
State of West Virginia

Telephone: (304) 558-6000
Toll Free: 1-866-SOS-VOTE
Fax: (304) 558-0900
www.wvsos.com

Testimony of West Virginia Secretary of State Natalie E. Tennant

U.S. Senate Committee on Environment and Public Works

Subcommittee on Water and Wildlife hearing entitled, "Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis"

Tuesday, February 4, 2014

Thank you Chairman Boxer, Ranking Member Vitter, Subcommittee Chair Cardin, Ranking Member Boozman, and all members of the committee for holding this hearing and inviting me to share the challenges West Virginia families and businesses are facing in the aftermath of the water crisis that left 300,000 residents of nine West Virginia counties without access to clean, safe water.

Thank you Madam Chair, and our West Virginia Senators, Jay Rockefeller and Joe Manchin for your swift response in introducing *The Chemical Safety and Drinking Water Protection Act of 2014*. In particular, I appreciate the provisions in the bill aimed at providing greater transparency and public information.

I also encourage you to consider developing measures to ensure that when existing safety standards are unavailable (as was the case with MCHM), individuals from local health departments, county governments and members of the public are included in the development of safety thresholds.

Lack of consistent, trustworthy information has been among our greatest challenges and frustrations in the aftermath of the Elk River chemical spill. Your legislation will go a long way toward providing the public with better resources and information in the future.

Call for Answers

At the same time, West Virginians need answers now.

The water ban has been lifted, but inconsistent information has left many West Virginians still wondering whether their water is safe.

First we were told one chemical leaked into our water. Then we were told about another.

First we were told 7,500 gallons. Then it was raised to 10,000.

One day we were told the water was safe after flushing, and days later, we were told pregnant women should not drink the water. That just doesn't add up. Either our water is safe or it is not.

As recently as Friday, disturbing reports showed detectable levels of MCHM still present in the water of at least five West Virginia schools.

People are fed up. They are angry, and they are scared.

Several people showed up at a town hall in Charleston last week with rashes they believe are connected to their water. Others have complained of headaches, nausea and vomiting. Families are melting snow to give their kids baths.

As the mother of an 11-year-old daughter living in Kanawha County, I share their concerns.

As their Secretary of State, I demand answers, and I ask this Committee to help me get them.

I've called on the Center for Disease Control to release its testing and methodology and explain to West Virginians how it determined what levels of MCHM are safe in our water.

On Friday, I launched a petition for West Virginians to join my call for answers. More than 100 people signed on in the first hour alone.

"The truth is all I ask for," one signer wrote.

Each one of those signatures is a mom, dad, friend or neighbor. They deserve to know with 100 percent certainty that what's coming out of their faucets will not harm them and their families.

Long-term Study Needed

This weekend I met with Dr. Rahul Gupta, Executive Director at Kanawha-Charleston Health Department.

According to Dr. Gupta, the Kanawha-Charleston Health Department has not received any valid, scientific knowledge about the possibilities of long-term symptoms, including cancer or birth defects, that exposure to MCHM may cause over the long-term.

Dr. Gupta is proposing a 10-year study to monitor the long-tem health and well-being of community members affected by exposure to MCHM.

I urge this Committee to work with my office, Dr. Gupta, the Health Department, and state and local officials to provide the resources we need to begin this study right away.

As one father wrote to me last week, "we are accountable for our children's health and future."

We owe it to them to conduct this study.

Economy Cannot Recover Until Public Trust is Earned

As Secretary of State, my office is on the front lines working with West Virginia businesses every day – businesses like Bridge Road Bistro, famous in Charleston for its Sunday breakfast buffet and live music on Wednesday nights.

Bridge Road's manager Sandy Call told my office they lost $40,000 during the do-not-use ban. Reopening cost another $3,000, and Bridge Road Bistro has spent another $36,000 on bagged ice, bottled water and canned soda to reassure customers who are still uneasy about tap water. Sandy estimates this will continue to cost an extra $500 a day indefinitely until public trust in the water is regained.

And, it is not just our businesses that took a hit during the ban. Sandy estimates her workers lost $30,000 in wages and tips.

The day after the spill, I went up to Riverside High School in Quincy to help hand out water. The school, which should have been filled with children learning, sat empty with a giant tanker truck out front and lines of people holding on to every container they could find, waiting for the chance to fill them with water.

I met the manager of a local Shoney's and an Arby's worker there in line, both forced off work because of the water ban. These folks work hard to make ends meet on minimum wage and tips. Every hour on the clock goes toward a bill that needs paid, gas for the car, or food for their families. After as many as 10 days forced out of work, too many workers just like them are left fearful, wondering how they will make this month's mortgage or pay the daycare bill.

Tiffany, an employee at a local hotel told me she wasn't quite sure how she would make up the income she lost. But she was giving away her shifts to co-workers, because they had families to support and needed the extra time more than she did.

That is just the kind of people we West Virginians are.

Thanks to the generosity of folks from around West Virginia and all across the country, the United Way has raised more than $70,000 to help our workers who lost shifts.

My office is working with the West Virginia State Legislature and the Governor's office to pass legislation that will provide much-needed support to our businesses.

And I thank the Small Business Administration for providing Economic Injury Disaster Loans to help small businesses impacted by the disaster. My office stands ready to assist with any information and paperwork that may be needed to complete those loans and get our businesses the help they need.

But our work is far from over. Calculating the loss to West Virginia's economy has been difficult. We may never be able to put a price on things like the time our children were not learning in the classrooms.

But the Charleston Visitors Bureau (CVB) says it has calculated about $1 million in losses from a survey of 12 businesses so far. The CVB estimates that $1 million would need to be multiplied by hundreds to get an overall estimate.

One thing is certain: our economy cannot recover until we regain public trust and confidence in our water supply.

Bringing in bottled water is costing our restaurants money and time that they should be spending growing their businesses and hiring new workers. Concerns over public health and safety jeopardize the tourism, on which, West Virginia relies. And our ability to attract new businesses and jobs to West Virginia is weakened as long as people do not trust the water.

We need answers we can trust.

On behalf of all West Virginians I thank you for holding this hearing, and again ask for your help in getting the information we need to restore public confidence in our water and protect against long-term health risks resulting from this crisis.

Attached:

January 17, 2014 Letter from the West Virginia Secretary of State Natalie Tennant to the Centers for Disease Control

Natalie E. Tennant
Secretary of State
State of West Virginia

January 17, 2014

Thomas Frieden, MD, MPH
Director, Centers for Disease Control and Prevention
1600 Clifton Road
Atlanta, GA 30333

Dear Dr. Frieden:

I write today to request your immediate attention and assistance regarding the public need for transparent information in the case of the chemical spill that contaminated the water supply for thousands of West Virginians last week.

I have spent days on water lines, talking with West Virginians who are justifiably concerned about the safety of the public water service. They deserve easily accessible information that will help restore their confidence in the water supply.

I request that the Centers for Disease Control and Prevention take the lead in creating a website that provides clear and accessible answers to the many questions West Virginians have in one accessible and easy to use location.

As you know this is a multi-agency response involving federal, state, and local jurisdictions. A single source of public information would make it easier for concerned West Virginians to quickly find the answers they need to restore public confidence.

The website should provide information including a comprehensive timeline of events, color-coded maps of areas that have been deemed safe to use the water and those that have not, information about MCHM, and water test results.

Most importantly, the site should provide information about the methodology used to determine "safe" levels of MCHM in the water supply. In order for the public to regain confidence in the water supply, it is incumbent upon the responsible agencies to provide as much information as possible in an easily accessible and understandable format.

I await your response to this urgent request and thank you for your consideration.

Sincerely,

Natalie E. Tennant
West Virginia Secretary of State

Building 1, Suite 157-K
1900 Kanawha Blvd., East
Charleston, West Virginia 25305
(304) 558-6000
www.wvsos.com

United States Senate

Committee on Environment and Public Works

Subcommittee on Water and Wildlife

February 4, 2014

Randy C. Huffman, Cabinet Secretary

West Virginia Department of Environmental Protection

The State of West Virginia and its Department of Environmental Protection (DEP) appreciate and welcome the opportunity to address this committee. I am hopeful that, by sharing West Virginia's experience from the perspective of an environmental regulator, not as a public health official, I can provide insight to you and other states as we seek to provide more comprehensive regulation of the pollutants stored in aboveground storage tanks, so as to better protect human health and the environment and minimize the risks associated with this industrial activity.

On January 9, 2014, DEP received a complaint concerning an odor around a tank farm owned by Freedom Industries, Inc. Freedom Industries operated a bulk storage distribution center located in Charleston along the Elk River. Upon investigation, DEP personnel observed free product in secondary containment units surrounding aboveground storage tanks holding a chemical known as 4-Methylcyclohexne Methanol (MCHM). DEP personnel also observed that this material appeared to have escaped the secondary containment and entered the Elk River approximately 1.5 miles above a public water supply intake. At 12:05 p.m. a

Freedom Industries employee reported the spill to DEP's Emergency Response Spill Hotline, and stated that the facility had discovered a hole in one of the tanks.

DEP officials shut down the site and instructed Freedom Industries to immediately take all necessary measures to contain, recover, and remediate the material that had escaped the aboveground storage tank and the secondary containment structure. DEP officials further instructed Freedom Industries to empty the three tanks that were identified as containing MCHM and move that material to a separate site that had appropriate secondary containment structures, and to identify the contents of the 11 other tanks located on the site. DEP has had a continuous presence on the site since January 9, and is directing the containment and remediation measures with the assistance of officials from Homeland Security, the Coast Guard, EPA, and the Chemical Safety Board.

This incident highlights an issue that exists not just in West Virginia, but all over the country. While all states have substantially similar regulations for underground storage tanks, based on regulations promulgated by the EPA, the same is not true for their surface-situated counterparts. EPA does not have regulations pertaining to all ASTs, and the states that do regulate them do so a myriad of different ways. One similarity - most states that have AST regulations have them as a result of an event similar to what has just happened in West Virginia. Also, most states focus primarily on tanks containing petroleum products or hazardous waste or materials regulated by CERCLA. This leaves virtually unregulated an entire universe of pollutants stored in aboveground tanks. It is easy with hindsight to see a potential threat existed on the Elk River, and that clarity also sharpens our focus looking forward. According to the EPA TSCA Chemical Inventory, there are approximately 84,000 known industrial chemicals being used

in this country today; about 20,000 of those have been added to the list in the last 30 years with little change in the list of regulated chemicals. While most of these materials are not currently classified as hazardous, the truth is we simply do not know enough about them. The material that leaked into the Elk River on January 9th is one of those chemicals.

The West Virginia Legislature is considering legislation that would help to fill the void that currently exists in the regulation of aboveground storage tanks. The bill being discussed in the West Virginia Legislature today requires some things that are very important from DEP's perspective: it requires the owner or operator of an AST with a capacity of 1,100 gallons or more to register with DEP, identifying the tank's contents, age, and location; to have a registered professional engineer inspect the tanks annually and certify their integrity; to develop spill prevention and emergency response plans; and to construct and maintain adequate secondary containment. Our Legislative Session is not even half way over yet, so it remains to be seen how the law will look upon passage, but these are important environmental and public health protections that DEP will strongly support throughout the debate. On the federal side, we also support Senator Manchin's proposed legislation to tighten up the standards in the Safe Drinking Water Act. By requiring EPA to establish minimum acceptable standards by which the states will be held accountable, we can significantly reduce the risk of similar problems in the future.

West Virginia's proposed AST program has been modeled after the very successful underground storage tank (UST) program DEP has operated for more than two decades. The UST program was developed in the late 1980s, because environmental regulators recognized that over 2 million UST systems, estimated to be located at over 700,000 facilities nationwide, existed with little or no oversight,

and that over 75 percent of the existing systems were made of unprotected steel, a type of tank system proven to be the most likely to leak and thus create the greatest potential for health and environmental damage. The success of this program nationally is indisputable. Currently, West Virginia has about 1600 facilities with 4300 tanks registered in the UST program.

The AST universe is not nearly as well known. Many of these facilities are regulated by registering under a general NPDES stormwater permit, because the only environmental impact these tanks were thought to have was stormwater runoff; they were not supposed to discharge, leak or otherwise emit pollutants into the environment. ASTs can also be found at facilities covered by individual NPDES permits, but that permit does not require integrity testing or leak detection monitoring, either. The registration requirement in the current legislation is the key to us getting a handle on the universe of structures that are currently under-regulated.

But until such time as we have that requirement in law, we have undertaken our own investigation into the number of ASTs in the State. We started by looking at the 1063 registrations under the Multi Sector General Stormwater Permit, as well as the 204 individual NPDES permits, to try to determine what facilities have aboveground tanks on site. This investigation is still in its early stages, but so far, it has yielded an estimate of about 600 facilities housing approximately 3500 tanks across the State. Further investigation has determined that more than 100 of these - with as many as 1000 ASTs - may exist within an area that could impact a public drinking water source. Many of these tanks contain petroleum or other materials that may be regulated under different programs, in which case they would not pose the risk that the Freedom Industries site and others like it pose, but these numbers clearly raise concerns that this incident could be repeated in other areas of the

State. We are optimistic that the legislation currently pending in West Virginia will greatly reduce the risk that we will suffer a repeat of this type of incident, and that we can serve as an example to other states to be more proactive in their regulation of these structures so they do not find themselves in the situation with which we are currently dealing.

Thank you for the opportunity to be here and speak to you about the water crisis in West Virginia. This crisis reminds us all of how basic and fundamental clean water is to a stable society and how vulnerable our water supplies are, not only in West Virginia, but nationwide.

Testimony of
Erik D. Olson
Senior Strategic Director for Health & Food
Natural Resources Defense Council

Before the
Subcommittee on Water and Wildlife
Of the
U.S. Senate Committee on Environment and Public Works

At the hearing entitled
Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis

February 4, 2014

Good morning Chairman Cardin, Ranking Member Boozman, and members of the subcommittee, I am Erik D. Olson, Senior Strategic Director for Health and Food at the Natural Resources Defense Council (NRDC). I appreciate the opportunity to testify today at this important hearing. NRDC is a national, non-profit organization with over 1.5 million members and activists that works to safeguard human health and the environment.

On January 9, 2014, residents of Charleston, West Virginia—and soon people across the state, nation, and the world—learned that the drinking water of over 300,000 people in and around Charleston was contaminated due to a large chemical release from a Freedom Industries facility immediately upriver from the city drinking water plant's intake. Gradually the facts started to come out. First, we were told that the chemical—which has a smell like licorice—was Crude MCHM, primarily 4-Methylcyclohexane methanol. Twelve days later, the company admitted that another chemical, PPh, or polyglycol ethers (apparently propylene glycol phenyl ether), also had been released, in smaller amounts. Toxicity data for the chemicals was, to put it mildly, sparse, so officials trying to determine a "safe" level were working with very little information.

A series of shock waves traveled through the city as the residents were told not to drink or bathe in the water. Days later, the federal Centers for Disease Control and Prevention (CDC) teamed up with state health officials and told residents that a 1 part per million (ppm) level on MCHM was basically ok. Residents were soon told the water system had been flushed out and the water was safe enough to drink (at least in some parts of the distribution system). But then the next day citizens were told that "CDC recommends—out of an abundance of caution—that pregnant women drink bottled water until there are no longer detectable levels of MCHM in the water distribution system." Understandably, residents were confused and upset, wondering whether it really was safe for their kids, nursing moms, and others. As my colleague Dr. Jennifer Sass has highlighted in her detailed commentary,[1] the supposedly safe level proclaimed by state and federal officials was based on very little information, and was not sufficiently protective of vulnerable people like pregnant moms.

Last weekend, I visited with many residents in Charleston and appreciated the courtesy of West Virginia American officials who gave me a tour of their water treatment plant. Many of the residents I spoke with over the weekend and earlier are profoundly upset and deeply skeptical of reassurances of the water's safety. Many stores and restaurants across the city continue to advertise bottled water sales, and some restaurant signs proclaim that they cook with bottled water, despite reassurances that the water is now safe in most of the city.

I met one couple, Harish and Meena, who own a small Indian restaurant and grocery store within view of the gold-domed state capitol. They had to shutter their restaurant for 5 days, and tossed a lot of food. Due to the lack of cash flow, they had to borrow money to meet payroll, ask people to hold checks, and spent great deal of money on replacement food, professional cleaning of equipment to get rid of the chemicals, and many other expenses. They are still spending money to buy bottled water by the case for cooking and service. They even had to change some of their recipes because spices important to Indian food taste a bit like licorice. They couldn't use those spices out of concern that their food would be rejected by customers suspecting contamination. Their grocery store also lost money from fresh foods that went bad because people stopped cooking due to a lack of water.

I heard stories of people driving to Kentucky to get bottled water during the crisis, and of many families who had to stay far away with friends or relatives, or drove 60 miles to take a shower. I heard about a pregnant mom who was upset that she had returned to using the water after being assured of its safety, only to be told later that "out of an abundance of caution," maybe she shouldn't have done so. Parents are angry that recent tests show levels of the chemicals in schools are higher than expected, and many are skeptical of assurances of safety.

One remaining issue is that apparently all of the testing done by state, utility, and other government officials is being done at hydrants or public locations (such as schools), not inside homes. Andrew Whelton and his team of scientists from the University of South Alabama, initially without funding, drove to Charleston and started to conduct at the tap sampling of drinking water, which they hypothesized may be of different quality than that coming from flushed hydrants. For example, even if homeowners have now flushed the water in their homes as recommended, some worry that the chemicals may have penetrated into their plastic water piping during the days that the water was stagnant, and that the chemicals may continue to be released into the water for some time. While Whelton's team recently received a small grant from the National Science Foundation, there are insufficient resources to conduct an extensive testing regime that would be representative of the 300,000 customers affected. This is an issue with the way that SDWA testing is generally conducted—usually not at the tap of actual users.

Apparently the water intake at Charleston, like that of many other water utilities across the country using rivers and lakes, cannot simply shut off when there is a big spill and continue to serve water to customers unaffected water. The treatment technology at Charleston—basically permanganate, sedimentation and clarification, sand and gravel filters with about three feet of carbon caps, available powdered activated carbon to deal with occasional taste, odor, and other problems, and chlorination—simply was unable to deal with a significant release like this. And they had no other water source that they could turn to, though West Virginia American Water officials told me they had requested access to an alternative source many years ago.

There are likely hundreds of other water utilities, large and small, using surface water that simply cannot deal with a significant spill, release, or other major pollution in their watershed. Many of

us remember the massive oil spill in 1988 by an Ashland Oil facility that rolled down the Monongahela and Ohio rivers, temporarily contaminating drinking water sources for what EPA estimated was one million people in Pennsylvania, West Virginia, and Ohio.

Cincinnati, Ohio had the foresight twenty years ago to install deep bed granular activated carbon (GAC) because of repeated spills and other water quality problems, including those caused by upstream polluters on the Ohio River. The cost? About $20 per household per year.[2] The vast majority of large surface water systems do not use such modern technology, leaving them vulnerable to spills and other pollutants from upstream sources.

Where Did the System Fail?

The Safe Drinking Water Act

The public water supply provisions of the Safe Drinking Water Act (SDWA) as originally enacted in 1974 were focused upon setting standards for contaminants in drinking water and moving water systems towards improved treatment—but did virtually nothing to ensure what experts in the field refer to as "multiple barriers to contamination"[3]—that is, protection of water sources against pollution, as well as effective treatment. The law focused on treatment, not protection of the sources of the water, which the SDWA left largely unaddressed.

However, the SDWA Amendments of 1996 (Pub.L. No. 104-182) included provisions requiring that states complete source water assessments to assess whether water supplies are vulnerable to pollution. These assessments are supposed to evaluate what the current and potential pollution sources are upstream of surface water-supplied public water systems, or that could contaminate groundwater-supplied systems. While NRDC and a coalition of public health, consumer, and environmental groups had urged the inclusion in the 1996 legislation of strong enforceable source water *protection* provisions that would prevent or remedy upstream or up-gradient water pollution, these measures were opposed by some polluting industries and agricultural interests, and were not included in the final legislation.

Thus, under section 1453 of the SDWA, source water assessments were EPA-funded across the country, but it appears that too often, they were completed but little or nothing was done when they identified significant known or potential pollution sources upstream of water intakes. We have reviewed many of these documents from water systems all over the United States. Most of those for surface water systems highlight known or potential industrial, commercial, or other sources of pollution upstream of their facility.

For example, West Virginia's source water assessment for Charleston (Elk River) found high vulnerability of the water supply to contamination from upstream polluters like this facility.[4] In fact, the assessment identified 53 "Potentially Significant Contamination Sources" in the Charleston water supply's watershed, including 26 so close they were in the "Zone of Critical Concern." This included 7 industrial facilities in the Zone of Critical Concern.[5] Presciently, the assessment found that "Of these [Potentially Significant Contamination Sources], some of the industrial sources may have large volumes of potential contaminant stored." Recognizing the risks, the assessment recommended: "Protection options need to be actively considered to further evaluate and manage all potential contaminant sources and the WVAWC-Kanawha Valley public water supply should place a high priority on protecting its supply source."[6]

Unfortunately, there is little evidence that either the state or the water utility acted on these recommendations or took effective action to address the identified pollution sources.

Absent a huge effort to collect and review every source water assessment completed for thousands of water systems, there is no way of knowing the precise number of drinking water plants that, like the Charleston system, have major known or potential polluters upstream. However, based on my experience with the Safe Drinking Water Act for over 25 years, and from my review of a large number of source water assessments nationally, it would be reasonable to surmise that virtually every state has a similar situation for at least some of their drinking water supplies. Most big cities get their water from surface water, and most surface water is vulnerable to industrial pollution and spills, as well as other pollution sources. Groundwater-supplied drinking water utilities also often are vulnerable to contamination. NRDC did a report in 2003 documenting that most cities reviewed are doing little if anything to protect their source water,

though a few, such as New York, Seattle, Boston, and Portland, Oregon, have taken significant steps to protect their sources of fresh water.[7]

Two other provisions in the SDWA are worthy of note here. The Bioterrorism Act of 2002 (Pub. L. No. 107-188, Title IV), added section 1433 to the SDWA, requiring that larger public water systems complete two tasks. First, the utility is required to complete a vulnerability assessment, in which it is to evaluate how it is vulnerable to a terrorist or intentional attack, and what measures it will take to prevent or mitigate the impacts of such an attack. Substantial federal funding was provided, but these assessments are not publicly available so it is impossible to evaluate whether the money was well spent. We do not know whether the vulnerability assessment for this utility evaluated the potential for an intentional act that could have caused a major release from an upstream contamination source. Second, the water systems also are required to develop emergency response plans for how they will deal with any attack, to avoid disruption and protect their customers. Again, these are confidential, so it is hard to know whether the plan helped expedite or improve the response here. States with primacy under the SDWA have also been required since 1974 to have "plans for provision of safe drinking water under emergency circumstances…"[8] Unfortunately, in this case according to residents, it was difficult to obtain safe drinking water for some time after the incident, though the National Guard and utility did bring in tankers and alternative water after a while.

The Need for Stronger Protections: The Manchin-Boxer-Rockefeller Chemical Safety and Drinking Water Protection Act of 2014

The recently-introduced Chemical Safety and Drinking Water Protection Act, S. 1961, sponsored by Senators Manchin, Boxer, and Rockefeller, would take important steps to begin to address some of the clearest problems brought to light after the West Virginia spill. The legislation would require that primacy states develop programs to inspect and ensure safeguards for covered chemical storage facilities that could pose a risk of harming a public water system. It would require the facilities to adopt certain safety measures and show financial responsibility. It also would require them to reimburse state or federal authorities for the cost of responding to a release, and would require certain assurances that the safety of facilities whose ownership is transferred is addressed. Additionally, emergency response plans are required of the covered

chemical storage facilities; these plans will be shared with the water utility, EPA, the state, and the Department of Homeland Security. Provisions for enforcement and implementation by states (or by EPA if a state does not adopt the plan) are established. Importantly, emergency authority is provided to public water systems to act in the case of an imminent and substantial endangerment of their water supply, an authority now available only to EPA.

We support the legislation as a significant step forward. We have a few detailed comments that we would be pleased to share with the committee about issues including clarifying the definition of a covered facility and tightening the scope of information that would be kept confidential, for example. Additionally, we believe that more frequent inspection—we would recommend annual inspections of covered chemical facilities as required by the legislation that recently passed the West Virginia Senate[9]—would offer greater assurance of protection. A lot of corrosion, maintenance, leakage, or other problems can crop up in 3 to 5 years. Thus, we strongly support moving forward with this targeted legislation immediately to address the urgent problem of chemical storage facilities posing risks to downstream drinking water supplies.

The Clean Water Act

Since 1972, the Clean Water Act (CWA) has included a provision (§311(j)(1)(C)) requiring that, "[c]onsistent with the National Contingency Plan,…as soon as practicable after the effective date of this section, and from time to time thereafter, the President shall issue regulations consistent with maritime safety and with marine and navigation laws … (C) establishing procedures, methods, and equipment and other requirements for equipment to prevent discharges of oil and hazardous substances from vessels and from onshore facilities and offshore facilities, and to contain such discharges…."

While EPA established Spill Prevention Control and Countermeasure (SPCC) rules for oil decades ago, comparable requirements for hazardous substances do not appear to have been promulgated. Thus, while as mentioned above, we strongly support moving forward with S. 1961 to address the immediate emergency need for protection of drinking water supplies, we believe there remains a need for a long-term, broader solution—that EPA should adopt comprehensive SPCC rules for hazardous substances under section 311 of the Clean Water Act, which would

also protect environmental resources. We would recommend that EPA be required to issue these by a specified deadline in the same legislation.

In addition, I should mention the need to restore CWA protections to many headwater streams and wetlands, many of which feed drinking water supplies. My colleague Jon Devine discusses this issue in greater detail elsewhere[10], but in summary:

- The spill illustrates that drinking water supplies are vulnerable and deserve strong pollution protections.
- Drinking water systems serving over 117 million Americans rely, at least in part, on small headwater streams and streams that do not flow year-round for their supply.
- Because of a pair of Supreme Court cases and subsequent policies implemented by the Bush administration, many of these streams and the wetlands that sustain them are in legal limbo, such that it is unclear whether the various pollution control programs under the Clean Water Act protect them.
- The Obama administration has initiated a rulemaking – with a proposed rule expected imminently – to clarify that tributary streams and many wetlands are entitled to the Clean Water Act's safeguards, as they long had been before the recent legal mess. This is critically needed, and therefore should proceed promptly.

The Toxic Substances Control Act

While this statement is not intended to address the arguments regarding the need for reform of the Toxic Substances Control Act (TSCA), it is important to note a few issues that have arisen lately in the context of this spill. It is true that the utter failure of TSCA is highlighted by this spill—here, most of the toxicity characteristics of a chemical used in large quantities and stored in a manner that caused a contamination incident affecting over 300,000 Americans' tap water—are virtually unknown. The Material Safety Data Sheets (MSDS) for MCHM and for PPh are rife with "no data available" statements for innumerable toxic effects of these chemicals. TSCA has been a failure—we simply don't know much if anything about the toxicity of these and thousands of other chemicals used in commerce, including many that are in widespread use. And there are virtually no rules applicable to ensure safe use of most of these chemicals.

Thus, clearly there is a need for real reform and an overhaul of TSCA. However, as my colleague Daniel Rosenberg has detailed elsewhere,[11] the legislation that has been suggested by some as a solution to this problem—the Chemical Safety Improvement Act (CSIA, S. 1009)—as introduced would not only fail to fix the problems highlighted by this spill, but would actually make matters worse. For example, Rosenberg points out that the bill would prevent EPA from requiring testing of a chemical like MCHM unless it has been classified as "high priority," which in many cases as here may be difficult without some additional testing. This would be true of thousands of chemicals, due to the lack of available health data. Additionally, if MCHM or PPh ended up being classified as a low priority because EPA found it met the weak standard in the bill, states would have been preempted from taking action on it. Thus, as Rosenberg concludes:

> In short, the problems with TSCA that are illustrated by the chemical spill in West Virginia would not be fixed by the Chemical Safety Improvement Act, as introduced, and in some respects they would be made worse. The bill as currently written would provide the public with the illusion of an effective federal program to regulate chemicals, while tying the EPA in knots and taking away existing state authorities. The chemical spill in West Virginia is an illustration why we need to strengthen the Toxic Substances Control Act (and certain other environmental laws); it is not a justification for enacting a flawed CSIA.

Conclusion

The West Virginia incident highlights the many holes we have in current federal environmental laws. We urge Congress to move forward with enacting legislation like the Manchin-Boxer-Rockefeller Chemical Safety and Drinking Water Protection Act as an immediate measure. We also recommend real reform of TSCA that unlike some pending proposals substantially strengthens current law, and that steps be taken as recommended to strengthen implementation of the Clean Water Act.

NOTES

[1] Dr. Jennifer Sass, "WV Chemical Spill of MCHM - doing the math on drinking water safety." (posted January 19, 2014). http://switchboard.nrdc.org/blogs/jsass/doing_the_math_on_the_west_vir.html
[2] Westerhoff et al, "The Cincinnati GAC Experience, Government Engineering (2009), available online at http://www.govengr.com/ArticlesMar09/Cincinnati.pdf
[3] EPA, "Multiple Barrier Approach to Public Health Protection." Available online at http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_mba_09-06-06.pdf
[4] West Virginia Department of Health and Human Resources, "State of West Virginia Source Water Assessment and Protection Program Source Water Assessment Report WVAWC - Kanawha Valley, Kanawha County, PWSID: WV3302016. Available online at http://www.wvdhhr.org/oehs/eed/swap/get.cfm?id=3302016
[5] Ibid, page 5.
[6] Ibid, page 7.
[7] NRDC, "What's On Tap: Source Water Protection." (2003). Available online at http://www.nrdc.org/water/drinking/uscities/pdf/chap04.pdf
[8] SDWA section 1413(a)(5).
[9] West Virginia Senate Bill 373, passed State Senate January 28, 2014. Available online at http://legiscan.com/WV/bill/SB373/2014
[10] Jon Devine, "What the West Virginia Chemical Spill Teaches Us About Clean Water." (posted January 17, 2014), http://switchboard.nrdc.org/blogs/jdevine/what_the_west_virginia_chemica.html
[11] Daniel Rosenberg, "The Chemical Safety Improvement Act will not solve the problems illustrated by the West Virginia chemical spill." (posted January 15, 2014), http://switchboard.nrdc.org/blogs/drosenberg/the_chemical_safety_improvemen.html

Statement of Brent Fewell, Esq.
On Behalf of United Water

Before the Senate Environment and Public Works

Subcommittee on Water and Wildlife

February 4, 2014 Hearing On

"Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis"

Chairman Cardin, Ranking Member Boozman, and Members of the Subcommittee, thank you for the opportunity to discuss additional steps we can take to ensure the protection of our nation's drinking water supplies.

I am currently employed by the law firm of Troutman Sanders, and until last week served as the Sr. Vice President for Environment Health and Safety at United Water for the last four years. Although I am testifying on behalf of United Water, I offer supporting statements by the National Association of Water Companies, of which United Water is a member, which are appended to my written testimony.

NAWC is an organization representing the regulated private water service industry. Its members are located throughout the nation and range in size from large companies like United Water that own, operate or partner with hundreds of systems in multiple states to individual utilities serving a few hundred customers. Through NAWC's various business models, private water and wastewater professionals serve more than 73 million Americans, nearly a quarter of our country's population.

As a former U.S. EPA water regulator and chief environmental compliance officer of a major water company, with the responsibility for overseeing the provision of safe and clean water to over 5 million people, I can assure you that this is an issue that United Water and every other drinking water provider in this nation cares very much about. Let me emphasize from the outset that this issue is not about public versus private water systems, it's about the security, safety and wellbeing of all Americans.

As James Salzman, Professor of Duke Law and the Nicholas Institute, and author of a new book on drinking water, has recently noted, since before Roman times, water providers have sought to protect against three broad classes of threats: natural contaminants and pathogens, malevolent attacks, and accidents. And as Dr. Salzman's scholarship bears out, never before in human history has the quality of our drinking water been more secure and safe. Notwithstanding the progress made to date, I am here to offer additional thoughts on how we can better prepare for and respond to these ever present threats, but particularly threats from chemical contaminants.

Earlier this month, the water supply for over 300,000 in Charleston, West Virginia, was significantly impacted by an upstream chemical spill. Events like this serve as a stark reminder of the importance of safe, clean, and reliable sources of water to our families, communities, businesses and local economies. The purpose of this hearing is to understand what went wrong in that situation and what we can do as a nation to ensure that our drinking water supplies remain secure, safe, and clean. We appreciate the opportunity to offer our thoughts on this important matter.

First, and foremost, this is a matter of spill prevention and protecting source waters. There are tens of thousands of chemicals currently used in commerce, each of which has the potential to impact a drinking water source for someone or some community, somewhere. The best thing we can do - and where the greatest focus ought to be placed - is keeping harmful chemical contaminants out of the water altogether. It's abundantly clear that we would not be here today had the storage facility at the heart of this spill provided adequate secondary containment, which would have prevented the chemical from reaching the Elk River. In light of this catastrophic release, many have called for more robust inspections and controls at bulk chemical storage and manufacturing facilities, particularly those located close to waters that serve as drinking water sources. United Water supports these calls for additional EPA and state efforts, for example, to enhance inspection, spill containment, leak detection, and training requirements for personnel managing the activities of chemical storage facilities.

The passage of new regulations, in 1988, bolstering the Clean Water Act's Spill Prevention, Control and Countermeasures (SPCC) program, in response to the Ashland oil spill on the Monongahela, which impacted over one million people, resulted in dramatic reductions of major oil spills. The obvious thrust of the SPCC program is to prevent harmful oil spills as opposed to reactive after-the-fact measures to respond to and cleanup such spills. As the old adage goes, "an ounce of prevention is worth a pound of cure." Some states, like New Jersey, under state law, have extended the core principles and requirements of the SPCC program to all hazardous chemicals, helping to improve spill prevention, control and countermeasures across the spectrum of possible chemical contaminants.

Second, water systems need better and more specific data to identify and prepare for upstream risks. Public water systems currently use various tools to identify and prepare for risks, including source water assessments, vulnerability assessments, and emergency response plans. And water systems work closely with state and EPA regulators, and industry associations, like the American Water Works Association,[1] who provide tools and training for water operators on how to identify, prepare for and respond to water emergencies. Most of these tools, however, assess general, broad categories of risks, whether physical, biological or chemical in nature.

[1] See, for example, ANSI/AWWA standard G300, Source Water Protection, and ANSI/AWWA standard J100 – Water Treatment Plant Operation and Management.

Rarely, if ever, are public water systems provided or privy to specific data about the chemicals upstream that, if released, could affect the water system. This needs to change.

Some have also suggested that public water systems should monitor for more chemicals. While water systems routinely monitor for a host of contaminants under the Safe Drinking Water Act, these systems simply cannot monitor for the thousands of chemicals that could potentially impact water supplies. Nor should they be expected to serve as watershed police. Rather, water systems can only reasonably be expected to monitor those chemicals for which they know of or reasonably expect may impact source waters and enter their distribution system.

The federal Emergency Planning and Community Right-to-Know Act (EPCRA) currently requires facilities that store hazardous substances in excess of threshold planning quantities to provide data annually to state and local emergency response personnel. But there is no requirement that such data be provided to nearby water systems. Similarly, EPCRA, the Clean Water Act, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), require any facility that experiences a release in excess of established reportable quantities to immediately notify the National Response Center and state and local emergency response personnel. Yet, again, there is no requirement that downstream water suppliers be notified of these releases or spill. This leads me to my third point.

Prompt notification of a spill that threatens a water supply is critical. Advance warning and timely notification are critical in any kind of emergency response. Receiving timely notification about a spill can help make a bad situation less bad, and help mitigate the most significant risks to the public. But while requiring early warning and timely notification may improve emergency response, it will not entirely eliminate the risks.

Surface water systems, in particular, are often at the mercy of those located upstream from their water intake structures. Without prompt notification of a spill, a water provider may have no way to detect and respond to the presence of a contaminant until after it has already entered the distribution system. At which point, the only effective emergency response is immediate public notification in the form of a “boil water” or “do not drink” notice. But as we saw in the case of the West Virginia spill, very little was known about the human health risks of the chemical that was spilled. For these systems, having two hours, one hour, or even a half-hour to prepare for a slug of chemicals that will reach its water intake, can make a meaningful difference in responding to a chemical release.

The ability for water systems to rapidly respond to and mitigate the impacts of a spill is influenced by many factors, including:

- The proximity of the spill to the intake structure, in the case of surface water, and the protective zone, in the case of groundwater;
- The volume of the spill relative to the volume of source water;
- The toxic profile of the chemical;
- Whether a system is solely reliant upon a single source;
- The availability of alternative water sources, including interconnections; and
- Drinking water storage capacity.

Simply closing a water intake structure, and waiting until a threat has passed by, is not practicable, in all cases, and such decisions must be balanced with other needs and threats to the community, such as fire suppression. These can be difficult decisions to make, often made with imperfect data and information in the midst of an emergency situation.

I would also mention that some communities, such as Philadelphia, and interstate compact commissions, such as the Ohio River Valley Water Sanitation and Delaware River Basin Commissions, have deployed watershed early warning systems that monitor, detect and notify communities of impending threats.[2] While these early warning systems are by no means perfect, they do present another option and layer of defense for protecting our public water supplies from accidental spills.

Lastly, we offer a cautionary note.

While water systems welcome the additional support in preparing for and responding to chemical threats, expectations of what can be accomplished with more data must be tempered. It will do no good to simply dump reams of paper and data on public water systems and expect that that information alone will solve this problem. Many systems are already resource constrained and struggle to meet the demands of everyday operations. Moreover, rigorously assessing the risks of chemical contaminants from multiple sources can be a tedious and complex process, requiring significant resources and expertise, which many systems simply do not possess.

The most effective solutions will necessarily involve greater public education, collaboration and communication with EPA, states, and all stakeholders within the watershed about the importance of source water protection. This brings me full circle to my opening remarks about the singular importance of prevention.

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[2] See Delaware Valley Early Warning System: http://www.state.nj.us/drbc/quality/alert/index.html; See also this description of the ORSANCO early warning system: http://www.epa.gov/OEM/docs/oil/fss/fss04/schulte_04.pdf.

In closing, as the Members of this Subcommittee contemplate solutions to increase the safety of our water supplies, water systems encourage several areas of attention:

1. Preventing spills and protecting source water;
2. Providing water systems specific data regarding chemicals and chemical storage that pose the greatest and most immediate risks to water supplies; and
3. Ensuring prompt notification of any spill that threatens water supplies and public health.

Once, again, thank you for this opportunity.

NAWC Supporting Principles

Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Chemical Spill

The National Association of Water Companies (NAWC) and its member companies are committed to advancing effective security and safety measures. Our highest priority is to provide safe, clean drinking water to the public. Private water utilities and contract operators in the U.S. have a demonstrated record of compliance with regulatory requirements and of prudent preparation and planning for vulnerabilities and water emergencies. Water utilities, whether private or municipal, deal with an ever-changing risk landscape. By constantly evaluating threats and vulnerabilities and also identifying and characterizing biological and chemical agents that can enter their distribution systems, they must ensure they respond and recover in a safe and effective manner from acts of physical or biological threats, natural disasters, cyber incidents or any other event—foreseen or unforeseen.

NAWC and its member companies make the following recommendations:

1. **Ensure more effective and streamlined security communication among U.S. EPA, states and water utilities regarding releases of hazardous substances.**
    a. Currently, several statutes, such as the CWA, EPCRA, and CERCLA collectively require both annual inventory reporting and emergency spill reporting to federal and state authorities, without any requirement that utilities be similarly notified.

    b. To effectively assess vulnerabilities and respond to threats, water utilities must also be provided this critical information, including receiving prompt notification in the event of a release or spill.

2. **Ensure higher level of disclosure of potential upstream risk to utilities, as well as warning protocols.**
    a. Potential sources of contamination must be disclosed to utilities, just as they are required to be disclosed to local emergency responders. Chemical facilities should disclose which chemicals are stored upstream. There are thousands of potential contaminants, but limited resources force water utilities to focus their resources on monitoring for those that pose a known risk to public health, or are reasonably expected to be present in source water.

    b. Simply knowing that a potential contaminant is stored upstream is insufficient. The technology does not exist that would set off an alarm when a specific contaminant approaches a utility's intakes. Protocols are needed for warning

water utilities in a timely manner when a spill upstream occurs, what the contaminant is and what remediation is recommended.

3. **Ensure government agencies at all levels more effectively protect watersheds that provide sources of drinking water.**
    a. Water utilities are proactive and collaborate with federal, state, and local governments to maintain effective regulatory oversight of clean, safe drinking water.

    b. To ensure that water systems can be in the best possible position to safeguard and minimize impacts on water supplies, water utilities support more efficient information sharing and have specific ideas about how to improve information sharing.

    c. New regulatory regimes should be measured and not create new legal burdens on drinking water providers, and should not put them in the role of regulator or enforcer.

TESTIMONY OF

MICHAEL W. MCNULTY

GENERAL MANAGER, PUTNAM PUBLIC SERVICE DISTRICT

SCOTT DEPOT, WEST VIRGINIA

ON BEHALF OF

PUTNAM PUBLIC SERVICE DISTRICT,

THE WEST VIRGINIA RURAL WATER ASSOCIATION, AND

THE NATIONAL RURAL WATER ASSOCIATION

BEFORE THE

THE U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

SUBCOMMITTEE ON WATER AND WILDLIFE

FEBRUARY 4, 2014

"Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis"

Introduction

Good morning, Mr. Chairman and Members of the Subcommittee. It is an honor to be here. My name is Mike McNulty, and I am the general manager of the Putnam Public Service District (PSD) which is a drinking water supplier just outside of Charleston, West Virginia. I live in Charleston, and my family and the residents of greater Charleston have been dealing with the contamination of our drinking water for the past 3 weeks and 5 days. I am primarily here to talk about source water protection and preventing drinking water contamination from the perspective of our drinking water supply and on behalf of the West Virginia Rural Water Association and the National Rural Water Association which has over 30,000 drinking water supply member systems. I want to thank our state's junior Senator, Joe Manchin, for his assistance during this crisis and for the leadership he has shown in crafting common-sense policy solutions to ensure this type of event never occurs again. Thank you very much Senator Manchin. I would also like to thank Governor Earl Ray Tomblin for working directly with the affected communities in our area.

Putnam PSD's water supply has an extensive source water protection plan and it is highly unlikely that a similar event could impact our raw water reservoir. I will attempt to explain why our plan is effective and what federal, state, and local policies promote dynamic source water protection plans in our country's 51,651 community drinking water supplies. One primary mission of the National Rural Water Association is to assist community drinking water supplies in adopting source water protection plans. We have assisted over 1,000 communities to adopt plans.

Key Points

Six essential policy principles needed to promote effective protection plans include:

1. Recognition that the best plan is the one that was developed by the local officials who know their particular vulnerabilities;
2. recognition that local responsibility for protecting local resources is more effective than additional mandates;
3. acknowledging existing agreements resolving land-use or zoning conflicts within local government jurisdictions;
4. providing federal resources, expertise, and education - including publicly identifying inadequate plans to the public and local governments;
5. public disclosure of all potential sources of contamination to allow the public and governments to prepare for or regulate them;
6. and constant vigilance of the local communities and governments that depend on the water source to identify new threats and improve protection.

Putnam SWP

Consider my water supply. We can treat up to 4 million gallons of water each day, gathered from a series of streams to supply 23,000 people with their drinking water. The streams upon which we depend for water are, like all surface water sources, vulnerable to contamination similar to what occurred in Charleston. We have completed an extensive contamination prevention plan, emergency contingency plan, and contamination detection plan to protect our population. Combined, these documents contain about 60 pages of maps, data, contingencies, plans, intergovernmental agreements, and contact information. I did bring one hard copy of the plan with me today. In order for this document to work, it can't just sit on the self after completion – the local officials who implement it *must* believe it is necessary and influences their daily conduct and attitude. Our delineated watershed map and the watershed map overlaid with the potential sources of contamination are on display here, and on display at our water plant and is accessible on most of our computers. An assessment of the watershed identifies the potential contamination threats from trucks stops that service vehicles carrying a number of chemicals, an interstate railroad with numerous potential threats moving by each day, and a number of commercial enterprises like gas stations and auto repair shops. Of course, it is not feasible to think we could remove all of these threats from the watershed, so we have implemented a number of policies to minimize the effect from a potential spill, quickly detect a spill, and establish emergency contingencies, including interconnections with neighboring water supplies. For some of the potential threat sites, storm water run-off mediation practices have been installed. Perhaps the most important element of our plan is constant monitoring of our source water. We have a small reservoir that collects water from the watershed before the water is then pumped to a large reservoir approximately one mile away. The water then returns to the water plant for treatment. This gives us a unique ability to test the water before it enters our larger reservoir. This is what we refer to as "pre-source water." We are continually testing both of these reservoirs for pH, turbidity, the amount of biological

indicators in the water, odor (which can be more sensitive than some lab detections), and temperature, which will detect contaminants similar to those that were in Charleston's water. All of the pre-source water testing is voluntary, adopted by our utility's staff to implement our program

Because we have two reservoirs, we only pump to the second reservoir when the first one has been tested safe. This procedure enables us to secure and sequester the second reservoir if contamination is ever detected in the streams and our first impoundment. Even if we did find contamination, the second reservoir is isolated with approximately six months of treatable water, which would give us that same amount of time to remediate the source of contamination.

The federal government requires us to conduct hundreds of drinking water tests each year, but none of the pre-source water tests I mentioned are mandated by federal agencies. I point this out to illustrate how difficult it is to have a federal regulatory solution to this issue. Every one of the 51,651 U.S. drinking water supplies has a unique set of vulnerabilities and challenges, and if you apply a uniform regulatory standard to mandate protection in all of them, you will end up not addressing the greatest risks in many communities, and forcing many other communities to implement unnecessary regulations that fail to address their threats

We maintain an excellent relationship with first responders, state governmental authorities, and local organizations. The more our public knows about what is potentially threatening, the better. Public disclosure of all potential sources of contamination and public education campaigns can be a very effective method to engage individuals. Communities can take action and adopt strict plans with the understanding that they have the civic power to influence policy and know who is accountable if things go wrong.

The West Virginia Rural Water Association and the National Rural Water Association have been advocating for local communities to adopt protection measures for decades. They directly assist communities like mine with technical resources to complete and implement a protection plan. I mentioned the 1,000 communities that have completed the rural water process and are actively protecting their source water. Consider how many contamination events may have been prevented in these communities as a result of proactive source water protection planning.

Closing

I will close with a suggestion for a federal response in the aftermath of the Charleston crises that allows for some immediate protection and does not require any grand spending program or any expansion of federal unfunded mandates. This suggestion relies on the advancement of information technologies to educate and empower the public to protect their own resources

In a novel governmental experiment a few years ago, Congress provided a small package of funding to the state agencies that protect ground water to design and publish on the internet a public disclosure database of all chemicals used in hydraulic

fracturing events. This experiment proved to be widely successful. As it was created by the states, it was more accountable to state priorities and supported by local governments. For a small federal investment, this data-system could begin to publicly disclose all watersheds, all potential threats within those watersheds, the list of all communities that have adopted protection plans, copies of each protection plan, a grading system for communities taking action, etc. Communities could populate the data-system with their localized information. All of this would provide direct access to environmental data, governmental response information, and governmental accountability to the public. In addition, it would create a climate of peer pressure or polite competition for communities to highlight their initiatives. We can all agree that every city and state thinks it is doing the best job, and this system would allow the public to make sure their claims are accurate. Large communities and states would likely have the resources to complete plans and showcase their successes. Additional technical assistance could be provided to assist smaller communities that lack technical resources; 94% of community drinking water systems serve a population of fewer than 10,000 people.

Thank you Mr. Chairman, and on behalf of all small and rural communities, we are grateful for your attention and assistance.

Image 1

State of West Virginia Source Water Assessment and Protection Program

Source Water Assessment Report

South Putnam PSD
Putnam County
PWSID: WV3304011

Prepared by:

West Virginia Department of Health and Human Resources
Bureau for Public Health
Office of Environmental Health Services
Source Water Protection Unit

Image 2

SOURCE WATER PROTECTION PLAN

Putnam Public Service District
PWSID No. WV3304011

Prepared by:

Potesta & Associates, Inc.
7012 MacCorkle Avenue SE
Charleston, West Virginia 25304
Phone: (304) 342-1400 Fax: (304) 343-9031
Email: potesta@potesta.com

Funding by:

West Virginia Department of Health & Human Resources
Bureau for Public Health
Office of Environmental Health Services

Project No. 0101-08-0445-525

February 16, 2011

TERENCE C. HORAN REGISTERED 12585 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

POTESTA

Image 3

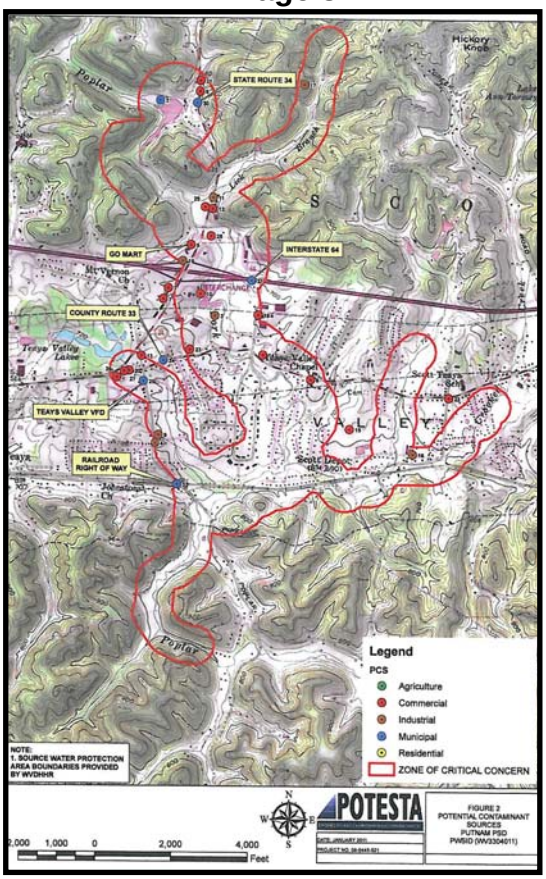
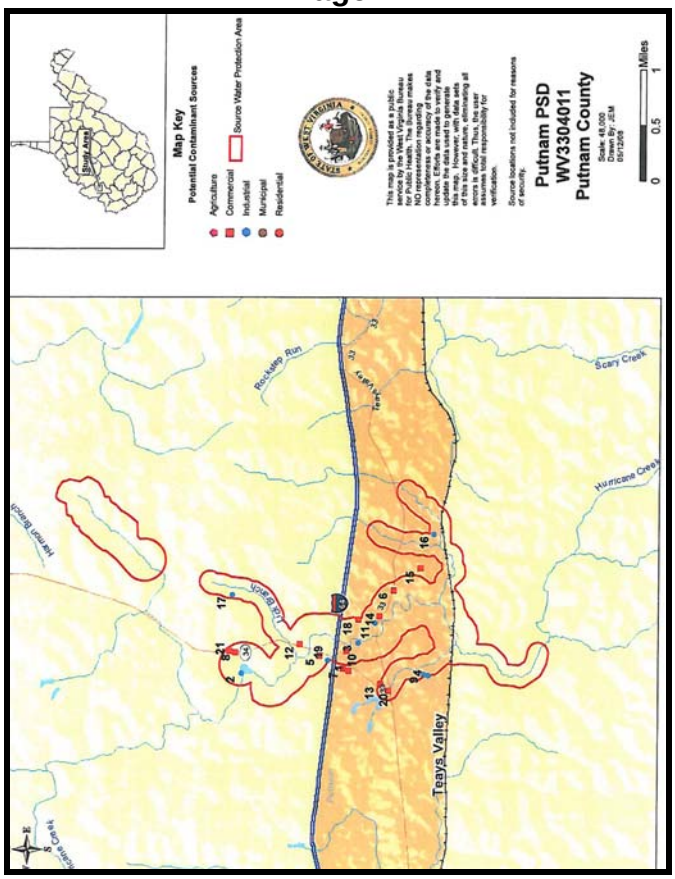
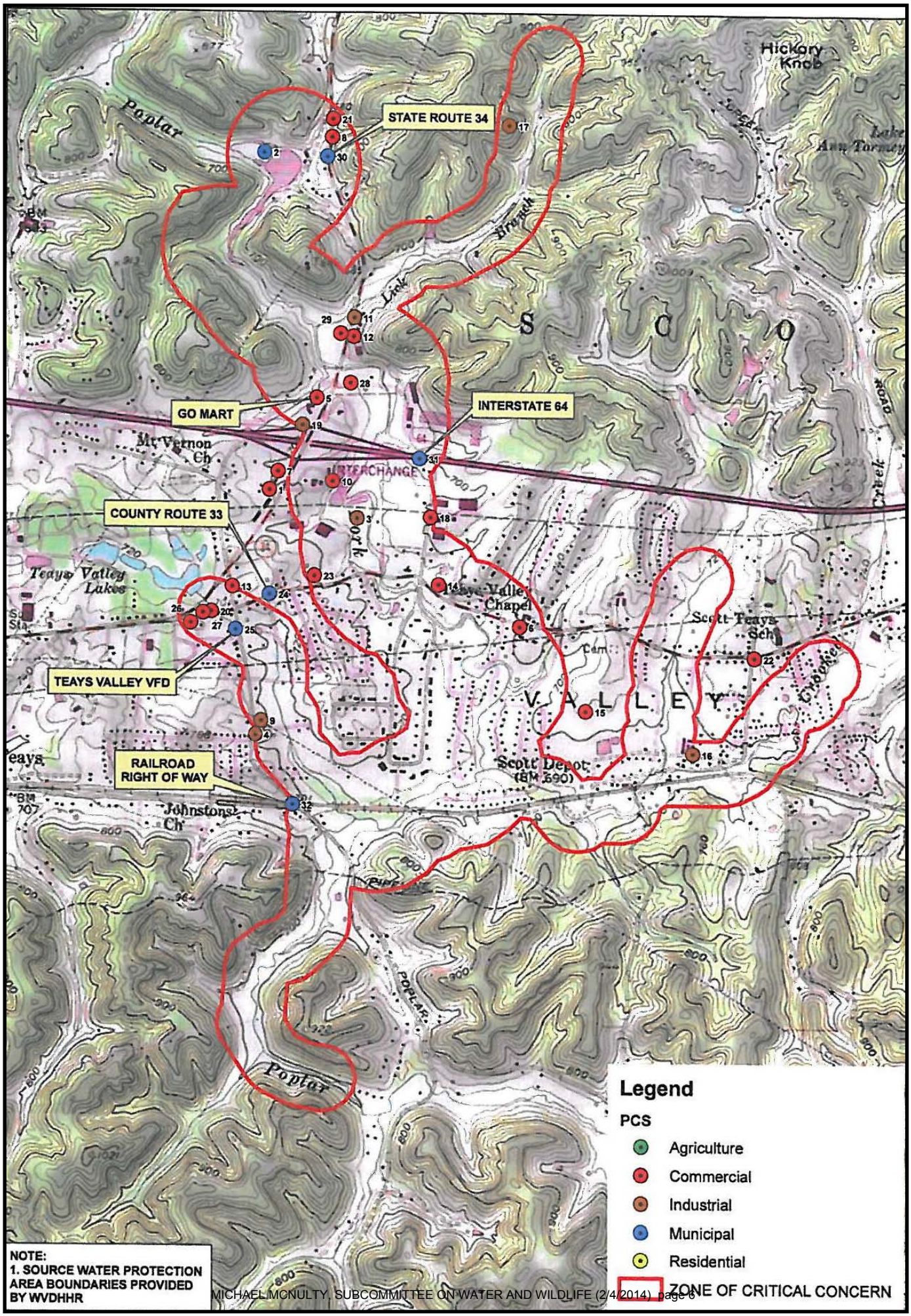


Image 4




STATE ROUTE 34
GO MART
INTERSTATE 64
COUNTY ROUTE 33
TEAYS VALLEY VFD
RAILROAD RIGHT OF WAY
Hickory Knob
Poplar
Mt Vernon Ch
INTERCHANGE
Teays Valley Lakes
Teays Valley Chapel
Scott Teays Sch
Scott Depot (BM 690)
Johnstons Ch
Lake Ann Tornney
S C O T T V A L L E Y
Legend
PCS
Agriculture
Commercial
Industrial
Municipal
Residential
ZONE OF CRITICAL CONCERN
NOTE:
1. SOURCE WATER PROTECTION AREA BOUNDARIES PROVIDED BY WVDHHR

Conservation Programs

Source Water Protection Program

What is the Source Water Protection Program (SWPP)?

The Source Water Protection Program (SWPP) is a joint project with the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) and the National Rural Water Association (NRWA), a non-profit water and wastewater utility membership organization. The SWPP is designed to help prevent pollution of surface and ground water used as the primary source of drinking water by rural residents.

How does SWPP work?

Through NRWA, full-time rural source water technicians with practical experience are hired. The technicians work with specialists from the USDA Natural Resources Conservation Service (NRCS) and state and county FSA staff, to identify areas where pollution prevention is most needed. Once areas for pollution prevention are identified, technicians work with state rural water associations to create local teams made up of citizens and individuals from federal, state, local, and private organizations. These teams collaborate to create a Rural Source Water Protection plan to promote clean source water. The plan identifies voluntary actions that farmers and ranchers can install to prevent source water pollution.

Why is SWPP important?

Clean drinking water is critical. The SWPP works at a grassroots level to educate and inform rural residents about steps they can take to prevent water pollution and improve water quality. Most importantly, it is the local community that helps create the water protection plan and is invested in its success.

For more information on enrollment, eligibility, and land requirements, please scroll down to the **Participant Information** section on the page.

Testimony of Richard O. Faulk

Before the
Committee on Environment and Public Works
United States Senate

February 4, 2014

Thank you for inviting me to speak to you today. At the outset, let me note that I am not appearing here on behalf of any client or organization. I have responded to the committee's invitation as a concerned citizen, and I will provide information based upon my experience and observation.

I am a partner in the Washington DC law firm of Hollingsworth LLP, where I maintain a trial and appellate practice that includes environmental litigation matters. I also serve as the Senior Director of the Initiative for Energy and the Environment for the Law & Economics Center at George Mason University School of Law, where I develop and participate in forums designed to promote constructive dialogue regarding our nation's energy and environmental concerns. Prior to coming to Washington, I maintained a trial and appellate litigation practice in toxic tort and environmental litigation in Texas for approximately 35 years, most notably as the Chair of the Litigation and Environmental practices of Gardere Wynne Sewell LLP, a large Texas law firm with offices in Houston, Dallas, Austin and Mexico City.

Over the years of my practice, I have become familiar with some of the interaction and inter-relationships between America's oil and chemical manufacturing facilities and the regulatory authorities that address safety and environmental concerns regarding their operations. I do not claim to have expertise in all such areas, but I do generally understand and appreciate the attitudes, concerns, policies and programs that America's responsible chemical and

petrochemical companies apply to reduce the risk of accidents and injuries. Many of those practices are mandated by federal and state laws and regulations, but many are also the result of voluntary programs developed internally by particular companies or industry organizations.

From my experience with the mainstream of that industry, I believe that the safety of its employees and the people who live and work around its operations is the industry's highest priority. I have observed the industry work consistently over the years to enhance and improve their safety standards and practices. Even when accidents happen in facilities owned by other companies in other industries, the American chemical and petrochemical industries use those incidents as learning opportunities to improve the safety of their own operations. Unfortunately, the West Virginia chemical spill is a disappointing, and tragic exception to the practices I have observed in the mainstream of America's chemical and petrochemical industry. Based upon my experience, however, I have reason to expect that American chemical companies are already intensively engaged in inquiries, examinations, studies and discussions regarding the West Virginia tragedy -- with a view to understanding how and whether a similar incident could occur or be prevented in their own unique operations.

I also have reason to believe that federal, state and local regulatory authorities across the United States are actively engaged in investigations and are reviewing existing standards and procedures to determine their ability to detect and prevent problems from causing similar incidents. Their intensity, concern and enthusiasm likely match this committee's zeal because they are on the "front lines" for preventing similar tragedies. Certainly, the West Virginia incident, in itself, strongly motivates companies and state and local regulators to pursue such reviews – and this committee's investigation also provides a powerful motivation for those studies.

With all of this focus, motivation and energy, is there a need for immediate federal legislation? I think not. The aftermath of any complex accident generates a certain "fog" where the sheer volume of information, mixed with the shock, alarm, fear and confusion of the moment can obscure clear deliberations. In dealing with incidents like the West Virginia spill, it is important for state and local authorities responsible for the operations and knowledgeable about the parties' practices to undertake the following actions:

- Investigate and ascertain the facts that contributed to the incident;
- Examine any broader questions they raise about oversight, implementation,
- Determine appropriate remedial actions and coordinate enforcement and information sharing among federal, state, and local officials;
- Critically examine whether better enforcement of existing regulations could have helped prevent this incident; and
- Determine if new regulations are needed and if so, consult and involve all stakeholders to ensure that new policies are carefully tailored to avoid overreaching, duplication of existing industry practices, and to minimize unintended consequences.

All of these procedures are essential parts of an effective and useful investigation. In the process of these investigations, state and local authorities will necessarily address other problems such the existence and scope of existing local laws, the record of spills or releases reported in their jurisdictions, the efficacy of their laws in preventing accidents and redressing offenses, and the relative frequency of enforcement proceedings. After completing this process, the state and local authorities should have sufficient information to redress the situation and determine what, if any, new policies, procedures, laws and regulations should be considered to prevent future incidents. If state authorities prove themselves adequate to this task, federal intervention may be unnecessary.

For example, the West Virginia Senate has already passed legislation addressing the issues raised by the Spill. The bill is now before the West Virginia House of Representatives. Given the intense interest in West Virginia, it is likely that this law, when passed, will broadly address the circumstances that led to this tragedy. Other states may then review the law, consider it and adapt it to their own concerns and needs. As our nation's "laboratories of democracy," each state may develop its own solutions to its own unique operations and problems – and such solutions may be complimented by voluntary and cooperative programs developed by industry.

A "top down" system of solutions mandated hastily by federal authorities may displace a protective system of state and local laws, regulations or voluntary industry practices in some jurisdictions. Without an appreciation of those practices, the scope and severity of the risk throughout the nation may be vastly overstated. Stated another way, the presence of a regulatory "gap" does not mean that a hazard necessarily exists – such hazards may be already prevented by state or local laws or regulations, voluntary and customary industry practices, or other restraints. Without an appreciation of those variations, a "one size fits all" federal approach might even *reduce* safety by preempting broader, more effective, or uniquely tailored programs that are already working.

The safety precautions needed to prevent accidents such as the West Virginia incident are probably known to engineers, regulators, and safety professionals. The challenge of spill prevention, detection and containment is a ubiquitous and recurring concern. West Virginia and many other states, as well as the federal EPA, have issued guidance documents which provide information and directions regarding the necessity for containing dangerous materials, the methods for doing so in above-ground storage tanks, and the means for preventing damage by

containing spills and leaks. These resources describe and illustrate such important matters as sound engineering in tank construction, proper tank maintenance, the need for regular inspections, spill prevention techniques, and containment measures. These publications are available to the public and provide common-sense information and advice that could have prevented the tragedy in West Virginia.

Although no EPA program specifically regulates non-petroleum above-ground storage tanks, EPA's Chemical Emergency Preparedness and Prevention Office (CEPPO) issued a *Rupture Hazard from Liquid Storage Tanks* Chemical Safety Alert in May, 2009, available at http://www.epa.gov/oem/docs/chem/tanks7.pdf (visited February 2, 2014). The alert summarized tank failures due to defective welding, cautioned owners of ASTs in all liquid services to be aware of rupture risks, and provided guidance for proper AST inspection and maintenance. To minimize risk, it recommended the use of API Standards 650, 653, and 579 for tank construction, inspection, and modification. This alert also provided information regarding hazard awareness, identification, reduction and prevention. Among many other recommended precautions, the EOA advised tank owners and operators to "perform regular inspections of tanks" to "be sure to look for all possible risks." *Id.* at 4. In the preface to this important document, EPA also counseled that "[m]ajor chemical accidents cannot be prevented solely through regulatory requirements. Rather, understanding the fundamental root causes, widely disseminating the lessons learned, and integrating these lessons learned into safe operations are also required." *Id.* at 1.

Well before that alert was issued, the federal EPA had provided strong warnings about the importance of regular inspections since at least 2001:

> ***Routinely monitor*** ASTs to ensure they are not leaking. An audit of a newly installed tank system by a professional engineer can identify and correct problems such as loose fittings, poor welding, and poorly fit gaskets. After installation, inspect the tank system periodically to ensure it is in good condition.

> Depending on the permeability of the secondary containment area, more frequent containment area checks may be necessary. Areas to inspect include tank foundations, connections, coatings, tank walls, and the piping system. Integrity testing should be done periodically by a qualified professional and in accordance to applicable standards.

Managing Above Ground Storage Tanks to Prevent Contamination of Drinking Water (USEPA, July 2001), available at http://www.epa.gov/safewater/sourcewater/pubs/ast.pdf (accessed February 1, 2014)(emphasis in original).. Irrespective of whether this is a "law" or a recommendation, the EPA has enforcement jurisdiction under the Clean Air Act over water pollution incidents arising from tank failures. Accordingly, anyone dealing with products which. If not properly contained, could compromise drinking water, should obviously monitor the efficacy of containers and containment barriers to ensure that nearby drinking water supplies are not compromised.

West Virginia itself has "guidance" documents that refer to explicit requirements to protect "groundwater" from leaking above ground storage tanks – but the *existing regulatory requirements* described in those documents would, if obeyed, also prevent leakage into surface waters:

> Secondary containment refers to a structure usually constructed of dikes or impervious walls to contain the tank contents in the event it is drained out. **Section 4.8.a. of 47C858 requires that all ASTs have secondary containment that is appropriate to protect against groundwater contamination . . . The secondary containment must be designed and constructed to contain the full contents of the largest tank within the containment unit until the spilled material can be removed without contamination of groundwater.**

Above Ground Storage Tank Guidance Document (Dept. Env. Prot. 2010), at 3 available at http://www.dep.wv.gov/WWE/Programs/gw/Documents/AST%20Guidance%20Document.pdf (accessed February 1, 2014).

The incident in West Virginia was apparently caused by at least two failures – one which permitted the initial leaks, and another which involved the failure of secondary containment. Viewed in that perspective, *existing West Virginia law expressly provided a requirement which, if honored, would have prevented the incident*. Like many tragedies, the failure cannot necessarily be blamed on the absence of a law, but rather on human error. If a legal requirement under existing West Virginia law did not prevent the tragedy, one wonders whether federal laws will produce a different result. Fortunately, the rarity of events similar to those in West Virginia suggests that, by following common sense precautions and existing laws, American industry appears to be acting responsibly to prevent similar tragedies without the need for federal laws or regulations.

Much more study, including empirical evidence, is needed before this committee concludes that displacing these precautions and voluntary industry programs with federal legislation will achieve more salutary results. More laws – especially more regulation – and especially more *federal* regulations in a nation that is even now struggling to comply with a plethora of existing standards – cannot and should not be the answer to every problem – even every tragedy – that befalls our citizens.

Instead, we must empower the governments closest to the people with information, training, responsibility and tools to address the needs of their citizens. If that requires additional resources, so be it – for those resources are best entrusted and administered by those who are closest to the citizens who need them. Not every problem requires federal legislation – but every problem, especially serious ones, deserves the careful consideration, empowered intervention, and educated assistance of responsive and politically accountable community members. When, as here, the laws – if obeyed – are sufficient, we should avoid federal intervention and allow the

states, which have physical possession of their natural resources, to conserve, defend, and administer them in the best interests of their citizens.

Testimony of R. Peter Weaver

Vice President of Government Affairs

International Liquid Terminals Association

Before the

Senate Committee on Environment and Public Works

Subcommittee on Water and Wildlife

EXAMINATION OF THE SAFETY AND SECURITY OF DRINKING WATER SUPPLIES FOLLOWING THE CENTRAL WEST VIRGINIA DRINKING WATER CRISIS

FEBRUARY 3, 2014

Introduction

The International Liquid Terminals Association (ILTA) is an international trade association that represents eighty commercial operators of aboveground liquid storage terminals. These facilities serve various modes of bulk transportation including marine vessels, pipelines, tank trucks and railcars. Operating in all fifty states, ILTA member companies own approximately eight hundred domestic terminal facilities and handle a wide range of liquid commodities including chemicals, biofuels, crude oil, refined petroleum products, fertilizers, and vegetable oils. Terminal customers who store products at these facilities include chemical manufacturers, oil companies, petroleum refiners, utilities, food producers, airlines and other transportation companies, commodity brokers, government agencies, and military bases. ILTA and its members are committed to the safe and environmentally sound operation of terminal facilities. ILTA appreciates the opportunity to provide testimony during this hearing.

Laws and Regulations Governing ILTA Member Facilities

Like the vast majority of bulk storage tank operators, ILTA members are regulated by an extensive series of laws and regulations. These are fairly comprehensive, and rigorously enforced by municipal, state, regional, and/or federal governmental agencies. Facility inspections don't end with the regulator; they are also conducted by other entities. At terminals, these notably include the facility's customers who themselves have a vested interest in the proper handling and safe storage of their products.

At the federal level, rules for environmental protection, as well as safety and security, have been promulgated in response to numerous laws, including CWA, OPA '90, CAA, CERCLA, RCRA, SDWA, SARA, HMTA, TSCA, OSH Act, MTSA, HSAA Sec. 550, and EPCRA. There are also state laws which carry additional requirements. In addition to meeting minimum compliance obligations, terminal facilities

follow industry standards and best practices for designing and maintaining the integrity of their equipment and operations.

All of the approximately 800 domestic ILTA member facilities are subject to regulations that require their storage tanks to be inspected periodically. Their tanks are all located within secondary containment structures to prevent product migration in the event of a tank failure. Freedom Industries is not a member of ILTA. Early reports suggest that the Freedom facility may not have been subject to the same level of environmental protection regulation that is uniformly applicable to ILTA members. As such, Freedom Industries may be substantially different from the vast majority of storage tank operators in this country.

Specific examples of regulations governing storage tank operators include the following federal programs:

40 *CFR* 112. Spill Prevention, Control and Countermeasure (SPCC) Regulations. Impacting all oil products, and numerous chemicals that exhibit similar properties, the SPCC rule applies to every facility possessing 1,320 gallons of oil in aggregate, or greater. It requires tank and pipeline integrity testing and strictly regulates the size and effectiveness of secondary containment structures. SPCC Plans must be certified by a Professional Engineer. Initially established in 1974, this rule has been revised and expanded multiple times since that date. The latest new provisions went into full effect in 2013.

Adherence to robust industry standards is required by SPCC, such as the American Petroleum Institute (API) Standard 653 for integrity inspections of large field-erected tanks, and Steel Tank Institute Standard SP001 for "trailerable" shop-built tanks. The National Fire Protection Association (NFPA) Code 30 for flammable and combustible liquids is another. State-specific regulations that impact aboveground storage tank facilities must be taken into account in the preparation of an SPCC Plan. In all 50 states, SPCC regulations are in force; some states have additional spill prevention provisions that exceed federal requirements.

40 *CFR* 112, 33 *CFR* 154. Facility Response Plan (FRP) Regulations. The Oil Pollution Act of 1990 contains FRP requirements which specifically include provisions that require covered facilities to list any downstream drinking water intakes that may be impacted in the event of an oil or chemical release, as well as to list potentially vulnerable environmentally sensitive areas.

40 *CFR* 122 - 126. Pursuant to the Clean Water Act, it is most common for hazardous material storage tank operators to have a National Pollutant Discharge and Elimination System (NPDES) Permit governing discharges of storm water or waste water from their facility. The permit specifies stringent discharge limits to meet Safe Water Drinking Act (SWDA) requirements for applicable chemicals or contaminants. Discharge monitoring reports are typically required.

40 *CFR* 260 - 265. EPA regulations promulgated in response to the Resource Conservation and Recovery Act specifically require that adequate secondary containment be provided and applicable equipment inspections be completed for all hazardous waste materials.

40 *CFR* 355, 370. EPA regulations promulgated in response to the Emergency Planning and Community Right-to-Know Act (EPCRA, also Title 3 of the Superfund Amendments and Reauthorization Act) specifically require that a chemical inventory be submitted to the local emergency planning committee or department, state emergency response committee or agency, and to the local fire department.

40 *CFR* 302. EPA regulations governing hazardous substances designate the specific reportable quantities in the event of release.

49 *CFR* 194, 195. DOT regulations governing storage tanks at pipeline facilities specifically require that sensitive environments and drinking water intakes downstream of the installation are identified. These rules also require spill response equipment to be effectively deployed in the event of a release.

29 *CFR* 1910, 1926. OSHA regulations require employees to ensure that workers have an adequate understanding of all chemical safety hazards and suitable personal protective equipment.

Additionally, in the state of West Virginia, aboveground storage tanks are regulated by 47 *CSR* 58. Section 4.8.a of this regulation requires sufficient secondary containment for aboveground storage tanks containing product that has the potential to contaminate groundwater. Adequate containment must protect groundwater for no less than seventy-two (72) hours. It is ILTA's understanding that other West Virginia agencies have also taken requirements from the State Ground Water Program and adapted them to their specific authorities.

Freedom Industry Investigation

On January 9, 2014, several thousand gallons of a chemical product[1] escaped through a one-inch hole in the bottom of a 40,000 gallon stainless steel storage tank owned and operated by Freedom Industries in Charleston, West Virginia. The material escaped any containment and migrated into the Elk River approximately 1 mile upstream of the West Virginia American Water municipal intake. It is ILTA's understanding that various state and federal agencies as well as the Chemical Safety Board are presently investigating the incident. Given the impact of this release to the surrounding community, there is no question that the Freedom Industry site will be subject to extensive inspections, both of the facility and its operations. Any resulting incident reports regarding the circumstances surrounding this event would be expected to cite the primary and secondary contributors to the release, as well as identify applicable regulatory programs. ILTA is interested in the findings from such reports, and in particular how the chemical escaped containment and migrated to the waterway.

Conclusion

Even with an expansive net of regulatory requirements, anomalous circumstances exist where an incident such as this can occur. It is ILTA's contention that the first step in a proper oversight response requires an understanding of those circumstances within which it was allowed. As such, ILTA also contends that federal legislative action in response to Elk River at this moment would be premature. Once final investigation reports are released, the specific reason(s) for the failure of the tank and of its

[1] **4-methylcyclohexanemethanol (MCHM)**

secondary containment will be available for analysis. With this information, measures necessary to prevent future recurrence would be most effectively accomplished through a refinement and simplification of existing regulations.

If Freedom Industries disregarded existing regulations, company operating procedures, and/or industry standards, the most effective response would be stronger enforcement rather than the promulgation of new legislation and subsequent regulation.

ILTA COMMENTS ON SEC. 1472(b)(2) OF THE CHEMICAL SAFETY AND DRINKING WATER PROTECTION ACT OF 2014 (S 1961)

The Senate bill includes provisions for minimum requirements to protect water systems from the release of chemicals from a storage facility. ILTA has the following comments on these provisions:

"(A)(i) acceptable standards of good design, construction, or maintenance;

- ✓ Storage tank design, construction and maintenance standards already exist (e.g., 40 *CFR* 112 and NFPA Code 30). Tanks are subject to both existing construction and inspection standards. API Standards 620 and 650 are routinely adhered to for the construction of both petroleum and chemical tanks throughout the industry pursuant to existing regulations and company operating procedures.

"(ii) leak detection;

- ✓ Storage tank and secondary containment leak detection standards already exist. Leak detection cannot be labeled as a sole prevention means of incident prevention. However, leak detection provisions can be a mitigating factor and already exist within the oil and chemical industry (e.g. 40 *CFR* 112). At some facilities, Process Safety Management provisions (29 *CFR* 1910.119) also govern facility equipment inspection.

"(iii) spill and overfill control;

- ✓ Spill and overfill standards already exist. Secondary containment and overfill protection equipment must be in place at hazardous material storage facilities. All such equipment requires routine, periodic inspections. Sufficient variance and loss provisions in industry standards have long been established in the oil and chemical industry (e.g. API Standard 2350 for tank overfill protection).

"(iv) inventory control;

- ✓ Inventory control standards already exist. Hazardous material storage facilities steward and regularly measure product inventories and routinely conduct an accounting reconciliation for all stored product. Storage tanks may also be affixed with measuring devices, such as side-mounted level gauges, that augment the manual measurement of tank inventory volumes pursuant to 40 *CFR* 112.

"(v) an emergency response and communication plan;

- ✓ Emergency response and communication planning requirements already exist. In addition to basic facility security measures, an OSHA Emergency Action Plan (29 *CFR* 1910.38), governing

emergency response and evacuation associated with personnel safety, is routinely found to be in place at storage facilities along with an OSHA Hazard Communication Plan (29 *CFR* 1910.1200).

''(vi) an employee training and safety plan;

- ✓ Employee training and safety planning requirements already exist. Employee training and safety plans are prominent at aboveground storage tank facilities pursuant to OSHA personal protection equipment requirements (29 *CFR* 1910.32) and other general health and safety plan provisions (29 *CFR* 1926, e.g. equipment access).

''(vii) an inspection of the integrity of each covered chemical storage facility;

- ✓ Chemical storage integrity testing standards and requirements already exist. API 653 is a primary industry standard for storage tank inspection. Facilities possessing oil and oil-like products are all required to conduct such testing pursuant to SPCC (40 *CFR* 112).

"(viii) lifecycle maintenance, including corrosion protection;

- ✓ Chemical storage maintenance provisions already exist. In addition to routine facility maintenance practices, chemical storage may also have a cathodic-protection system (corrosion protection rectifier equipment) for products that may induce a higher rate of corrosion to tank metal, or that may be subject to soil or environmental conditions that can cause excessive corrosion. Consideration is given to API Recommended Practice 575, Inspection of Atmospheric & Low Pressure Storage Tanks, for example.

''(ix) notice to the Administrator, the appropriate State agency, and applicable public water systems of—

''(I) the potential toxicity of the stored chemicals to humans and the environment;

- ✓ The toxicity of stored chemicals to humans and the environment is presently taken into account. Each liquid stored must have a Safety Data Sheet (SDS or MSDS) pursuant to 29 *CFR* 1910.1200.

''(II) safeguards or other precautions that can be taken to detect, mitigate, or otherwise limit the adverse effects of a release of the stored chemicals;

- ✓ Safeguards to detect, mitigate, or limit adverse chemical effects presently exist. In addition to OSHA requirements governing SDS information (29 *CFR* 1910.1200), personnel protection is required pursuant to 29 *CFR* 1926 provisions. Pursuant to state criteria, including Safe Drinking Water Act standards, water discharges are monitored against allowable pollutant limits under the National Pollutant Discharge Elimination System (40 *CFR* 122-126).

''(x) financial responsibility requirements, including proof of insurance, bond, or other similar instrument;

- ✓ Chemical facilities typically have financial responsibility requirements in place including insurance governing both sudden and accidental and slow release/seepage insurance pursuant to state and municipal requirements.

''(B) inspections of covered chemical storage facilities, [within the same watershed as the public water system];

- ✓ Facilities possessing oil and oil-like products are all subject to inspections pursuant to SPCC (40 *CFR* 112).

''(C) a comprehensive inventory of the covered chemical storage facilities in each State.

- ✓ Facilities are required to possess an SDS for each hazardous product that is handled or stored on site pursuant to OSHA hazard communication rules (29 *CFR* 1910.1200). Community Right-to-Know reporting requirements (40 *CFR* 370.32) demand that all such SDS are filed with state and local emergency planners, as well as the local fire department, within 60 days.

Thank you for the opportunity to appear before you today. I would be pleased to respond to any questions.