MISMANAGING CHEMICAL RISKS: EPA'S FAILURE TO PROTECT WORKERS

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

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C O N T E N T S

WITNESSES

SUBMITTED MATERIAL

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[1] GAO Report has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20190313/109117/HHRG-116-IF18-20190313-SD016.pdf.

[2] Written evidence has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20190313/109117/HHRG-116-IF18-20190313-SD021.pdf.

[3] Appendix B—Photo has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20190313/109117/HHRG-116-IF18-20190313-SD022.pdf

[4] Report has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20190313/109117/HHRG-116-IF18-20190313-SD020.pdf.

[5] Addendum Report has been retained in committee files and also is available at https://docs.house.gov/meetings/IF/IF18/20190313/109117/HHRG-116-IF18-20190313-SD007.pdf.

MISMANAGING CHEMICAL RISKS: EPA'S FAILURE TO PROTECT WORKERS

WEDNESDAY, MARCH 13, 2019

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT AND CLIMATE CHANGE,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:30 a.m., in room 2322 Rayburn House Office Building, Hon. Paul Tonko (chairman of the subcommittee) presiding.

Members present: Representatives Tonko, Peters, Barragán, McEachin, Blunt Rochester, Soto, DeGette, Schakowsky, Matsui, McNerney, Ruiz, Dingell, Pallone (ex officio), Shimkus (subcommittee ranking member), Rodgers, McKinley, Johnson, Long, Flores, Mullin, Carter, Duncan, and Walden (ex officio).

Staff present: Jacqueline Cohen, Chief Environment Counsel; Adam Fischer, Policy Analyst; Waverly Gordon, Deputy Chief Counsel; Rick Kessler, Senior Advisor and Staff Director, Energy and Environment; Brendan Larkin, Policy Coordinator; Mel Peffers, Environment Fellow; Teresa Williams, Energy Fellow; Mike Bloomquist, Minority Staff Director; Adam Buckalew, Minority Director of Coalitions and Deputy Chief Counsel, Health; Jerry Couri, Minority Deputy Chief Counsel, Environment and Climate Change; Jordan Davis, Minority Senior Advisor; Peter Kielty, Minority General Counsel; Mary Martin, Minority Chief Counsel, Energy and Environment and Climate Change; Brandon Mooney, Minority Deputy Chief Counsel, Energy; Brannon Rains, Minority Staff Assistant; and Peter Spencer, Minority Senior Professional Staff Member, Environment and Climate Change.

Mr. TONKO. The Subcommittee on Environment and Climate Change will now come to order. I recognize myself for five minutes for the purpose of an opening statement.

OPENING STATEMENT OF HON. PAUL TONKO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

One of the great recent achievements in Federal environmental policy was the passage of the Frank R. Lautenberg Chemical Safety for the 21st Century Act to reform the Toxic Substances Control Act in 2016.

I had concerns with that final product, but I would be the first to admit it had important provisions to help fix EPA's long-broken TSCA program and I commend Mr. Shimkus and Mr. Pallone for their work on that historic law to make real bipartisan progress

that gave EPA the tools necessary to protect Americans from toxic exposure risks.

Unfortunately, EPA has chosen to ignore those tools and has, in my view, failed to implement the law as Congress intended. One of those important provisions I mentioned was a requirement that EPA consider potentially exposed or susceptible subpopulations.

The law explicitly identifies infants, children, pregnant women, workers, and the elderly as high-risk groups. I have many criticisms of this administration's failure to properly implement the law, but its failure to protect these groups is near the top of my list.

Today, we will hear from witnesses representing workers on the front lines of toxic exposure risks, including firefighters, farm workers, teachers, and industrial workers.

We will also hear about specific toxic chemicals that put working Americans at unnecessary risk on the job. Asbestos is killing thousands of Americans each year and, yet, somehow U.S. imports of the substance continue to rise.

EPA has deliberately excluded exposure from legacy asbestos and its disposal from the scope of its risk evaluation, leaving workers at risk of dangerous exposure.

PV29 was chosen as the very first risk evaluation under the Lautenberg Act. Last year, EPA released its draft risk evaluation and found it presented no unreasonable risk.

Consideration of worker exposures were excluded from its evaluation and methylene chloride is a paint stripper which has killed dozens of Americans. Safer alternatives exist, but EPA still refuses to ban this toxic killer.

At least four people have died since a proposed rule was published in January 2017. At that time, EPA proposed restricting its commercial and consumer uses. But as of December 2018, EPA appears to have abandoned the ban for commercial use, which will leave workers at risk.

These are just a few substances that we will hear about today, and they are not isolated cases. If not corrected, I suspect we will see even more examples in the future because the TSCA framework rules, which were issued by the Trump administration, enable systematic exclusion of risks to workers on the job.

These framework rules include the risk prioritization rule used to identify high-priority chemicals, which allows EPA to exclude commercial uses and workplace exposures; and the risk evaluation rule, used to scope and conduct an evaluation to determine whether a chemical presents an unreasonable risk, which leaves out legacy uses and leaves open the possibility of ignoring worker exposure.

This dangerous approach is not limited to the TSCA office. EPA's treatment of the Risk Management Plan rule under the Clean Air Act and the decision to allow the continued use of chlorpyrifos—a pesticide tied to impairment in children's brain development—raise serious concerns about EPA's broader efforts to protect workers.

Make no mistake, we are seeing a clear pattern—the systematic failure of our Environmental Protection Agency to protect workers under TSCA and other EPA programs against the spirit and letter of the Lautenberg Act and the fundamental mission of that agency.

I have met with families that have lost loved ones from exposure to methylene chloride and asbestos. Strong EPA action will not bring them back, but it can save others.

That is the very least we should do for these victims. TSCA reform was not easy, but at its core, I believe those families are why we did it. EPA needed better tools to protect Americans. But today those new tools are being squandered and workers will suffer the consequences the worst.

I hope we can continue to conduct oversight to ensure that EPA is protecting workers as was envisioned and required by the bipartisan TSCA reform effort.

I look forward to hearing from each and every one of our witnesses. Thank you for joining us today. You will add a voice of reason, I hope, to all the work that we do.

[The prepared statement of Mr. Tonko follows:]

PREPARED STATEMENT OF HON. PAUL TONKO

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I had concerns with that final product, but I would be the first to admit it had important provisions to help fix EPA's long-broken TSCA program. And I commend Mr. Shimkus and Mr. Pallone for their work on that historic law to make real bipartisan progress that gave EPA the tools necessary to protect Americans from toxic exposure risks.

Unfortunately, EPA has chosen to ignore those tools, and has, in my view, failed to implement the law as Congress intended.

One of those important provisions I mentioned was a requirement that EPA consider potentially exposed or susceptible subpopulations. The law explicitly identifies infants, children, pregnant women, workers, and the elderly as high-risk groups.

I have many criticisms of this Administration's failure to properly implement the law, but its failure to protect these groups is near the top of my list.

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PV–29 was chosen as the very first risk evaluation under the Lautenberg Act. Last year, EPA released its draft risk evaluation and found it presented no unreasonable risk. Consideration of worker exposures were excluded from its evaluation.

And methylene chloride is a paint stripper which has killed dozens of Americans. Safer alternatives exist, but EPA still refuses to ban this toxic killer. At least four people have died since a proposed rule was published in January 2017. At that time, EPA proposed restricting its commercial and consumer uses, but as of December 2018, EPA appears to have abandoned the ban for commercial use, which will leave workers at risk.

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And the risk evaluation rule, used to scope and conduct an evaluation to determine whether a chemical presents an unreasonable risk, which leaves out legacy uses and leaves open the possibility of ignoring worker exposure.

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continued use of chlorpyrifos, a pesticide tied to impairment in children's brain development, raise serious concerns about EPA's broader efforts to protect workers.

Make no mistake, we are seeing a clear pattern: The systematic failure of our Environmental Protection Agency to protect workers under TSCA and other EPA programs, against the spirit and letter of the Lautenberg Act and the fundamental mission of the Agency.

I have met with families that have lost loved ones from exposure to methylene chloride and asbestos. Strong EPA action will not bring them back, but it can save others. That is the very least we should do for these victims.

TSCA reform was not easy, but at its core, I believe those families are why we did it. EPA needed better tools to protect Americans, but today those new tools are being squandered, and workers will suffer the consequences the worst.

I hope we can continue to conduct oversight to ensure that EPA is protecting workers as was envisioned—and required—by the bipartisan TSCA reform effort. I look forward to hearing from our witnesses today, and I yield back.

Mr. TONKO. And with that, I yield back and will now recognize the Republican Leader of this subcommittee, Representative Shimkus, for an opening statement.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Thank you, Mr. Chairman. I appreciate that you are having this hearing on chemical management and I want to congratulate you on calling this hearing.

You know, the Lautenberg Act passed in 2016, as the chairman had mentioned. Then you've got the rules. Then you've got to start going through the process, and now it is time to do a look and see the good and the bad and the ugly that still pervades through the system and to make corrective action.

As one of the authors and supporters of the TSCA reform bill, we want it to work because we want it to protect—we want the EPA to do due diligence on the science of the chemicals.

I think what I have learned by the process of this hearing and doing work is that there is a couple agencies that have responsibilities here and there seems to be, especially with the Lautenberg Chemical Safety Act—TSCA Reform Act—there seems to be, Mr. Chairman, some overlap that maybe we need to keep looking at and start talking about because, we have an agency that is supposed to be in the workplace to protect and observe how chemicals are used in that processes to protect workers, and that is one we know as OSHA—the Occupational Safety Health Administration—and it is hundreds of professionals.

And sometimes they are trained to do the same thing that we have asked EPA to look at, especially under the TSCA reform. In fact, they might—OSHA may have even more people in the agency on a particular process to protect workers.

So, we are not on the Workforce or Labor Committee. So my expertise in that area is not as much as in what we tried to do under the Frank Lautenberg Chemical Safety Act, which was focused on the EPA.

We need to find out why this takes so long, make sure that they focus on defining whether a chemical is safe or not safe, and if there are, because of the use in our society, how do the people who—if it is deemed that it is still needed for production how do you—what do you tell OSHA and the people who are going to use

it what they need to do to make sure they protect the workers in and around these chemicals?

Ninety-eight percent of all things touched in this room were—are touched by the chemical manufacturing sector whether it is paints or acrylics or metal and furnishings and the like.

So understanding that chemical use is pervasive, I think what brought us together—and it is good to see Chairman Pallone enter—I think what brought us together was to say let us do this right because the system was delayed.

We had old chemicals that weren't being evaluated. I am particularly concerned about making sure we have new chemicals vetted quickly because they may be more effective and efficient and safe.

So if the EPA is not dealing with the new chemicals and we may have some chemicals needed in the manufacturing sector that might pose some risk, wouldn't it be better to get the new chemicals onto the market?

So, as my colleagues on the other side know, I have been wanting to have a hearing like this since passage. You have to allow the EPA to at least set up and develop their rules. But this is the right time to do it and I am glad you called the hearing and I look forward—hopefully, we can have more and some more in-depth and maybe also vet out this merging of the agency's responsibilities and who is supposed to do what because if you don't have clear definitive—you all know especially if you don't have clear definitive rules then you don't know who is supposed to do what and who to hold accountable.

So with that, again, I appreciate the hearing and I yield back my time.

[The prepared statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

Thank you, Mr. Chairman. I appreciate that we are having a hearing on chemical management and I want to congratulate you for calling this hearing.

Not too long ago, when I had your chair, I stated my sincere interested in doing oversight of this area—particularly as it related to EPA's implementation of reforms this committee made to Title I of the Toxic Substances Control Act.

Regrettably, within the confines of such factors as witness availability and the committee schedule, there simply was not time. I know that you now control the agenda, but I hope that you will convene a future hearing to give this committee time to more thoroughly inspect what is happening to new chemicals under TSCA.

The GAO's recent report indicating a tripling of new chemicals submissions being withdrawn, the persistent backlog of applications and untimely completion of reviews, and the significant drop in the rate of commenced cases are troubling pieces of information. Together, this suggests to me that the current new chemicals process is adversely effecting innovation in new chemicals—resulting in a de facto favoring of existing and more problematic chemicals.

Moving to the subject of today's hearing, I think it is important that workers are protected in their workplace. Whether an accident is related to a structural hazard or a chemical hazard, workers—union and non-union—should be protected through Federal or State law, industrial hygiene standards, or collective bargaining agreements.

That said, and I say this with great respect for you, Mr. Chairman, I am a bit perplexed by this hearing.

From a Federal perspective, the main thrust of worker safety has been given to the Occupational Safety and Health Administration (OSHA) and its hundreds of professionals. Yet today's hearing is claiming EPA is letting workers down?

From my perspective, this hearing feels more like an airing of grievances along the lines of a civil court proceeding rather than a fact-finding mission. Neither OSHA nor EPA is here to testify on the work they have done or to confront the ac-

cusations of our panelists. Truth be told, I don't know if they were even asked to appear.

From my perspective EPA and OSHA have different missions but should work together and share information and expertise rather than seek out ways to do each other's jobs. If any member of this subcommittee sees that relationship differently—as much as it pains me to suggest something is not jurisdictional to our committee—they should contact the House Education and Labor Committee about beginning to evaluate what statutory changes need to occur and are warranted to the OSH Act.

I want to thank our witnesses for being with us today. I do appreciate your time and hope you understand that a difference in means is not a dispute on the ends.

I thank the Chairman for this time and want to let him know how much I have appreciated his friendship in the past. I am glad we are looking at chemicals management and I look forward to hopefully more oversight of specific aspects of TSCA.

If no one else wants my remaining time, I will yield back.

Mr. TONKO. Thank you very much, and the gentleman yields back.

I now recognizes Mr. Pallone, chair of the full committee, for five minutes for his opening statement.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Chairman Tonko.

Today, we are here to continue this committee's critical oversight work of the Trump administration by reviewing the Environmental Protection Agency's mismanagement of chemical risks and its harmful impacts on America's workers.

Two years ago, this committee came together after years of work to pass the Frank R. Lautenberg Chemical Safety for the 21st Century Act to finally reform the Toxic Substances Control Act, commonly known as TSCA.

One of the most important protections included in that bill, from my perspective, was the new requirement that EPA ensure protection for vulnerable populations, including infants, pregnant women, environmental justice communities, and workers.

Explicit worker protections are so essential because workers bear the brunt of chemical exposures and harm. In fact, according to the National Institutes of Environmental Health Sciences, occupational diseases kill more than 50,000 workers in our nation every year.

About a third of those cases are cancer. Globally, the U.N. reported last year that toxic exposures at work kill one worker every 15 seconds. To put that in perspective, by the time my five minutes are up, toxic exposures will have killed 20 workers worldwide.

Clearly, our track record of protecting workers is appalling. Many of us who worked to update TSCA hoped it would help. But, unfortunately, I fear EPA's implementation of the act is moving us in the wrong direction.

Methylene chloride is a prime example. EPA began a risk assessment on methylene chloride before we completed action on TSCA reform and that assessment looked at workplace exposures, including numerous worker deaths.

Based on that assessment, the Obama EPA proposed a complete ban on methylene chloride and now the Trump EPA is trying to keep commercial uses in place, leaving workers at unacceptable risk.

Asbestos is another serious example. Studies documenting worker deaths from asbestos exposure go back to the 1960s, and it was among EPA's first targets when TSCA was originally enacted back in 1976.

When we passed the Lautenberg Act, we hoped it would fix the flaws in TSCA and allow EPA to finally ban asbestos, 40 years after it began the regulatory process.

But EPA is now working on an asbestos risk evaluation that ignores all exposures to legacy asbestos, which we all know is a major driver of risk. And last year, the agency adopted a Significant New Use Rule that will allow new uses of asbestos in consumer products.

EPA political leadership took this action over the objections of the nonpartisan career staff who were worried about the very real public health impacts.

Because of these actions, I have lost confidence in EPA's ability to implement this law and ban asbestos and that is why last week I joined Representatives Bonamici, Slotkin, and others in sponsoring the Alan Reinstein Ban Asbestos Now Act.

It is long past time that we banned this dangerous substance which continues to kill American workers. The Trump EPA's attack on workers goes beyond its refusal to properly implement TSCA.

The Clean Air Act's Risk Management Planning program should play an essential role in protecting workers and communities from toxic chemical exposures, but the Trump EPA has repeatedly tried to weaken it.

They have also tried to weaken farm worker protection efforts. But this Congress recently passed legislation that would prevent EPA from rolling back farm worker protections for the time being.

And, finally, I must mention the unfortunate fact that workers are among those most endangered and impacted by climate change. Extreme weather and natural disasters pose serious threats to emergency responders, chemical plant workers, refinery workers, and more.

The Trump EPA has repeatedly undermined national efforts to address climate change, leaving our workers and communities vulnerable to ever-worsening extreme weather.

So this hearing, Mr. Chairman, I know it is just the beginning of your efforts to hold EPA accountable to the people it is supposed to protect.

I hope we can work together in a bipartisan fashion to ensure EPA is meeting its statutory obligations and mission to protect human health and the environment.

[The prepared statement of Mr. Pallone follows:]

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Mr. PALLONE. I know, Mr. Tonko, that you have—oh, I guess I am supposed to—I didn't know I was supposed to give my time. Whatever I have left I will give to Mrs. Dingell.

Mrs. DINGELL. Thank you, Mr. Chair and Mr. Chair.

We are holding an important hearing today to examine how EPA is mismanaging its responsibility to protect the health and safety of the American worker. The American worker needs to be protected from all harmful and toxic chemicals as every American should be.

The American worker is the backbone of this country. I want to briefly recognize and thank Professor Finkel from the University of Michigan—go Blue—that began last weekend—and Jeaneen McGinnis, a retired auto—we are going to do better this weekend—and Jeaneen McGinnis, a retired auto worker, for testifying before

the subcommittee today to share their respective expertise and their personal story. The committee can learn a lot and I look forward to hearing from them today.

And I yield back.

Mr. TONKO. The gentlelady yields back.

I believe Mr. Walden, Republican Leader, is busy with the Health Subcommittee downstairs. So we will proceed by reminding members that pursuant to committee rules all Members' written opening statements shall be made part of the record.

Now we introduce our witnesses for today's hearing and we thank you again for joining.

Ms. Jeaneen McGinnis, benefits representative of the United Auto Workers. Seated next to Ms. McGinnis is Mr. Patrick Morrison, assistant to the general president for health, safety, and medicine at the International Association of Firefighters.

Next, we have Ms. Wendy Hutchinson on behalf of the Baltimore Teachers Union. Then Mr. Giev Kashkooli—did I pronounce that correctly?

Mr. KASHKOOLI. That is right.

Mr. TONKO. OK. On behalf of—serving as vice president of United Farm Workers. Then we have Mr. Tom Grumbles, former president of the American Industrial Hygiene Association and past president of Product Stewardship Society on behalf of AIHA.

Next, we have Mr. Duvall is it? Oh, Duvall. Principal of Beveridge and Diamond PC, and then we have Dr. Adam M. Finkel, clinical professor of environmental health sciences of the University of Michigan School of Public Health.

We, on behalf of the—I, on behalf of the subcommittee, thank all of our witnesses for joining us today. We look forward to your testimony.

At this time, the Chair will now recognize each witness for five minutes to provide his or her opening statement. Before we begin, I would like to explain the lighting system.

In front of our witnesses is a series of lights. The light will initially be green at the start of your opening statement. It will turn yellow when you have 1-minute left. Please begin to wrap up your testimony at that point. The light will turn red when your time expires.

So we will now move to Ms. McGinnis and recognize Ms. McGinnis for five minutes and, again, welcome.

STATEMENTS OF MS. JEANEEN MCGINNIS, BENEFITS REPRESENTATIVE, UNITED AUTO WORKERS; PATRICK J. MORRISON, ASSISTANT TO THE GENERAL PRESIDENT, INTERNATIONAL ASSOCIATION OF FIREFIGHTERS; WENDY HUTCHINSON, ON BEHALF OF THE BALTIMORE TEACHERS UNION AND AMERICAN FEDERATION OF TEACHERS; GIEV KASHKOOLI, VICE PRESIDENT, UNITED FARM WORKERS; THOMAS G. GRUMBLES, CERTIFIED INDUSTRIAL HYGIENIST, AMERICAN INDUSTRIAL HYGIENE ASSOCIATION AND THE PRODUCT STEWARDSHIP SOCIETY; MARK N. DUVALL, PRINCIPAL, BEVERIDGE AND DIAMOND PC; AND ADAM M. FINKEL, D.SC., CLINICAL PROFESSOR OF ENVIRONMENTAL HEALTH SCIENCES, UNIVERSITY OF MICHIGAN SCHOOL OF PUBLIC HEALTH

STATEMENT OF JEANEEN MCGINNIS

Ms. MCGINNIS. Thank you.

Thank you, Chairman Tonko and Ranking Member Shimkus and members of the committee, for the opportunity to testify before you today.

My name is Jeaneen McGinnis. I am an FCA–UAW benefit representative. I am also a retiree and I represent the UAW Local 1413 and 1929 out of Huntsville, Alabama. I was hired as an assembly line worker at the Chrysler plant in Huntsville Alabama in 1983.

It was a profound time in my life when I was entering the workforce for the first time. My husband had just been—gotten out of the military after serving for several years and we needed to supplement our income, so I had to seek employment.

I was overjoyed to land a job that was so highly sought after in the area of our country with Chrysler Corporation where the jobs were so scarce. It offered a decent wage and opportunity for growth, which I quickly took advantage of and soon—later on earned a degree.

Once known as the fastest-growing automotive electronic operation in North America, the plant built many products that went into the Chrysler vehicles and other vehicles.

When I started working there, there were approximately 2,400 employees and it rose to 2,800 employees. It was a fast-moving plant that had different lines with large solder waves throughout the plant.

Many of us began—became concerned due to the breathing problems we experienced related to the solder paste and the fumes that were coming from the solder wave machines.

The plant was very old, and very poor ventilated, and our skin was exposed to the various chemicals used in the production. There was a field adjacent to our—one of the old buildings that we worked in where the ladies play softball and our concerns were heightened when they closed the softball field and later found out that the soil was contaminated.

But we continued to work in the plant that was right next to the field. In the early 1990s, we moved to a newly-built plant called the Huntsville Electronic Division of Chrysler, or HEDC, and we moved to Madison, Alabama.

It wasn't until we moved that the workers were provided guidelines and hazardous postings. Many had already, though, been exposed to—in the old plants to all the chemicals that were in those plants.

While there were improvements due to—and due to unfamiliarity of the chemicals being used we were still breathing fumes from TCE and dust from fiberglass created from the printed circuit boards.

There were 16 assembly lines in a wide-open space with big solder wave machines on most of the lines. Every line had cleaning stations. These agents that were used for cleaning were to clean the residue off the printed circuit boards and that product that we used was TCE.

Chlorinated solvents like TCE were thought to be safety solvent because they would not catch on fire. As workers, we didn't understand the possible health effects of these chemicals and just focused on completing our jobs and wanting to do a good job and get it done. Now, later, we realize that TCE is a known carcinogen.

Researchers have studied our death rate of our retirees and they found that my co-workers have died at a higher rate than the general population of disease related to TCE and other chemical exposures including cancer of the brain, the nervous system, as well as non-cancer nervous system diseases.

A lot more could have been done to protect our workers and less chemical risk. Companies need to be held accountable and more stringent legal requirements are needed to ensure that the workers are not exposed to harmful chemicals.

We need to go forward and not backward to the 1970s. The Obama administration has proposed banning use of TCE. However, the Trump administration has not issued final rules on these bans.

As more business and auto manufacturing jobs are coming to my region of the country, we will be faced with the same issues. Chemicals must be tested for rigorous testing and they must be tested again and again and again before manufacturers are permitted to use these chemicals in our plants and our workplaces.

In 2016, President Obama signed the Lautenberg Act to fix the Toxic Substance Control Act. We can't afford to wait anymore. Implementation of the TSCA is a must and must be a top priority for the EPA and this administration to protect our workplace and our communities from untested toxic chemicals.

In this great country everyone should be able to work with the expectation that their workplace is safe and that we all should be able to enjoy our golden years.

Thank you.

[The prepared statement of Ms. McGinnis follows:]

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INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA – UAW

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Mismanaging Chemical Risks: EPA's Failure to Protect Workers
House Energy and Commerce, Environment and Climate Change Subcommittee

Testimony of Jeaneen McGinnis, FCA-UAW Retiree

Thank you Chairman Tonko and Ranking Member Shimkus for the opportunity to testify today. My name is Jeaneen McGinnis, I am a FCA-UAW retiree and Benefit Representative with UAW local 1413/1929. I live in Huntsville, Alabama.

I was hired as an assembly line worker at the Chrysler plant in Huntsville, Alabama in 1983. It was a profound point in my life, since I was entering the workforce for the first time and my husband had just served 7 years in the military. Married at a very young age, I was a busy stay at home mother until my daughter turned three years old. Now that my husband was out of the military, I needed to find a job to supplement the family income. I had not finished college and came to quickly realize that job opportunities were limited without a degree. I was overjoyed to have a job that was highly sought after in this area of the country where jobs were scarce. It offered decent wages and opportunity for growth - that I quickly took advantage of later in my career when I earned a degree in Human Resource Management.

Once known as the "fastest growing automotive electronics operation in North America," our plant built AM/FM radios, air bags, odometers, speedometers, oil and gas gauges on the assembly line. When I started working there were approximately 2,400 workers but soon reached to over 2,800. I assembled the circuitry for the dashboard instruments including the speedometer, fuel gauge and check engine lights. The parts were used in PT cruisers and other high-end vehicles sold in the United States and abroad.

It was a fast-moving plant that had different lines and products built. We had to learn jobs quickly and cross trained to learn all the jobs in the plant. Our facility manufactured circuit boards using wave solder machines. Various electronic components were inserted into each circuit board and then it was passed across a wave of molten solder. Many of us became concerned because we were exposed to the paste and the fumes during the fabrication and assembly of the boards. The plant was poorly ventilated, we were breathing in the fumes on a daily basis and our skin was exposed to the various chemicals used in production. To make matters worse, gloves were not worn during soldering process. We received little training and were uninformed of the chemicals being used.

Our worries were justified. There was a baseball field adjacent to one of our buildings. They wouldn't let the women play softball there anymore and closed the ball field after testing concluded that there was soil contamination. But we continued to work in the plant.

JN/ns
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In the early 1990's, I moved to a newly built plant called Huntsville Electronic Division Chrysler (HEDC) in Madison, Alabama. It wasn't until we moved that the workers were provided with guidelines and hazardous postings. But many of us had already been exposed for many years prior to this. While there were improvements at the new plant, there was still inadequate ventilation, insufficient training on how to handle the chemicals and unfamiliarity with the chemicals we were using. There were 16 assembly lines in wide open space and big solder wave machine in the middle of the big plant. We were using our bare hands to take the solder paste out of the containers and running the circuit boards through the machines. We were just trying to get the job done and we weren't always thinking about how harmful the paste was.

I should also note that every solder line had a cleaning station. The agent used to clean the resin off the circuit boards was trichlorethylene (TCE). Chlorinated solvents like TCE were thought to be "safety solvents" because they would not catch fire. As workers, we didn't understand the possible health effects of these chemicals. They provided us with gloves but no training on how to safely handle the substances we were using. Now I know that we were exposed to chlorinated solvents including TCE. TCE is a known carcinogen.

In 2003, I moved off the assembly line and became a benefit representative with the UAW. The plants were sold and eventually closed. Now I work with the 2,000 retirees who suffer the effects of exposure at the plants. Once a month, I attend a luncheon with 90-130 retirees from the Huntsville plant. I am accustomed to showing up and not seeing the person that I sat next to from the previous lunch because they are no longer with us. Many retirees are angry and want to know why there appear to be high rates of deaths as a result of nervous system disorders and cancer. I encourage the retirees to go see their doctor, run tests to detect and treat health issues early. Researchers have studied my workplace. They found that my co-workers have died at a higher rate than the general population of diseases related to TCE and other chemical exposures in my workplace. These diseases include cancers of the brain and nervous system as well as non-cancer nervous system diseases.

A lot more could have been done to protect workers at the Huntsville Plant and lessen chemical risks. Companies need to be held accountable and more stringent legal requirements are needed to ensure that workers are not exposed to harmful chemicals. We need to go forward not backward to 1977. The Obama Administration proposed banning some uses of TCE. Sadly, the Trump Administration has not issued final rules for these bans.

As more businesses and auto manufacturing jobs move to my region, we will be faced with the same issues. It may be too late for many of our retirees. Chemicals should be tested ***before*** manufacturers are permitted to use them in the workplace. In 2016, President Obama signed the Lautenberg Act to fix the Toxic Substances Control Act (TSCA). We can't afford to wait anymore. Implementation of the TSCA must be a top priority of the EPA and the Administration to protect our workplaces and communities from untested and toxic chemicals. Everyone should be able to go to work with the expectation that the workplace is free of health and safety hazards and that they can enjoy their golden years.

I look forward to responding to your questions. Thank you.

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Mr. TONKO. Thank you very much.

We will now move to Mr. Patrick J. Morrison, speaking from the International Association of Firefighters' perspective.

Welcome.

STATEMENT OF PATRICK J. MORRISON

Mr. MORRISON. Thank you, Chairman Tonko and Ranking Member Shimkus and members of the subcommittee.

My name is Patrick Morrison. I am assistant to the general president for occupational health and safety and medicine of the International Association of Firefighters.

Prior to that position, I was a firefighter for 20 years with the Fairfax County Fire and Rescue Department. I appreciate the opportunity to appear today before you on behalf of General President Schaitberger and over 316,000 professional firefighters and emergency medical personnel who comprise our organization.

Our members face significant chemical exposures on the job due to the vast quantity of chemicals in building materials, consumer products, and the equipment our members use every day.

Firefighters have put our trust in the EPA to regulate these toxic chemicals but have witnessed only modest efforts by the current administration to protect the health and wellbeing of exposed workers.

This is very concerning to us as firefighters have a higher rate of certain cancers than the general population including twice the rate of mesothelioma.

Unfortunately, in the year since TSCA's passage, little progress has been made. Specifically, we are disappointed in EPA's failure to evaluate all susceptible subpopulations and address the use and disposal of legacy chemicals.

We are pleased that EPA included both asbestos and HBCD, a flame retardant, as two of the first 10 chemicals to evaluate under TSCA, as firefighters are regularly exposed to these chemicals through their work.

The IFF presented evidence relating to firefighters' exposure to these chemicals and the associated health problems linked to occupational exposure in response to EPA's scope of risk evaluation document released in June 2017.

These documents included firefighters as a susceptible subpopulation and included legacy uses as part of the evaluations. Unfortunately, EPA's failure to include firefighters as a susceptible subpopulation in their problem formulation document for asbestos released in May of 2018.

Furthermore, EPA also removed the evaluation of both legacy HBCD and legacy asbestos, including disposal from such documents. Firefighters have high exposures to these chemicals daily as part of their occupation and should be evaluated.

Additionally, according to TSCA, EPA must evaluate the entire life cycle of a chemical from the moment these chemicals enter the market until they are disposed of. The EPA should be evaluating them through this entire life cycle.

Unfortunately, removing the legacy use of asbestos and HBCD from EPA's evaluation will almost certainly skew the evaluations'

results, especially as it relates to workers. The bulk of exposures to these chemicals are a result of legacy use.

Further, from the firefighters' perspective, such exposures are not legacy. They are occurring today. While TSCA is among the highest profile chemical legislation that has directly impacted our members, it is not our only concern.

Recently, Congress noted the dangers associated with PFAS. These chemicals are found in AFFF firefighting foam primarily used at military bases and airports, older protective clothing, and potentially in newer protective clothing.

In 2006, EPA instituted the voluntary PFOA stewardship program that resulted in reduced production of PFOA and other long-chain PFAS production by eight major manufactures by 2015.

However, these are existing stocks of foam—however, there are existing stocks of foam containing these chemicals still being used.

In 2007, EPA issued significant new use rule regulating a significant number of PFAS chemicals. This effort was specific to PFAS chemicals reporting requirements and did not restrict the use of existing stocks of legacy AFFF firefighting foam containing long-chain PFAS chemicals.

In 2015, EPA proposed another SNUR PFOA, another long-chain PFAS as a regulatory follow-up to the voluntary PFOA stewardship program. Regrettably, this SNUR has not been finalized.

We are also aware that EPA is starting to work on a PFAS action plan to outline concrete steps to address PFAS and to protect the public health. Unfortunately, yet again, EPA is neglecting to look at the worker's perspective.

EPA's plan addresses communities affected by firefighting foam runoff but they are not looking at the subgroup of airport and base firefighters that are using these foams and exposed to these chemicals on a regular basis.

Since there is little Federal oversight in this topic to protect workers, we are taking matters into our own hand. Currently, IFF is sponsoring three research projects relating to PFAS, testing firefighters' blood, station dust, and turnout gear for the substance.

While we are frustrated with the efforts from EPA on these issues, the IFF will continue working with legislators and other decision makers to address our concerns with these chemicals and their use.

Thank you.

[The prepared statement of Mr. Morrison follows:]

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

Statement of

PATRICK J. MORRISON

Assistant to the General President, International Association of Fire Fighters

before the

Subcommittee on Environment and Climate Change
United States House of Representatives
on

Mismanaging Chemical Risks: EPA's Failure to Protect Workers

March 13, 2019

Thank you Chairman Tonko, Ranking Member Shimkus and distinguished members of the Subcommittee. My name is Patrick Morrison and I am Assistant to the General President for Occupational Health, Safety and Medicine of the International Association of Fire Fighters (IAFF). I appreciate the opportunity to appear before you today on behalf of General President Harold A. Schaitberger and the over 316,000 professional fire fighters and emergency medical personnel who serve as this nation's domestic defenders. Over the last 100 years, the IAFF has been and continues to be the nation's leading voice on health and safety issues impacting the fire service. Our work helps ensure our members are as healthy and safe as possible on the job through access to proper education, training, annual medical exams, exposure prevention techniques and the latest research.

I come before you today to offer my testimony on how fire fighters and other workers are being harmed due to the Environmental Protection Agency (EPA) systemically ignoring exposure risks in its loose implementation of the Frank R. Lautenberg Chemical Safety Act and other laws.

Our members risk their lives every day to protect the communities they live in, but the risk of injury responding to burning buildings, transportation accidents, aircraft emergencies and wildfires is not the only aspect that makes fire fighting a dangerous occupation. Our members face significant chemical exposures on the job due to the vast quantity of chemicals added to building materials, consumer products and the equipment our members use every day. Many of these chemicals have been linked to cancer and other negative health concerns. Fire fighters dying from occupational-related cancers now account for 65 percent of the line-of-duty deaths each year as reported to the IAFF. This is the largest health-related issue facing the fire fighting profession. Fire fighters, like other Americans, have put our trust in the EPA to regulate these toxic chemicals, but unfortunately, have witnessed only modest efforts by the current Administration to protect the health and well-being of workers exposed to such chemicals.

In 2016, Congress passed, and President Obama signed the Frank R. Lautenberg Chemical Safety Act for the 21st Century (TSCA), updating the outdated Toxic Substances Control Act originally passed in 1976. The IAFF worked closely with Congress to pass this important bill with the hope that it would spearhead long overdue work at the EPA to regulate the toxic chemicals our members are exposed to daily. Unfortunately, in the years since TSCA's passage, little progress has been made. Specifically, we are disappointed in the EPA's failure to evaluate all susceptible subpopulations and address the use and disposal of legacy chemicals.

As the Subcommittee is aware, TSCA mandated the EPA initiate ten risk evaluations of chemical substances to determine if such substances present an unreasonable risk of injury to health or the environment, including unreasonable risks to potentially exposed or susceptible subpopulations, under the conditions of use. We were pleased that the EPA included both asbestos and Hexabromocyclododecane (HBCD), or Cyclic Aliphatic Bromide Cluster, a flame retardant, as two of these first ten chemicals. Fire fighters are regularly exposed to these chemicals through their work.

Asbestos becomes airborne when disturbed or damaged by fire. Fire fighters enter burning buildings, extinguish fires, and open walls and ceilings to check for fire extension; all three tasks expose fire fighters to asbestos fibers. These activities are daily occurrences, and while the asbestos to which they are exposed is legacy, these are technically new exposures. After the initial exposure, asbestos fibers can remain on the turnout gear and station clothing and spread to apparatus cabs and fire stations. Fire fighters can inhale large amounts of these microscopic fibers, and unknowingly increase their risk of developing an asbestos-related disease such as mesothelioma, lung cancer, and asbestosis.

Fire fighters are currently exposed to HBCD as they regularly encounter consumer products and building materials where it was used, under extreme heat conditions as part of their occupation. Furthermore, research indicates that fire fighters have multiple exposure sources. They are exposed at the scene of a fire, through residue on their protective equipment (off-gassing) and from the contaminants they bring back to the station. Fire fighters are exposed through all main exposure routes - inhalation, dermal and oral - which increases their susceptibility to HBCD.

The IAFF presented evidence relating to fire fighters' exposure to asbestos and HCBD and the associated health problems linked to occupational exposure in response to the EPA's Scope of the Risk Evaluation documents released in June, 2017. These documents included fire fighters as a susceptible subpopulation and included legacy uses as part of the evaluations.

Unfortunately, despite the clear danger asbestos and HBCD pose to our members and their demonstrable regular exposure, the EPA failed to include fire fighters as a susceptible subpopulation in their Problem Formulation document for asbestos released in May, 2018. The HBCD Problem Formulation document was more general, stating EPA will evaluate susceptible subpopulations, including occupational nonusers. Furthermore, the EPA also removed the evaluation of both legacy HBCD and legacy asbestos, including disposal, from such documents. We find these omissions unfathomable. With their removal, EPA is no longer evaluating a large population of workers experiencing regular and significant exposure.

According to TSCA § 3(12), "The term 'potentially exposed or susceptible subpopulation' means a group of individuals within the general population identified by the Administrator who, due to either greater susceptibility or greater exposure, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture, such as infants, children, pregnant women, workers, or the elderly." The law directly states that workers are included in this category and should be evaluated. Fire fighters face high exposures to asbestos and HBCD daily as part of their occupation, and therefore qualify as a susceptible subpopulation and should be evaluated.

Additionally, according to TSCA, the EPA must evaluate the entire lifecycle of a chemical. TSCA § 3(4), relating to the condition of use states, "the circumstances, as determined by the Administrator, under which a chemical substance is intended, known, or reasonably foreseen to

be manufactured, processed, distributed in commerce, used, or disposed of." From the moment HBCD and asbestos enter the market until they are disposed of, the EPA should be evaluating them through the entire lifecycle.

Unfortunately, removing the legacy use of asbestos and HBCD from the EPA's evaluations will almost certainly skew the evaluation's results. Especially as it relates to workers, the bulk of exposures to asbestos and HBCD are a result of legacy use. Further, from the fire fighter's perspective, such exposures are not "legacy" but occurring today. As I mentioned previously, fire fighters are currently exposed to these chemicals as a routine part of their occupation and will continue to be unless all asbestos is remediated and HBCD is no longer used in consumer products and building materials.

In the Problem Formulation document for asbestos, the EPA addressed the removal of fire fighters by stating, "In the Scope document, fire fighters were also included as a potentially exposed or susceptible subpopulation. However, fire fighters will be exposed to materials that are predominantly legacy uses, which will not be evaluated in the risk evaluation." This is very alarming to us, because the EPA is aware of our exposures and aware of the associated health concerns, but they are choosing the easy route by excluding both legacy use as well as a major susceptible subpopulation.

Current research supports the need to evaluate legacy asbestos. National Institute for Occupational Safety and Health (NIOSH) conducted a cohort study and published two publications; *Exposure–Response Relationships for Select Cancer and Non- Cancer Health Outcomes in A Cohort of US Firefighters from San Francisco, Chicago and Philadelphia (1950–2009)* and *Mortality and Cancer Incidence in A Pooled Cohort of US Firefighters from San Francisco, Chicago and Philadelphia (1950– 2009)*. The study evaluated 30,000 fire fighters over a 60-year timeframe, and it was the first study ever to identify an excess of mesothelioma in U.S. fire fighters. The multi-year study identified that the population of fire fighters in the study had a rate of mesothelioma two times greater than the rate in the U.S. population as a whole. Also, the findings show that malignant mesothelioma is largely attributable to asbestos exposure, with sparse evidence of other causes.

These findings have been helpful, but without federal guidance on this chemical, our members are constantly exposed and not always aware of what they are being exposed to. In August 2017, fire fighters from the Honolulu Fire Department responded to a 7-alarm fire, where they had no knowledge that asbestos was present. It wasn't until after the fire that members were notified of potential asbestos exposure. The result of the late notification was mass bagging of gear, thorough cleaning and the fear of the unknown health effects associated with this massive exposure. As a result, over 100 fire fighters may have been exposed and subjected to an increased risk of health effects.

Similar situations occur daily across the United States. Asbestos is in many old buildings, so while fire fighters may not be exposed to it as a new use in an industry setting such as a chlor-

alkali plant, the exposures remain current and deadly; the EPA must act to protect this susceptible subpopulation.

As regards the nonspecific language regarding susceptible subpopulations in the HBCD Problem Formulation, we are hopeful the EPA will include fire fighters in its scope. Recent research shows flame retardants are not as effective as once thought and are ultimately causing more harm than good with associated health effects, particularly in fire fighters.

While the IAFF is disappointed in the removal of legacy uses for asbestos and HBCD and the exclusion of fire fighters as a susceptible subpopulation for asbestos, we do support the EPA's continued evaluation of HBCD in Expanded Polystyrene (EPS) and Extruded Polystyrene (XPS) foam, as this type of insulation can be found in many residential, public, and commercial structures. This is also a current exposure for our members. Evaluating these foams will result in more information and a better understanding of exposure routes and the associated health effects of these chemicals.

While TSCA is among the highest profile chemical legislation that has directly impacted our members, it is not our only concern. Recently, Congress has noted the dangers associated with Per- and Polyfluoroalkyl Substances (PFAS). Under this large class of chemicals are perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), two of the most persistent and most widely studied PFAS chemicals. They are also our biggest concern because of its presence in AFFF fire fighting foam, primarily used at military bases and airports, older protective clothing, and potentially in newer protective clothing.

There is evidence suggesting PFAS can cause tumors in lab animals exposed to very high doses, particularly in the liver, reproductive organs, and pancreas. Studies among highly exposed populations have shown a more than insignificant risk of testicular, kidney, bladder, and thyroid cancer related to PFOA and PFOS exposure. The International Agency for Research on Cancer (IARC) classifies PFOA as a Group 2B carcinogen, meaning it is "possibly carcinogenic to humans" based on limited evidence.

Studies on non-cancer health effects are also limited due to small study populations and inconsistent results. However, research suggests that high exposures to PFAS are associated with developmental effects during pregnancy or breastfeeding, thyroid damage, increases in blood cholesterol levels, and liver damage. PFAS are corrosive and can cause damage to the skin and eyes, including blindness.

In 2006, the EPA instituted the voluntary PFOA Stewardship Program that resulted in the almost complete elimination of PFOA and other long-chain PFAS production by eight major fluorochemical manufacturers by 95% by 2010 and entirely by 2015. However, this only applied to eight major companies, not every company that produced PFOS/PFOA or companies importing the chemical. Therefore, there are existing stocks of fire fighting foam containing PFOS/PFOA chemicals still being used. While the Stewardship program helped the market move in the right direction, it was not a mandatory program and therefore PFOS/PFOA products are

still in use today. Since the EPA did not require these chemicals be banned, we are now seeing individual states doing the EPA's job and eliminating the chemicals on their own.

The EPA has also attempted to regulate these chemicals twice. In 2007, the EPA issued a Significant New Use Rule (SNUR) regulating a significant number of PFAS chemicals. This effort was specific to PFAS chemicals' reporting requirements, and did not restrict the use of existing stocks of legacy AFFF fire fighting foam containing long chain PFAS chemicals. In 2015, the EPA proposed another SNUR for PFOA and other long-chain PFAS as a regulatory follow-up to the voluntary PFOA Stewardship Program. Regrettably, this SNUR has yet to be finalized.

Without the EPA's guidance and because of limited environmental and toxicological research on these chemicals and replacement chemicals, some manufactures are switching to modern fluorotelomer AFFF containing only short-chain PFAS and other fluorinated Class B foams. Unfortunately, limited research exists on these chemicals, and data that do exist are cause for concern. The IAFF believes that the EPA should study these chemicals and their replacements to better learn how they affect exposed workers.

We are also aware that the EPA is starting to work on their PFAS Action Plan to outline concrete steps to address PFAS and to protect the public health. We think this is a long overdue project, as these chemicals have been used since the 1940's. Unfortunately, we are disappointed that yet again, the EPA is neglecting to look at the worker perspective. The EPA's Plan addresses communities affected by fire fighting foam runoff, but they are not looking at the subgroup of airport and military fire fighters that are constantly using these foams and exposed to these chemicals on a regular basis.

Lastly, I would be remiss if I did not express concern with the use of these chemicals in consumer products. PFOS production continues outside of the United States in China and India under no existing regulation, so imported products can contain these toxic chemicals. This impacts fire fighters. As these materials burn, fire fighters are exposed to the toxic byproducts of combustion.

Since there is little federal oversight on this topic to protect workers, we are taking matters into our own hands. Currently, the IAFF is sponsoring three research projects relating to PFAS:

- **Per/Polyflouroalkyl Substances (PFAS) Blood Study:** The IAFF has sponsored a study on the amount of PFAS within fire fighters' blood to determine if it is greater than the general population.
- **U.S./Canadian Fire Station PFAS Dust Study:** Dust samples from fire stations that were previously collected and analyzed will be reanalyzed for PFAS.
- **Testing turnout gear material for PFAS:** Select outer shell, thermal barrier and moisture barrier materials will be tested for PFAS.

These IAFF research projects will provide more comprehensive information about whether these toxic chemicals are in our gear, if various other carcinogens encountered on the fire ground are the source, or if it is a combination of both.

Congress is also beginning to address these issues. In October, 2018, Congress passed and the President signed into law, the FAA Reauthorization Act of 2018. The bill included a provision allowing municipal airports to discontinue use of fluorinated fire fighting foams. We fully supported this provision as it can move the industry away from this class of toxic chemicals and better protect airport fire fighters from exposure. We also understand a number of bills relating to PFAS exposure are in various stages of development, and look forward to continue working with Congress to address this critical issue.

While we are frustrated with the continuous neglect from the EPA, the IAFF will continue working with legislators and other decision makers to address our concerns with these chemicals and their use. We will continue to research these topics and evaluate additional studies to ensure our members have the latest information to protect themselves and remain safe on the job.

In conclusion, on behalf of the International Association of Fire Fighters, I appreciate the opportunity to testify today. We are committed to continue working with the EPA and Congress to better protect our members from the risks posed by toxic chemicals. To the extent that I or the IAFF can assist the Subcommittee in these efforts, I am happy to offer our expertise and pledge to work closely with you and your staffs.

Again, I'd like to thank the Subcommittee for the opportunity to testify today and am happy to answer any questions you may have.

Mr. TONKO. Thank you very much, Mr. Morrison.

We will now move to Ms. Wendy Hutchinson on behalf of the Baltimore Teachers Union.

Welcome.

STATEMENT OF WENDY HUTCHINSON

Ms. HUTCHINSON. Good morning, Chairman Tonko, Ranking Member Shimkus, and members of the subcommittee.

My name is Wendy Hutchinson. I am a science and health educator at Edmondson-Westside High School in Baltimore, Maryland.

I appreciate the opportunity to offer my perspective on the EPA's failure to protect school staff and students in our public schools. My comments will focus on three issues.

The first is asbestos removal in Baltimore schools. In 2017, the Baltimore Sun and others reported that parents of Rosemont Elementary and Middle School boycotted the school by keeping their children home because of district plans for a roof replacement, a project requiring the removal of materials testing positive for asbestos.

Contractors plan to work during after school hours from January through June. Pursuant to State and Federal guidelines, contractors were expected to take precautions to prevent particles from spreading.

In addition, air samples were taken daily before students were let back into the building. Parents advocated for students to be temporarily relocated but district leaders said that was not necessary.

I share this story because my school was constructed at the same time as Rosemont, a period when asbestos was commonly used in construction. As our State's school buildings continue to age and deteriorate, too many students and school staff are being exposed to the deadly asbestos fibers.

While some school districts are ignoring the obvious, other districts are simply not aware of their own hazards and the scope of work abatement—that work abatement requires.

As I prepared for today, colleagues shared that the EPA is narrowing how the agency assesses the impact and health risks of toxic chemicals like asbestos on school employees and students.

Thirty-three after Asbestos Hazard Emergency Response Act became law, far too many people are still exposed to asbestos. Virtually every expert will say there is no safe level of exposure to asbestos.

Even minimal exposure can lead to significant diseases such as mesothelioma or lung cancer. In fact, a two-year study by NIOSH found an elevated rate of mesothelioma among public school teachers whose only exposure to asbestos was at school.

I have a co-worker who died of lung cancer. She was in good shape, athletic, a non-smoker, and ate well. She worked for many years in a school built in 1955 that had asbestos and was not completely renovated before her untimely death.

Although it is now a known human carcinogen, asbestos has previously been used in school buildings like mine, especially from 1946 to 1972. This means some 131,000 school facilities in the

United States as well as 57 million students and school staff are potentially exposed.

Next, I would like to discuss lead in Baltimore schools. Lead testing was mandate in 2017 after a decade of banned water use in public school facilities in Maryland.

Since testing began, elevated levels of lead have been found in nearly all of the 170-plus schools in the city school system. For years city schools notoriously used plastic water bottles to provide safe water for students. But fixing the problem would mean replacing all the water pipes, costing millions of dollars per school.

My school has not been renovated and is not on any list for renovation currently. I visited the city school system Web site and found that as the school district tries to improve school buildings, it has installed water filtrations systems in some schools and upgraded plumbing in new buildings. To date, some 14 have working water fountains and clean water in their kitchens and no longer require bottled water.

Finally, I would like to share my personal experience with a combination of hazardous environmental exposures in the city school system. My fellow teachers and students understand the lack of investment in school infrastructure, particularly in schools serving many students of color. It impedes learning and compromises our health and safety.

How do we send children to schools with contaminated water or inadequate air quality? Too often parents are unaware that they are sending their children to substandard learning environments.

Our children and educators deserve better and that begins with the EPA assuming full responsibility for these issues. While the EPA has authority to mandate significant protective measures to spare students and school staff from unhealthy exposure, it has generally failed to do so.

Asbestos and lead are just two examples but there are others. As a result, veteran educators who have been working in the same building silently suffer and are at risk for potential long-term consequences.

Congress can help make school buildings safer by providing more resources for school infrastructure. In its 2017 report on the nation's infrastructure, the American Society of Civil Engineers gave school facilities a D. It found that nearly 53 percent of public schools needed to make renovations or upgrades to be in good condition.

That is why I am pleased that the Rebuild America's Schools Act is moving forward in the House.

In closing, I can only hope you understand that investing in school infrastructure will increase the health and safety of children and school staff. That is what my union, the AFT, has launched Fund Our Future, a national campaign to secure sustainable investments in our public schools and public colleges.

It is our solemn responsibility to educate our nation's future workforce in safe and healthy buildings so that all students can reach their potential.

[The prepared statement of Ms. Hutchinson follows:]

Testimony of Wendy Hutchinson
Baltimore Teachers Union,
American Federation of Teachers, Local 340

Before the House Subcommittee on Environment and Climate Change

"MISMANAGING CHEMICAL RISKS: EPA'S FAILURE TO PROTECT WORKERS"

March 13, 2019

Good afternoon Chairman Tonko and Ranking Member Shimkus, and all of the distinguished members of the subcommittee.

My name is Wendy Hutchinson, and I am a science and health educator at Edmondson-Westside High School in Baltimore, Maryland. Edmondson-Westside is a school in the Baltimore City Public School System, and I have been a certified health educator there for over 10 years. I also am the academic adviser for the boys basketball team. Over the years, I have served on a variety of committees that advocate for students, and I have been recognized as teacher of the month twice. I enjoy being an educator, working with young people in the roles that I do.

I truly appreciate the opportunity to be here today to discuss my perspective on the EPA's failure to protect teachers and other workers like me who work in the public education system. I also hope to raise awareness about how the lack of investment in school infrastructure, particularly in those schools serving high numbers of students of color, impedes learning by forcing students to attend schools that are unhealthy and in ill repair . My comments will mainly focus on the following:

- Examples of asbestos removal in Baltimore schools and misinformation to the public.
- Persistent presence of lead in Baltimore schools' fountains and pipes and the continued reliance on bottled water.
- And finally, my personal experiences with a combination of hazardous environmental exposures in the Baltimore City Public School System.

Let's begin with **asbestos removal in Baltimore schools:** In 2017, the *Baltimore Sun* and numerous other news outlets reported that parents of Rosemont Elementary and Middle School students boycotted the school by keeping their children home from school because of district officials' plans for a roof replacement project that involved removing building materials that tested positive for asbestos.

The plan was to have contractors remove the roof during after-school hours from January through June. Pursuant to state and federal guidelines, contractors were expected to seal off and wet work areas to prevent particles from spreading. In addition, each day, air samples would be taken before students were let back into the building. Parents advocated for students to be temporarily relocated while the work was done, but district leaders suggested that relocation wasn't necessary for roof abatement.

District officials maintained that the school building was safe for occupancy, but, as you can imagine, parents felt uncomfortable sending their children into a school building only hours after workers would be removing asbestos.

What's alarming is, it was only after parents raised their concerns that the Baltimore school board voted to increase the amount of money for the project.

I share this story because Rosemont is only a few miles away from my school, and both buildings were constructed during the time when asbestos was commonly used. I believe that as our state's school buildings continue to age and deteriorate, students and teachers like myself are subject to being exposed to deadly asbestos fibers, among many other environmental hazards. What's worse is that while some school districts are ignoring the obvious, other districts are simply not aware of the ramifications of environmental hazards and the specialty with which they must be abated.

As I prepared for this hearing, I was told by colleagues that leadership at the EPA is narrowing how they assess the impact and health risks of toxic chemicals such as asbestos on school employees and workers. Teachers, staff and students continue to be exposed to deadly asbestos even 33 years after the Asbestos Hazard Emergency Response Act was passed. From what I understand, the EPA is not meeting its responsibility of enforcing AHERA and its oversight of states that receive federal grants to do so. The result?

As many of the experts on this panel will inform you, there is no safe level of exposure to asbestos. Even minimum exposures can lead to significant diseases such as mesothelioma, lung cancer or asbestosis.[i] In fact, in a study that took place

from 1999 through 2001, the National Institute for Occupational Safety and Health found an elevated rate of the rare deadly mesothelioma among elementary school teachers whose potential exposure to asbestos was at school. I have a co-worker who died of lung cancer. I can only equate the environmental hazards that she came in contact with while working for many years in a school that was built in 1955 and has not been completely renovated to her untimely and early death.

Although it is now a known human carcinogen, asbestos has previously been used in school buildings, especially from 1946 through 1972.[ii] So that means that some 131,000 public and private school facilities in the United States, and more than 57 million students, teachers and other workers, are potentially exposed.[iii] My school, Edmondson-Westside, was built in 1955.

Recent reports of the EPA's Office of Inspector General, in 2013 and 2018, have found lax EPA oversight and enforcement on asbestos and other environmental hazards at schools. Students, teachers and staff being exposed to dangerous asbestos and other toxic chemicals deserve better from an agency tasked to protect workers and children from harmful environmental hazards in the workplace and in their places of learning.

Next, I'd like to discuss **lead in Baltimore schools:** Lead testing in water sources in Baltimore City Public Schools was mandated in 2017 after a decade of banned water use in public school facilities across the state.

Since testing began after the 2017 law, elevated levels of lead have been found in nearly all of the 170-plus schools in the city school system.[iv] For years, city schools have hauled in plastic water bottles and containers in order to provide safe drinking water for students. The schools' reliance on bottled water due to lead in drinking fountain water is notorious. But fixing the problem would mean replacing all the water pipes, which could cost millions of dollars per school. My school has not been renovated and is currently low on the priority list for renovation.

I visited the Baltimore City Public Schools' website and found that as the school district continues to try to improve school buildings, it has installed water filtration systems in some schools and upgraded plumbing in new buildings. To date, some 14 have working water fountains and clean water in their kitchens. And as a result, these schools no longer receive bottled water for drinking or cooking.

I do know that some members of the Maryland General Assembly have stepped up by working to expand upon the mandate from 2017. But, the legislation being discussed is for a grant program, so it suggests that lead abatement remediation funding is rather limited and lacks the urgency it deserves.

Finally, I'd like to share **my personal experiences** with a combination of hazardous environmental exposures in the Baltimore City school system.

My fellow teachers and the students I teach all know and feel the effects of the lack of investment in public education, from the significant health and safety risks to the profound lack of opportunity to thrive for communities of color.

How do we send children to schools that are laden with contaminated water or inadequate air quality? In my cases, parents are unaware that they are sending their children to substandard learning environments. Our children and those working in public schools deserve better, and that begins with the EPA assuming full responsibility for these issues. Supporting school workers, such as teachers, administrators and other school-related personnel, is critical.

While the EPA has regulatory authority to mandate significant protective measures to spare teachers, staff and students from exposure to harmful conditions, it has generally failed to do so. Asbestos and lead are just two examples. The agency has not developed robust enforcement and guidance for other chemicals, such as graffiti removers, which often contain methylene chloride, or PCBs in our old light fixtures. Exposed school workers over the course of long careers in the same building silently suffer the potential long-term consequences.

Another step that can be taken to help make school buildings safe is providing more resources for school infrastructure. In 2017, in a report on the nation's infrastructure, the American Society of Civil Engineers gave school facilities a D-plus. According to the report, nearly 53 percent of public schools needed to make repairs, renovations or upgrades to be in good condition. That is why I was

heartened to learn that the Rebuild America's Schools Act is beginning to move forward in the U.S. House of Representatives.

As I close, I want to impress upon you that investing in rebuilding and modernizing public schools is highly important to the health and safety of children and school employees alike. To help with this advocacy, my national union the American Federation of Teachers is launching Fund our Future, a national campaign to get necessary sustainable investments in our public schools and public colleges. We are ultimately talking about the quality of the American workforce because students can't learn in building conditions that compromise their capacity to learn.

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[i] Hilda Garduno, Eric Lewis, Ryan Maxwell and Julie Narimatsu, "EPA Needs to Re-Evaluate Its Compliance Monitoring Priorities for Minimizing Asbestos Risks in Schools," EPA, Office of Inspector General, Sept. 17, 2018, page 2.
[ii] Garduno et al., "EPA Needs to Re-Evaluate," page 1.
[iii] Garduno et al., "EPA Needs to Re-Evaluate," pages 1-2.
[iv] John Rumpler and Christina Schlegel, "Get the Lead Out: Ensuring Safe Drinking Water for Our Children at School," Environment Maryland Research & Policy Center, February 2017, page 16.

Mr. TONKO. Thank you, Ms. Hutchinson.

And now we welcome Mr. Giev Kashkooli, vice president of the United Farm Workers.

Thank you.

STATEMENT OF GIEV KASHKOOLI

Mr. KASHKOOLI. Thank you, Chairman Tonko, Ranking Member Shimkus. It is an honor to be here with firefighters, teachers, and auto workers.

My name is Giev Kashkooli. I am the second vice president of the United Farm Workers. In addition to our members, we are proud to fight for the 2.5 million who feed the 325 million rest of us in this country.

Unlike the other panelists, farm workers and the control of pesticides is the one group of workers where EPA has full responsibility to enforce. For every other worker in the United States, it is OSHA that has that responsibility.

There is an ugly race-based history for why farm workers were excluded from that. But we are pleased that some of that is being changed, first, with EPA coverage and also just last week bipartisan support by Congress including farm workers in close to full protections as all other workers as part of PRIA 4. That is a great moment and we hope from here, we can be moving forward.

We want to be moving forward because of incidents like what happened on May 5th, 2017, in rural California. That was the day—this is not going to be a war zone I am going to describe but was a day when a group of principally women and some men were harvesting cabbage when a noxious odor came into their senses. Some of their lips began to go numb, there was an extraordinarily awful taste in their mouth, and yet, as Ms. McGinnis mentioned, when people are needing to work and put food on their own families' plates, this group of women and men continued to work.

But soon after, the headaches started to set in. Some women began to vomit, and when another woman looked across at her daughter who was working alongside her, and saw her begin to convulse and rub her eyes-and then Bircmary, who was 37 years old, fell to the ground, convulsing, a mother of three children.

None of them knew what had happened. None of them knew that day what had happened even after going through the humiliation of being stripped naked out in the fields to be tried to be cleansed of that toxic chemical.

So these were dangerous. They learned later that this was chlorpyrifos. Most farm workers have children. Over 55 percent of them do. Approximately 500,000 farm workers are under the age of 18 themselves. And so these are really dangerous impacts. Unlike the other chemicals, pesticides are deliberately designed to harm species, including people.

I want to focus specifically on the chemical—the neurotoxic chlorpyrifos. Chlorpyrifos is acutely toxic and prenatal exposures to chlorpyrifos are associated with lower birth weight, reduced IQ, loss of working memory, attention disorders, and delayed motor development.

The women like Bircmary and Lucia and Aylin and Vicenta, who I just mentioned, it turned out all had been exposed to chlorpyrifos.

Chlorpyrifos is a restricted use pesticide and the scientific evidence about the dangers of chlorpyrifos, to quote the American Academy of Pediatrics, "The science of its toxicity is unambiguous." That is a quote from their report.

Here is another quote: "There is a wealth of evidence demonstrating the detrimental effects of chlorpyrifos exposure to developing fetuses, infants, children, and pregnant women."

In the longitudinal study on impacts done by the University of California, it was shown to reduce the IQ in children. EPA's own risk assessments of chlorpyrifos document the health risks.

In 2014, they showed that the extensive body of peer-reviewed science correlated chlorpyrifos exposure with brain damage to children. It showed in treated drinking water chlorpyrifos transforms to the more toxic chlorpyrifos oxon.

In 2016, the EPA scientists showed that all food exposures exceed safe levels—all food exposures—with children ages one to two exposed to levels of chlorpyrifos that are 140 times what EPA deems safe.

They concluded that there is no safe level of chlorpyrifos in drinking water. They concluded chlorpyrifos is found at unsafe levels in the air at schools, homes, and communities throughout rural America.

These are devastating impacts. At least 20 incidents of exposure a year took place in California alone, where we have a better database than other States.

So, very simply, now EPA, unfortunately, overturned that and is ignoring the science and now Congress must act. So what we ask of you, of the committee—we have a lot more detail in the written testimony—but one, for farm workers EPA is the only enforcement mechanism so you have oversight there and we ask that this new law that you passed on a bipartisan basis last week, that that law gets enforced.

I really appreciate Ranking Member Shimkus referencing that we pass these laws and then there needs to be a process of enforcement.

And second, we ask you to join your colleague, Representative Nydia Velazquez, in H.R. 230, which would ban the use of chlorpyrifos which, again, the American Pediatric Association has shown it is unambiguous in its impacts on children.

Thank you so much.

[The prepared statement of Mr. Kashkooli follows:]

Testimony of Giev Kashkooli
2nd Vice President
United Farm Workers

U.S. House of Representatives
Committee on Energy and Commerce
Subcommittee on Environment & Climate Change Hearing on
"Mismanaging Chemical Risks: EPA's Failure to Protect Workers"

March 13, 2019

Chairman Tonko, Ranking Member Shimkus, and members of the Subcommittee, thank you for the opportunity to share the views of the United Farm Workers of America ("UFW") and the experiences of the workers that we represent.

My name is Giev Kashkooli, and I serve as 2nd Vice President and the political and legislative director for the UFW, where I serve as the union's political and legislative director. I have worked with the union for over 20 years throughout California, New York, Washington, D.C., and Florida.

About the United Farm Workers

Founded in 1962 by Cesar Chavez, Dolores Huerta, and other early organizers, the UFW is the nation's first enduring and largest farm worker union. At the state and federal level, the UFW actively champions legislative and regulatory reforms that advance the health, safety and well-being of farmworker families and rural communities. Protecting both farm workers and consumers has been a hallmark of the United Farm Workers since the 1960s. Our founder Cesar Chavez asked, "What good does it do to achieve the blessings of collective bargaining and make economic progress for people when their health is destroyed in the process?"

The first time DDT was banned in the United States was not by the EPA, it was via a UFW contract with a grape grower in 1967. The UFW exposed the McFarland cancer clusters in the Central

Valley of California during the '80s and we continue to negotiate union contracts with pesticide protections. [1] A few years before his death, Cesar Chavez's last—and longest—public fast, of 36 days, in 1988 was over the pesticide poisoning of farm workers and their children. Since then, the UFW helped enact basic pesticide protections in California, Texas and Washington State during the '80s, '90s and early 2000s. They included posting in the fields, wait periods before re-entry and pesticide drift notifications near schools.

For decades, our union has been fighting to correct the historical inequities that penalized farm workers with weaker protections than workers in other industrial sectors. At the federal level and in the state of California, we have fought for laws and regulations that provide life-saving protections for farm workers and consumers. Among them:

- The Agricultural Worker Protection Standard (WPS)
- The Certification of Pesticide Applicators (CPA) rule
- California standards -- the first in the U.S. -- designed to prevent deaths and illnesses from extreme heat
- A California law -- another first -- that guarantees farm workers overtime pay after eight hours of work
- Pursuing bans on the use of nerve agent pesticides

Overview of the U.S. Farmworker Population

As you examine EPA's assessment and management of risks to agricultural workers from toxic pesticides, it's important that you understand the many challenges faced by farmworkers -- whose skilled work is integral to our food system -- and the impediments they continue to face in securing the legal right to a safe workplace. The reality that we see on in fields across the country is supported by the findings of the 2015-2016 National Agricultural Workers Survey (NAWS), conducted by the US Department of Labor. According to this survey, farmworkers are predominantly of Latino and/or indigenous ancestry, hailing from Mexico (69%) and Central

[1] See https://libraries.ucsd.edu/farmworkermovement/essays/essays/eleven/09%20-%20UFW%20FIGHTS%20HARVEST%20OF%20POISON.pdf

America (6%), while 1 percent are natives of South America, the Caribbean, Asia, and the Pacific Islands. Among all farmworkers, 6 percent identified as indigenous.[2] Nearly 70 percent identify as male (68%) and 32 percent, as female. Farmworkers are also relatively young, with two-thirds of the population (67%) under the age of 44:

- 14-19 years old (7%)
- 20-24 years old (11%)
- 25-34 years old (26%)
- 35-44 years old (23%)

In terms of family structure, among the 55 percent of farmworkers that reported having minors in their household:

- 53% had children younger than the age 6
- 65% had children ages 6-13, and
- 38% had children ages 14-17

At the national level, according to the Federal government's NAWS survey, 29 percent of farmworkers are U.S. citizens, 21 percent are legal permanent residents, while 49 percent are undocumented. And when it comes to language, 77 percent of farmworkers are most comfortable speaking in Spanish, 21 percent in English, and 1 percent in indigenous languages.

I share this, because there are as many as 2.5 million farmworkers across the U.S. who are exposed to pesticides in the process of cultivating and harvesting the food that reaches our tables, and tending to the ornamental plants that decorate our homes, yards and offices. And these are factors that influence a worker's ability to:

- speak out in the workplace about the hazards they face on the job without fear of retaliation
- access information about the chemicals that they are exposed to, directly or via a representative
- be adequately informed about pesticide safety and poisoning symptoms
- seek medical care when they feel ill

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[2] Findings from the National Agricultural Workers Survey (NAWS) 2015-2016: A Demographic and Employment Profile of United States Farmworkers. Research Report No. 13. January 2018. Available at https://www.doleta.gov/naws/pages/research/docs/NAWS_Research_Report_13.pdf

- protect their children from take-home exposures

Most farmworkers are exposed on the job to pesticides. And many pesticides are associated with serious health effects. Unlike many of the other industrial chemicals that have been discussed today, pesticides are *designed to be toxic* to some species. It is therefore not surprising that many of these chemicals have turned out to be very toxic to humans. Indeed, farmworkers have one of the highest rates of chemical exposures among U.S. workers. Yet in connection with pesticide exposure, farmworkers are denied the health and safety protections provided by the Occupational Safety and Health Administration (OSHA), even though the impetus behind the establishment of OSHA in 1970 was the growing concern in Congress about "the occupational hazard presented by the misuse of pesticides."[3]

There is an ugly, race based history of Federal law excluding farm workers from the same basic labor protections and other workers, including the Fair Labor Standards Act (FLSA), federal child labor laws and the Food Quality Protection Act (FQPA), and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). In the 1930s, U.S. Representative J. Mark Wilcox stated very clearly the opposition to inclusion of agricultural workers in the Federal labor laws: "You cannot put the Negro and white man on the same basis and get away with it."

To the extent federal law offers farmworkers protections from pesticides on the job, and safeguards for their families from take-home exposures due to pesticide residues on their bodies, clothes and shoes, this protection comes from the U.S. Environmental Protection Agency (EPA). These crucial protections against pesticide misuse, injuries, illnesses, and death are codified in the Agricultural Worker Protection Standard (WPS)[4] and the Certification of Pesticide Applicators (CPA) rule.[5]

If farm workers in fields across the nation, and workers who handle and apply pesticides aren't adequately trained on the safe use of pesticides and protected from exposure, the health and safety of workers, families and communities across the country is at risk. These rules were strengthened to prevent farmworker poisonings and pesticide misuse that led to serious harm for hundreds of

[3] https://law.resource.org/pub/us/case/reporter/F2/520/520.F2d.1161.74-2062.html
[4] https://www.govinfo.gov/content/pkg/FR-2015-11-02/pdf/2015-25970.pdf
[5] https://www.govinfo.gov/content/pkg/FR-2017-01-04/pdf/2016-30332.pdf

homeowners and their families, and resulted in the tragic deaths of children. The "WPS" protects approximately 2.5 million workers and pesticide handlers, including hundreds of thousands of minors that labor in farms, fields, nurseries, greenhouses and forests. The "CPA" rule governs the training and certification requirements of nearly 1 million workers who apply Restricted Use Pesticides (RUPs) in, on, or around settings such as homes, schools, hospitals and industrial establishments. RUPs are the most toxic pesticides in the country, they are not available to the general public and can only be applied by certified pesticide applicators.

Recognizing the urgency to protect workers and broader public, for years, we urged the EPA to strengthen these rules and were gratified when it did so -- updating the WPS in 2015 and the CPA Rule in early 2017. Recently, we were heartened by House and Senate leadership, congressional appropriators and authorizing committees (House and Senate Agriculture, and House Energy and Commerce) for their bipartisan and unanimous support of S. 483, the Pesticide Registration Improvement Act of 2019 ("PRIA 4"). PRIA 4 provides the Environmental Protection Agency (EPA) with more resources to evaluate pesticide registrations and ensures the protection of farmworkers, pesticide applicators and consumers who are exposed to pesticides in agricultural, residential, and commercial settings. Since the bill became law last Friday, March 8, 2019, we plan to hold the EPA accountable to its implementation.

Beyond the statistics and acronyms, for our union, at the heart of these regulations are countless incidents of workers who have experienced pesticide poisoning, pregnant women who have suffered miscarriages, and parents whose children are dealing with learning disabilities and other health impairments. These safeguards are for a mother and daughter pair named Lucia, for Vicenta, for Aylin, and Bircmary who were working in a cabbage field when they noticed a strong odor and an odd taste in the back of their throats. Their lips began to numb up. Their skin became itchy and their eyes watered. They tell us that a headache set in quickly, followed by coughing and vomiting. They tried to continue working until Bircmary, a 37 year old mother of three kids, collapsed to the ground and started convulsing. This incident happened on May 5, 2017, in Kern County, California. We later found out that the women had been exposed to chlorpyrifos.

Chlorpyrifos Poses Risks of Concern To Workers And Agricultural Communities

Chlorpyrifos is acutely toxic. Prenatal exposures to chlorpyrifos are associated with lower birth weight, reduced IQ, loss of working memory, attention disorders, and delayed motor development. And what happened to Lucia, Aylin, Lucia, Vicenta and Bircmary is consistent with what we know about acute poisonings related to this pesticide. It's ability to suppress the enzyme that regulates nerve impulses in the body and cause convulsions. It can also cause respiratory paralysis, and, in extreme cases, death.

Chlorpyrifos is a Restricted Use Pesticide (RUP)[6], and one of two dozen organophosphate (OPs) pesticides that are widely used on crops like citrus, apples, broccoli and grapes. Alarmingly, this class of neurotoxic chemicals originally developed by the Nazis during World War II to serve as nerve gas agents. After the war, chemical companies repurposed the OPs to be used as pesticides, primarily as insecticides, for residential, commercial and agricultural uses. In the year 2000, residential uses of chlorpyrifos ended after EPA found unacceptable risks to kids. Somehow, it was unacceptable to expose kids to chlorpyrifos in their homes but it was acceptable for workers, kids and families in agricultural communities to bear the brunt of the exposure.

The Scientific Evidence About the Dangers of Chlorpyrifos is "Unambiguous"

The American Academy of Pediatrics has reported, "There is a wealth of evidence demonstrating the detrimental effects of chlorpyrifos exposure to developing fetuses, infants, children, and pregnant women." The American Academy of Pediatrics has noted that the scientific consensus about the harms of chlorpyrifos is "unambiguous."

The Center for Environmental Research and Children's Health at the University of California's Berkeley's School of Public Health found that children exposed to chlorpyrifos while their mothers were pregnant were associated with poorer intellectual development.

[6] https://www.epa.gov/sites/production/files/2017-10/documents/rup-report-oct2017.pdf

EPA's Own Risk Assessments of Chlorpyrifos Document Health Risks That Exceed EPA's Levels of Concern

In December 2014, the Environmental Protection Agency (EPA) released its revised human health risk assessment for chlorpyrifos and found that:

- the extensive body of peer-reviewed science correlated chlorpyrifos exposure with brain damage to children and that the brain damage occurred at exposures far below EPA's regulatory endpoint based on acute pesticide poisoning risks
- in treated drinking water, chlorpyrifos transforms to the more toxic chlorpyrifos oxon via the chlorination process and the primary source of risk comes from chlorpyrifos and chlorpyrifos oxon in drinking water in highly vulnerable watersheds, highly-cropped areas, and small watersheds where the land is agricultural and could be treated with chlorpyrifos
- acute poisoning risks of concern to workers from over 200 activities, including mixing and loading various pesticide formulations, airblast, aerial, and groundboom spraying, and re-entering fields after spraying to perform tasks like thinning, irrigating, and hand harvesting.

In November 2016, EPA released a revised human health risk assessment for chlorpyrifos that confirmed that there are no safe uses for the pesticide. EPA found that:

- All food exposures exceed safe levels, with children ages 1–2 exposed to levels of chlorpyrifos that are 140 times what EPA deems safe
- There is no safe level of chlorpyrifos in drinking water
- Pesticide drift reaches unsafe levels at 300 feet from the field's edge
- Chlorpyrifos is found at unsafe levels in the air at schools, homes, and communities in agricultural areas
- All workers who mix and apply chlorpyrifos are exposed to unsafe levels of the pesticide even with maximum personal protective equipment and engineering controls
- Field workers are allowed to re-enter fields within 1–5 days after pesticide spraying, but unsafe exposures continue on average 18 days after applications.

Personal Protective Equipment (PPE) is Inadequate to Protect Workers from Unsafe Levels of Chlorpyrifos

A bedrock principle of occupational hygiene is the "hierarchy of controls," which is used by the Occupational Safety and Health Administration (OSHA) and others to identify options for controlling exposures to occupational hazards. The hierarchy prioritizes elimination of the hazardous agent or substitution of a less hazardous agent. These are preferable to the implementation of engineering controls, which in turn are preferable to requiring personal protective equipment. For workers who are protected by OSHA, personal protective equipment is always the mitigation measure of last resort. When it comes to protecting workers from pesticides, EPA is in charge and the agency starts by considering personal protective equipment, then considers engineering controls, and never considers substitution with less toxic options or practices.

However, when EPA reviews a pesticide to determine whether it meets the statutory safety standards, it conducts a series of risk assessments addressing food, drinking water, drift and volatilization exposure to children, bystanders, and workers. As its standard approach in assessing worker risks, EPA identifies risk levels of concern to workers and determines whether workers will be exposed to levels of chlorpyrifos that exceed those risk levels. For pesticide handlers, if it finds risks of concern, EPA first tries to reduce the risks through the use of protective clothing and gear. If the risks of concern are not eliminated, EPA then considers requiring engineering controls, like closed mixing systems. If none of these strategies eliminates the risks of concern, EPA will consider reducing application rates or eliminating the application method. For risks of concern to field workers, EPA uses restricted re-entry intervals to keep field workers out of the fields until exposures will be reduced. Only if re-entry intervals cannot eliminate the risks of concern will EPA consider stopping the activity or the use of the pesticide. This is the inadequate and underprotective methodology that EPA has used to assesses worker risks from chlorpyrifos and the other organophosphates.

Workers are exposed when they handle pesticides and when they re-enter treated fields. EPA's 2016 Revised Risk Assessment for chlorpyrifos shows that workers are exposed to unsafe levels of the pesticide even with maximum protective equipment. Workers, their children, and other bystanders are exposed to chlorpyrifos through drift and volatilization, as well as on their food and

in the water they drink. Moreover, PPE cannot safeguard pregnant workers from exposures that can cause brain damage to their unborn children.

Chlorpyrifos has repeatedly been among the top pesticides causing acute pesticide poisonings of workers, their families, and others who live near places where it is applied. Year after year, chlorpyrifos has been identified as one of top five pesticides associated with poisonings in many states. California's pesticide exposure incident database contains 289 definite, probable, or possible chlorpyrifos exposure incidents from 2001 through 2013.

The actual incidence of chlorpyrifos poisonings is much higher due to under-reporting of pesticide incidents. EPA has acknowledged that "[u]nderreporting of pesticide incidents is a challenge," and assumes that only 25% of acute pesticide incidents are reported.[7] Farmworkers are deterred from reporting pesticide illnesses due to fear of retaliation, health care workers often lack the training to diagnose illnesses from pesticide exposures, and there is no national pesticide incident reporting system that could be utilized by clinicians and others who work with farmworkers.
In October 2015, EPA proposed to revoke all chlorpyrifos tolerances on our food, in response to the agency's scientific findings that chlorpyrifos is unsafe. Despite a series of findings that chlorpyrifos is unsafe, on March 29th, 2017, two days before Cesar E. Chavez's birthday, EPA reversed course and refused to ban food uses of chlorpyrifos. Instead, the agency said it will continue to examine chlorpyrifos tolerances as part of the pesticide registration review process to be completed by 2022.

EPA is Ignoring Science and The Law, And Congress Must Act

The UFW --along with farmworker, labor, civil rights, health and environmental organizations— are fighting in the courts for protections. In August 2018, as a result of our lawsuit and based on the overwhelming evidence that chlorpyrifos is unsafe for public health, and particularly harmful to children and farm workers, the 9th Circuit Court of Appeals ordered EPA to ban chlorpyrifos,

[7] Worker Protection Standard Revisions, 79 Fed. Reg. 15,444, 15,453, 15,459 (Mar. 19, 2014). Focus groups conducted by the Washington Department of Health revealed that 75% of the workers reported that they or someone close to them had become ill from pesticides at work and often they did not seek medical care because they could not afford losing wages, feared losing their jobs, didn't know worker's compensation would pay for the visit, or mistrusted the health care providers as being aligned with the employers. Washington State Department of Health, Learning from Listening: Results of Yakima Farmworker Focus Groups About Pesticides and Health Care (2004).

stating that ''the time has come to put a stop to this patent evasion'' of the law. To postpone the effectiveness of the court order, EPA asked the court to re-hear the case. Our attorneys at Earthjustice will be back in the 9th Circuit on March 26th, 2019 to urge the court to put an end to EPA's disregard for the developing brains of America's children and the health and safety of farmworker families and agricultural communities.

It has been nearly two years since EPA so blatantly ignored science and their duty to protect human health and the environment from this nerve agent pesticide. We are working to force EPA to comply with the law and protect our communities and children, and we urge Congress to intervene with legislative action.

EPA is Not Considering How Climate Change and The Risks Of Heat-Related Illness Associated with PPE Affect Farmworkers

Farm workers experience some of the highest rates of heat-related illness in the country. The risk of heat-related death in crop workers is 20 times higher than the risk in workers overall.[8] When workers apply pesticides, they must do so wearing any personal protective equipment required by EPA. The Agency has acknowledged that use of such equipment when working in hot temperatures increases the risk of heat-related illness. Yet EPA does not evaluate this risk when conducting occupational risk assessments for pesticides that assume varying levels of personal protective equipment.

EPA Makes Erroneous Assumptions About Pesticide Use And Farmworker Exposures

When it updated the WPS, EPA made clear that its pesticide risk assessments are premised on the assumption that pesticides will be used according to their respective labels, which includes a prohibition on direct spraying of workers and bystanders with pesticides. EPA's pesticide risk assessments and registration decisions do not take into account the inevitability that pesticides will be "misused" and people will be sprayed with these chemicals. This brings me to the importance of the Application Exclusion Zone (AEZ). The AEZ is a provision of the 2015 WPS and it requires

[8]See Larry L. Jackson & Howard R. Rosenberg, Preventing Heat-Related Illness Among Agricultural Workers, 15 J. Agromedicine 200 (2010) [attached as Exhibit 21] ("The crop worker fatality rate averaged 4 heat-related deaths per one million workers per year—20 times higher than the 0.2 rate for US civilian workers overall.").

the commonsense precaution that if someone is applying pesticides and sees workers or others around the equipment, they must avoid spraying them by suspending the application and resuming only after the non-trained and unprotected person leaves the area. The idea that pesticide applicators should avoid spraying pesticides when there are people in harm's way is an unquestionably sound policy from the standpoint of human health and human rights. Yet, pursuant to PRIA 4, the Trump Administration may reconsider and revise the AEZ. For the sake of workers and agricultural communities, we urge members of Congress to follow any revisions to the AEZ closely, to weigh in during the public comment period, and oppose any proposals that fail to protect workers and bystanders from occupational exposures and toxic drift.

Conclusion:

To protect children, farmworkers, agricultural communities and consumers from pesticide exposure and other hazards, we urge Congress to:

- Hold EPA accountable to the implementation of the Agricultural Worker Protection Standard (WPS) and the Certification of Pesticide Applicators (CPA) rule
- Ban all uses of chlorpyrifos by supporting H.R.230--The Ban Toxic Pesticides Act of 2019--a bill led by Congresswoman Nydia Velázquez that currently counts with 81 co-sponsors
- Urge the EPA Office of Chemical Safety and Pollution Prevention ("OCSPP") to prioritize review of the most toxic pesticides that are widely used on (organophosphates)
- Direct the EPA OCSPP to follow the hierarchy of controls when selecting options to reduce occupational risk from pesticides, and
- Direct the EPA OCSPP to assess the risk of heat-related illness associated with any and all personal protective equipment that the Agency assumes that workers will wear when conducting occupational risk assessments for pesticides

Thank you.

Mr. TONKO. Thank you, Mr. Kashkooli.

Next, we will move to Mr. Tom Grumbles on behalf of AIHA.

Welcome.

STATEMENT OF THOMAS G. GRUMBLES

Mr. GRUMBLES. Good morning. My name is Tom Grumbles. Thank you for the opportunity to be here today.

I am here to share my experience from 40-plus years as a certified industrial hygienist practicing occupational health and safety in the workplace prior to my retirement in April 2018.

In addition to my direct work experience, I spent many years working with professional organizations focused on industrial hygiene and worker protection. I am a past president of the American Industrial Hygiene Association and of the International Occupational Hygiene Association.

I also was a founding board member and past president of the Product Stewardship Society. I am currently a board member of the American Board of Industrial Hygiene, the group that administers professional certification programs for the profession.

I served in leadership capacity within industry trade associations as well. Through many years of engagement in these different groups, I grew to understand the practice of industry as a whole, not just my company.

What I want to describe here today is what I have seen related to safety data sheets and personal protective equipment in the workplace. This is important to me in light of recent trade journal articles questioning EPA's ability to protect workers form chemical risk and the misperception that a SDS—or that SDSs are not followed and have no effect.

Contrary to press accounts, I believe SDSs have a critical role in the safety of workers' daily life. Based on my experience, which I believe to be pretty standard industry practice, this is what happens when an SDS for a chemical is introduced into the workplace.

A hazard assessment is developed that informs the need for additional training, workplace labelling, changes in standard operation procedures, additional engineering controls, and PPE needs.

And yes, SDSs are made readily available to workers. SDSs are more than just a document to be read. The SDS is a catalyst for hazard assessments that ultimately guide how workers' safety and health will be achieved in the workplace.

In my experience, the SDS development process for any chemical is rigorous and involves multi-tiered reviews including research and development groups, toxicology, and transportation departments.

In my view, SDSs have improved dramatically with the implementation of HazCom 2012 by OSHA. This standard is utilized to globally harmonize a system for classification and labelling, to drive content and format improvements, hazard classification practices, and hazard communication through labels and, for the first time, symbols.

Regarding the effectiveness of PPE used in the workplace to control exposures, OSHA regulations require that a hazard determination for PPE selection be done. In addition, the employer shall verify that the required workplace hazard assessment has been

performed through a written certification that identifies the workplace evaluated, the person certifying that the evaluation has been performed, the dates of the hazard assessment, and which identifies the document as a certification of hazard assessment.

The OSHA requirement creates an effective PPE selection process that is documented and verifiable. In fact, OSHA's statistics dating back to the 1970s shows less than 1 percent of violations to the lack of eye protection, lack of general dermal protection, and lack of or inappropriate glove use, despite the fact that these violations are relatively easy to observe by an inspector.

This confirms that workers are wearing PPE and compliance with those requirements in the workplace is likely.

I hope this helps inform the discussion this morning regarding the collaborative relationship between EPA and OSHA in protecting worker health and safety. Clearly, there is work to be done to get that better defined.

Thank you for the opportunity to share my perspective with you this morning.

[The prepared statement of Mr. Grumbles follows:]

Testimony of
Thomas G. Grumbles, CIH

Submitted on March 12, 2019
To
House Energy and Commerce Subcommittee on Environment and Climate Change
U.S. House

Good morning. My name is Tom Grumbles. Thank you for the opportunity to be here today.

I am here to share my experience from 40+ years as a certified industrial hygienist practicing occupational health and safety in the workplace, prior to my retirement in April 2018.

In addition to my direct work experience, I spent many years working with professional organizations focused on industrial hygiene and worker protection. I am a past President to the American Industrial Hygiene Association (AIHA) and the International Occupational Hygiene Association. I also was a founding board member and former President of the Product Stewardship Society. I am also a current board member of the American Board of Industrial Hygiene.

I served in a leadership capacity within industry trade associations as well. Through my years of engagement with these different groups, I grew to understand the practices of the industry as a whole.

What I want to describe here today is what I have seen related to safety data sheets (SDSs) and personal protection equipment (PPE) in the workplace. This is important to me in light of recent trade journal articles questioning the U.S. Environmental Protection Agency's (EPA) ability to protect workers from chemical risks and the misperception that SDSs are not followed and have no effect.

Contrary to press accounts, SDSs have a critical role in the safety of a worker's daily life.

Based on my experience, which I believe to be standard industry practice, this is what happens when an SDS for a chemical is introduced into the workplace. A hazard assessment is developed that informs the need for:

1. Additional training;
2. Workplace labeling;
3. Changes in standard operating procedures;
4. Additional engineering controls; and
5. PPE needs.

And yes, SDSs are made readily available to workers. SDSs are more than just a document to be read. The SDS is a catalyst for hazard assessments that ultimately guide how worker safety and health will be achieved.

In my experience, the SDS development process for any chemical is rigorous and involves multi-tiered reviews -- including research and development (R&D), toxicology, and even transportation. In my view, SDSs have improved dramatically upon implementation of HazCom 2012. This standard utilized the Globally Harmonized System for Classification and Labeling (GHS) to drive content and format, hazard classification, and hazard communication through labels and symbols.

Regarding the effectiveness of PPE used in the workplace to control exposures, regulation requires a hazard determination for PPE selection. Further, "[t]he employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment."

This U.S. Occupational Safety and Health Administration (OSHA) requirement creates an effective PPE selection process that is documented and verifiable. In fact, OSHA statistics support this. The OSHA database of 12 million violations dating back to the 1970s shows less than one percent of violations related to lack of eye protection, lack of general dermal protection, and lack of glove use (or inappropriate glove use), despite the fact that these violations are relatively easy to observe. This confirms that workers are wearing PPE and compliance is likely.

I hope this helps inform the discussion this morning regarding the collaborative relationship between EPA and OSHA in protecting worker health and safety.

Thank you for the opportunity to share my perspective with you this morning.

Mr. TONKO. Thank you very much for your comments.

Next, we will move to Mr. Mark Duvall of Beveridge and Diamond PC.

Welcome.

STATEMENT OF MARK N. DUVALL

Mr. DUVALL. Thank you. I would like to thank the chairman, the ranking member, and members of this subcommittee for the opportunity to testify.

I am Mark Duvall, a principal in the law firm of Beveridge and Diamond. My testimony relates to actions by EPA under TSCA to protect workers, particularly since enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act on June 22nd, 2016.

EPA has always had worker protection among its high priorities, particularly since most of the chemicals that are reviewed under TSCA are industrial chemicals to which primarily workers are exposed, or potentially exposed.

But the 2016 amendments amended TSCA in a number of ways including by making worker protection an even higher priority by requiring, as the chairman said, consideration of potentially exposed or susceptible subpopulations, a term which is defined to include workers.

But this obligation to protect workers is risk based. It does not require EPA to protect workers without regard to the particular conditions of use, i.e., on the basis of hazard alone. Instead, every risk determination that EPA makes under TSCA must consider risk in light of the applicable conditions of use including the circumstances under which a chemical is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used or disposed of.

Thinking about new chemicals first, EPA has always made and continues to make worker protection one of the key considerations. Indeed, many in industry believe that EPA goes too far being unduly conservative in its Section 5 risk evaluations.

Under the new chemicals review program since enactment of the statute EPA has granted—since enactment of the 2016 amendments, EPA has granted 824 exemption applications. Those exemption applications come with restrictions. Each of the 824 granted applications has worker protection requirements.

EPA has also imposed worker protection requirements on many submitters of pre-manufacture notices, or PMNs, in the form of an order that includes requirements for particular kinds of respirators, gloves, and protective clothing and specific hazard communication requirements.

EPA has then mostly extended those requirements to other manufacturers and processors through proposed or final significant new use rules. EPA has adopted 463 final rules that incorporate worker protection provisions and 404 final rules that incorporate hazard communication requirements.

These requirements are tied to OSHA's requirements on respirators, other uses of personal protective equipment, and hazard communication.

Since enactment of the 2016 amendments, EPA has made 564 final determinations on PMN substances not counting those that were invalid or withdrawn, and issued orders restricting 441 of those, or 78 percent of the total.

Thus, almost four out of every five chemicals reviewed in the new chemicals review program is regulated, a dramatic shift from the situation prior to enactment of the amendments when only about one out of every five that completed EPA review was regulated.

EPA has also initiated or completed significant new use rulemaking for 378 PMN chemicals, or 85 percent of the total, that have received an order since enactment of the amendments.

Turning to existing chemicals—methylene chloride—EPA should any day now be publishing a final rule on methylene chloride. We will learn the nature of the final rule and any additional rulemaking shortly. At the moment, none of us knows what EPA—what the rule will include.

Regardless of what is in that rule, EPA's actions will supplement OSHA's occupational health standards on methylene chloride, both the general industry standard and the construction standard.

Those standards set mandatory requirements on permissible exposure limits, exposure monitoring in regulated areas, methods of compliance, respirators, protective work clothing and equipment, hygiene facilities, medical surveillance, hazard communication, employee information and training, and record keeping.

They will also supplement EPA's NESHAP—the National Emissions Standard for Hazardous Air Pollutants—for paint stripping and miscellaneous surface coatings, which require commercial paint stripping operations using methylene chloride to institute management practices including to ensure that there is not an alternative technology that can be used and to reduce inhalation exposure. EPA is also working on other aspects of methylene chloride.

On asbestos, EPA banned most uses of asbestos in 1989 but in 1991 a court overturned that ban. That development led to enactment of the Lautenberg amendments 25 years later.

In June of last year, EPA proposed a significant new use rule for 14 former uses of asbestos. The final rule is expected this year. Once final, that rule will achieve much of what EPA's 1989 ban on asbestos was intended to achieve but could not, due to the court decision.

It will effectively ban many of the uses listed in the 1989 rule as well as several others, thus preventing their recommencement without advanced EPA review and approval.

EPA is also working to publish the risk evaluation for certain ongoing uses of asbestos with statutory deadlines. The scope document——

Mr. TONKO. Mr. Duvall, if you could wrap up, please.

Mr. DUVALL. I will.

The short answer is EPA has much work to do but its work will include attention to worker protection.

Thank you.

[The prepared statement of Mr. Duvall follows:]

Testimony of Mark N. Duvall
Beveridge & Diamond, P.C.

Hearing on "Mismanaging Chemical Risks: EPA's Failure to Protect Workers"

Before the House Committee on Energy & Commerce
Subcommittee on Environment & Climate Change

March 13, 2019

I would like to thank the Chairman, the Ranking Member, and members of this subcommittee for the opportunity to testify today. I am Mark Duvall, a principal in the law firm Beveridge & Diamond, P.C. I have advised clients on chemical-related regulatory issues under both the Toxic Substances Control Act (TSCA) and the Occupational Safety and Health Act of 1970 for many years.

My testimony will relate to actions by the Environmental Protection Agency (EPA) to protect workers under TSCA, particularly since enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act (LCSA) on June 22, 2016. I will also refer to requirements of the Occupational Safety and Health Administration (OSHA).

1. EPA's Obligation to Protect Workers

In my view, EPA has always had worker protection among its highest priorities under TSCA. This arises in part from the fact that most chemical substances considered by EPA under TSCA are industrial chemicals to which consumers have little or no exposure. As a result, EPA has always been considering worker protection.

The LCSA amended TSCA in many ways, including by making worker protection a key consideration as EPA carries out its responsibilities. EPA now must make determinations concerning the risks presented by chemical substances, including risks to:

> a potentially exposed or susceptible subpopulation identified as relevant by the Administrator under the conditions of use.

Having made a particular risk determination, EPA must take prescribed actions to protect health and the environment, including the health of potentially exposed or susceptible subpopulations. Section 3(12) defines that term to include workers. The term means:

> a group of individuals within the general population identified by the Administrator who, due to either greater susceptibility or greater exposure, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture, such as infants, children, pregnant women, workers, or the elderly.

In short, EPA is statutorily required to redress risks to workers that it determines are unreasonable or may be unreasonable.

This obligation is risk-based. It does not require EPA to protect workers without regard to the particular conditions of use, i.e., on the basis of hazard alone. Instead, every risk determination must consider risk in light of the applicable "conditions of use." Section 3(4) defines that term to mean:

> the circumstances, as determined by the Administrator, under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of.

2. Worker Protection for New Chemical Substances

Worker protection has been an important consideration in EPA's review of applications under TSCA section 5 for new chemical substances, i.e., those not on the TSCA Inventory, as well as related rulemaking and issuance of orders.

a. Exemption Applications

Under the New Chemicals Review Program, since enactment of the LCSA through February 26, 2019, EPA has granted 824 applications for low volume exemptions or low release – low exposure exemptions, and it has denied 128 of those applications. Each of the 824 granted applications has worker protection requirements. The applications must include information on what worker protections will be used by the submitter. Those protections become mandatory once EPA grants the application.

b. PMN Substances for Which EPA Imposes Restrictions

Under TSCA section 5(a)(3)(A) and (B), EPA must impose restrictions through a section 5(e) order or action under section 5(f) if it determines that a PMN substance may present or presents an unreasonable risk to workers or others under the conditions of use.

EPA has imposed worker protection requirements on many submitters of premanufacture notices (PMNs) in the form of a section 5(e) or a section 5(f) order. EPA has then mostly extended those requirements to other manufacturers and processors of the PMN substance through proposed or final significant new use rules (SNURs). Prior to enactment of the LCSA, EPA also adopted SNURs without first issuing a section 5(e) order or a section 5(f) order. Those SNURs applied both to the PMN submitter and to other manufacturers and processors of the SNUR substance.

Over the years, EPA has adopted 463 final SNURs that incorporate by reference worker protection provisions listed in 40 C.F.R. § 721.63, such as particular kinds of respirators, gloves, and protective clothing. In these SNURs, EPA has supplemented applicable OSHA requirements to mandate particular kinds of respirators and protective clothing. In some cases, it has set exposure limits and related monitoring requirements if companies can establish that exposure levels are low enough that respirators are not necessary.

EPA has adopted 404 final SNURs that incorporate by reference hazard communication requirements listed in 40 C.F.R. § 721.72. In these SNURs, EPA has gone beyond OSHA's general hazard communication standard to mandate identification of particular hazards and protective measures.

These worker protection and hazard communication provisions are tied to OSHA's standards on respirators, other kinds of personal protective equipment, and hazard communication. EPA expects to update its regulations on worker protection and hazard communication later this year, based on a proposed rule published shortly after enactment of the LCSA. 81 Fed. Reg. 49598 (July 28, 2016). In addition, some SNURs limit the manufacture, processing, or use of the SNUR substance in a particular physical form, such as a powder, vapor, mist, aerosol, or dust, or effectively require the use of enclosed processes. All of those SNUR requirements are intended to protect workers.

Since enactment of the LCSA through February 10, 2019, EPA has made 564 final determinations for PMN substances, not counting PMNs that were invalid or withdrawn. EPA has issued section 5(e) or section 5(f) orders restricting 441 of those PMN substances, or 78% of the total. Many of those orders contain worker protection requirements. Thus, almost 4 out every 5 PMN substances that receive a final determination are regulated. This represents a dramatic shift from the situation prior to enactment of the LCSA, when only about 1 out of every 5 PMN substances that completed EPA review was regulated.

Also since enactment of the LCSA, EPA has initiated or completed SNUR rulemaking for 378 PMN chemicals for which it had issued section 5(e) or section 5(f) orders after the enactment date, or 85% of the total through February 10, 2019. Those SNURs extend, or propose to extend, the restrictions in those orders to all other manufacturers and processors of those chemicals.

c. PMN Substances for Which EPA Does Not Impose Restrictions

Under section 5(a)(3)(C), EPA need not impose restrictions if it determines that a PMN substance is not likely to present an unreasonable risk to workers or others under the conditions of use.

EPA has determined that a PMN substance is not likely to present an unreasonable risk in 123 cases since enactment of the LCSA through February 10, 2019. In some of those cases, EPA based that determination on a finding that the substance has a low hazard to human health, such that it is not likely that workers would face an unreasonable risk regardless of the level of their exposure to the PMN substance.

In some other cases, EPA determined that the PMN substance had human health hazards, but the substance was not likely to present an unreasonable risk because the exposure to workers and others was low without regard to the use of personal protective equipment. Examples are the October 13, 2018 determination for PMNs P-18-0224 and -0225, and the December 20, 2019 determination for PMN P-19-006.

In yet other cases, EPA has made a "not likely to present" determination based in part on information about intended use of personal protective equipment (PPE) to control exposure to a safe level, as stated in the PMN or amended PMN. For example, in the February 13, 2019 determination for PMN P-18-0238, EPA found that:

> Risks will be mitigated if exposures are controlled by the use of appropriate PPE, including impervious gloves. EPA expects that workers will use appropriate personal protective equipment (i.e., impervious gloves), consistent with the Safety Data Sheet prepared by the PMN submitter, in a manner adequate to protect them.

In making its risk determinations, EPA must consider the intended conditions of use – in this case, the PMN submitter's intention to use impervious gloves and its recommendation to downstream employers to do the same. Here, the PMN submitter recommended use of impervious gloves in the safety data sheet (SDS) it will provide to its employees and customers. The OSHA hazard communication standard, 29 C.F.R. § 1910.1200, Appendix D, requires chemical manufacturers to indicate on their SDSs appropriate individual protective measures, such as PPE. Each PMN contains a certification requirement, where a responsible official of the PMN submitter swears on penalty of perjury that the information in the PMN, including its description of intended use of PPE, is truthful.

In addition to considering the PMN submitter's intended conditions of use, EPA must also consider "reasonably foreseen" uses. It is certainly possible that some employers might not require their workers to use impervious gloves when handling this PMN substance. EPA evidently considered that this possibility is speculative, not "reasonably" foreseeable, given the OSHA requirements applicable to all manufacturers and processors of PMN substances.

Here, as elsewhere, EPA has apparently based its "not likely to present" finding in part on the reasonable assumption that employers will comply with applicable OSHA requirements, and that compliance with OSHA requirements means that the PMN substance is not likely to present an unreasonable risk to workers. OSHA's glove use requirements appear in 29 C.F.R. § 1910.38, which provides in part:

> (a) *General requirements.* Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances ....
>
> (b) *Selection.* Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

Other "not likely to present" determinations have been based on EPA's expectation that additional kinds of PPE would be used. For example, the December 20, 2018 determination for PMN P-0324, stated:

> EPA expects that workers will use appropriate personal protective equipment (i.e., impervious gloves, respirator and eye protection), consistent with the Safety Data Sheet prepared by the PMN submitter, in a manner adequate to protect them. Therefore, EPA does not expect unreasonable risk to workers.

OSHA also has mandatory standards on respiratory protection, 29 C.F.R. § 1910.134, and eye protection, 29 C.F.R. § 1910.133. Both standards require employers to select and mandate the use of PPE based on chemical hazards and the work tasks to be done.

These requirements to use impervious gloves, respirators, and eye protection when needed also arise from OSHA's general PPE standard, 29 C.F.R. § 1910.132. Paragraph (a) imposes a broad requirement to use appropriate PPE whenever necessary:

> **Protective equipment**, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, **shall be provided, used, and maintained** in a sanitary and reliable condition **wherever it is necessary by reason of** hazards of processes or environment, **chemical hazards**, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(Emphasis added.) How is the employer to know what PPE is necessary? Paragraph (d) requires employers to assess the hazards that may be present in the workplace (and SDSs would be part of that consideration); to supply appropriate PPE; and to require its employees to use that PPE. Employers must also verify that this required workplace hazard assessment has been performed through a written certification, which must be available for review by OSHA.

In light of these applicable OSHA PPE requirements, EPA concluded that the PMN substances for which it made "not likely to present" determinations were not likely to present an unreasonable risk even in the absence of a section 5(e) or section 5(f) order or a SNUR.

d. PMN Substances for Which EPA Imposes Restrictions Only Through SNURs

Since enactment of the LCSA, EPA has made a "not likely to present" determination for 13 PMN substances but also proposed SNURs for those substances, 83 Fed. Reg. 52179 (Oct.16, 2018). They are the following:

- For PMN P-16-0192, the PMN submitter intended to manufacture a silanized amorphous silica, which would present low hazard for lung effects. The proposed SNUR would make manufacture of the substance in other than an amorphous form (e.g., a crystalline form) a significant new use.

- For PMNs P-16-0354 and -0355, the PMN submitter intended to manufacture the PMN substance in a manner with no potential for inhalation. The proposed SNUR would make the manufacture, process, or use the substances in any manner that results in inhalation exposure a significant new use.

- For PMNs P-0380 to -0385, the PMN submitter intended to manufacture the PMN substance using engineering controls that prevent an inhalation hazard. The proposed SNUR would make manufacture, processing, or use the substance in any manner that results in inhalation exposure a significant new use.

- For PMNs P-16-0483 and -0484, the PMN submitter intended to manufacture the PMN substance using engineering controls that prevent an inhalation hazard. The proposed SNUR would make manufacture without those engineering controls a significant new use.

- For PMN P-16-0575, the PMN submitter intended to manufacture the PMN substance in a manner with no potential for inhalation. The proposed SNUR would make use involving an application method that generates a vapor, mist, aerosol, or dust a significant new use.

- For PMN P-16-0581, the PMN submitter intended to manufacture the PMN substance without generating respirable particles. The proposed SNUR would make manufacture of the substance with particles having a size less than 10 micrometers a significant new use.

In each case, EPA based its "not likely to present" determination on either the form of the PMN substance intended by the PMN submitter or the engineering controls that the PMN submitter intended to use. These are very difficult for the PMN submitter to change in the short term, even it wanted to do so. Thus, any section 5(e) order issued to the PMN submitter would have had no effect on worker protection or other risks from the PMN submitter's short-term actions.

EPA issues a section 5(e) order only to the PMN submitter. The order does not affect other manufacturers and processors of the PMN substance. A section 5(e) order must impose restrictions "to the extent necessary to protect against an unreasonable risk ... under the conditions of use." In each of these 13 cases, in EPA's eyes the PMN submitter's proposed actions presented no short-term unreasonable risks, and thus an order to the PMN submitter would not have been "necessary to protect against an unreasonable risk" during the time before EPA could adopt a final SNUR. Of course, EPA must also consider risks arising from reasonably foreseen uses. EPA found that it was reasonably foreseeable that in the long-term, other manufacturers or processors could use a different form or different engineering controls, or that the PMN submitter could do so. Thus, EPA concluded that it was appropriate to propose SNURs for these 13 substances. Once final, the SNURs will apply to the PMN submitters and will prevent any manufacturer or processor from engaging in the listed significant new uses without prior EPA review and approval.

3. Worker Protection for Existing Chemicals

EPA is also considering worker protection as it carries out its responsibilities with respect to existing chemicals.

a. Methylene Chloride

On the last day of the previous Administration, EPA published a proposed rule under TSCA section 6 that would prohibit the manufacture, processing, and distribution of methylene chloride for consumer use and most types of commercial paint and coating removal. 82 Fed. Reg. 7464 (Jan. 19, 2017). Under the current Administration, EPA has considered the comments received and is moving forward to promulgate a final rule. EPA sent a draft final rule to OMB on December 21, 2018, which completed its review on March 11, 2019. Publication of the final rule is expected soon.

According to the OMB website, in addition to at least a partial ban, EPA plans to propose a program for commercial paint and coating removal training, certification, and limited access. We will know the nature of the final rule and this program shortly.

Regardless, EPA's actions will supplement OSHA's occupational health standards on methylene chloride, 29 C.F.R. § 1910.1052 (general industry) and 29 C.F.R. § 1926.1152 (construction industry). These OSHA standards set mandatory requirements on permissible exposure limits; exposure monitoring; regulated areas; methods of compliance; respirators; protective work clothing and equipment; hygiene facilities; medical surveillance; hazard communication; employee information and training; and recordkeeping.

They will also supplement EPA's NESHAP for paint stripping and miscellaneous surface coating operations at area sources, 40 C.F.R. Part 63, Subpart HHHHHH. These standards require commercial paint stripping operations using methylene chloride to institute management practices, including to ensure that there is not alternative paint stripping technology that can be used and to reduce inhalation exposure to paint strippers.

EPA is also working to publish a proposed risk evaluation for other uses of methylene chloride, an evaluation that is directed at worker protection as well as consumer protection. EPA's statutory deadline for issuing the final risk determination is December 19, 2019. If it determines that one or more conditions of use presents an unreasonable risk, EPA will promulgate a final risk management rule within 2 years of the final risk determination. Under section 6(a), a rule must impose a ban or restrictions "to the extent necessary so that the chemical substance or mixture no longer presents [an unreasonable] risk."

b. Asbestos

In 1989, EPA banned most uses of asbestos, but in 1991, a court overturned that ban. That development was a key influence leading to enactment of the LCSA 25 years later.

In June 2018, EPA proposed a SNUR under section 5(a)(2) for 14 former uses of asbestos. 83 Fed. Reg. 26922 (June 11, 2018). EPA had projected publication of the final SNUR in January 2019. It is expected soon also. Once final, this SNUR will finally achieve much of what EPA's 1989 ban on asbestos was intended to achieve but could not, due to the court decision. It will effectively ban many of the uses listed in the 1989 rule as well as several others that have ceased in the U.S., thus preventing their recommencement without advance EPA review and approval.

EPA is also working to publish a proposed risk evaluation for certain ongoing uses of asbestos, an evaluation that is primarily directed at worker protection. EPA's statutory deadline for issuing the final risk determination is December 19, 2019. If it determines that one or more conditions of use presents an unreasonable risk, EPA will promulgate a final risk management rule within 2 years of the final risk determination. Under section 6(a), a rule must impose a ban or restrictions "to the extent necessary so that the chemical substance or mixture no longer presents [an unreasonable] risk."

The scope document for the asbestos risk evaluation indicated that EPA would not address legacy uses, such as asbestos-containing materials that remain in older buildings or are part of older products still in use but which are no longer in commerce. It would also not address disposal of legacy uses of asbestos. This approach is currently being litigated in the Ninth Circuit in the context of a challenge to EPA's risk evaluation framework rule.

The limited scope of the asbestos risk evaluation is reasonable, given that TSCA is not a particularly good statute for addressing asbestos remediation and disposal. Other federal authorities already address those issues, including:

- The OSHA general industry asbestos standard, 29 C.F.R. § 1910.1001.
- The OSHA construction industry asbestos standard, 29 C.F.R. § 1926.1101.
- The EPA asbestos NESHAP, 40 C.F.R. Part 61, Subpart M.

These standards already extensively regulate in-place asbestos and its removal and disposal. Under TSCA section 9, EPA must consider the extent to which the programs of other federal agencies or other EPA programs may effectively address risks, and it has done so with asbestos.

In addition, in light of the tremendous workload that EPA has under TSCA as amended, EPA properly focused its risk evaluation on the conditions of use best suited for a section 6 rule. As Senator Vitter stated in connection with the final vote on the LCSA, Cong. Rec. S3519 (daily ed. June 7, 2016):

> [T]he Agency is given the discretion to determine the conditions of use that the Agency will address in its evaluation of the priority chemical. This assures that the Agency's focus on priority chemicals is on conditions of use that raise the greatest potential for risk. This also assures that the Agency can effectively assess and control priority chemicals and meet the new law's strict deadlines. Without this discretion to focus

chemical risk assessments on certain conditions of use, the Agency's job would be more difficult.

c. Flame Retardants

Exposure to chemical flame retardants is a particular concern for firefighters. EPA reviews new chemical substances intended for use as flame retardants under the section 5 New Chemicals Review Program. EPA is also addressing existing chemical substances used as flame retardants that raise health or environmental concerns, including the following:

- Decabromodiphenyl ether (decaBDE) is a flame retardant used in textiles, electronic equipment, building and construction materials, carpets, upholstery fabric, back coatings, cushions, mattresses, and tents. It is also used in plastics used as components in electrical appliances and equipment such as stereos, computers, televisions, circuit boards, casings, and cable insulation. In 2016, EPA listed decaBDE as a persistent, bioaccumulative, and toxic substance (PBT). Per section 6(h), EPA must publish a proposed risk management rule for decaBDE by June 22, 2019 and a final risk management rule by December 22, 2020. That rule must "reduce exposure to the substance to the extent practicable."

- Phenol, isopropylated, phosphate (3:1) (PIP) is a flame retardant used in textiles, rubber, polyurethane foam, antistatic agents, cellulose, cotton, cutting oils, electronic equipment such as video display units cables, casting resins, glues, engineering thermoplastics, epoxy resins, and phenolic resins. In 2016, EPA listed PIP as a PBT. As with decaBDE, EPA must publish a proposed risk management rule for PIP by June 22, 2019 and a final risk management rule by December 22, 2020. That rule must "reduce exposure to the substance to the extent practicable."

- The hexabromocyclodecanes (HBCD cluster) in the cyclic aliphatic bromide cluster includes two chemicals used as flame retardants in expanded polystyrene (EPS) foam and extruded polystyrene (XPS) foam in the building and construction industry for thermal insulation boards and laminates for sheathing products. They may also be used to a limited extent in plastics (additive) and textiles (backcoating). In 2016, EPA designated this cluster of flame retardants as among the first 10 chemical substances to receive risk evaluations under section 6(b)(2)(A). 81 Fed. Reg. 91927 (Dec. 19, 2016). EPA must publish a final risk evaluation on this cluster by December 19, 2019. If it determines that one or more conditions of use presents an unreasonable risk, it must adopt a risk management rule within 2 years that bans or restricts those conditions of use "to the extent that the chemical substance or mixture no longer presents such risk."

In addition, in 9 days, by March 22, 2019, EPA must identify 20 candidates for designation as high-priority substances and make final designations by December 22, 2019. At that point, it must have risk evaluations underway for those 20 substances. Among the potential candidates are 3 additional clusters of flame retardants, all listed on the 2014 update to the TSCA Work Plan. They include:

- The chlorinated phosphate esters cluster, used as flame retardants in furniture foams, textiles, paints and coatings.
- The tetrabromobisphenol A and related chemicals cluster, used in plastics and printed circuit boards for electronics.
- The brominated phthalates cluster, used in commercial flame retardant formulations.

EPA had already begun work on these 3 clusters of flame retardants prior to enactment of the LCSA, making them likely to be included among the 20 candidate chemicals.

d. Other Existing Chemicals

EPA is also considering worker protection as it proceeds toward risk management rulemaking for the other 3 PBTs designated under section 6(h), all industrial chemicals. They are:

- Hexachlorobutadiene (HCBD), used in the manufacture of rubber compounds and lubricants and as a solvent.
- Pentachlorothio-phenol (PCTP), used as an agent to make rubber more pliable in industrial uses.
- 2,4,6-Tris(tert-butyl)phenol, used as a fuel, oil, gasoline or lubricant additive.

As with decaBDE and PIP, EPA must propose risk management rules for these substances by June 22, 2019, and publish final risk management rules for them by December 22, 2020.

In addition, EPA is considering worker protection in the other risk evaluations currently underway for the following chemical substances:

- 1,4-Dioxane
- 1-Bromopropane
- Carbon tetrachloride
- N-Methylpyrrolidone (NMP)
- Methylene chloride (conditions of use other than those covered by the risk management rule)
- Pigment Violet 29
- Trichloroethylene (TCE)
- Tetrachloroethylene (perchloroethylene)

EPA must publish final risk evaluations for these substances by December 19, 2019. For any conditions of use determined to present an unreasonable risk, it must publish a final risk management rule 2 years later.

The Briefing Memo for this hearing reported that EPA's draft risk evaluation for Pigment Violet 29 "excluded consideration of worker exposures from that risk evaluation." It should be

noted that the draft risk evaluation does address occupational exposures in section 3.3.1, pages 21-24. It addresses risks to workers in section 5.2, pages 28-31.

Conclusion

EPA has already done much under TSCA to protect workers from chemical risks. Given its responsibilities and upcoming deadlines under the LCSA, EPA has much work ahead of it as well. As it does that work, worker protection will remain a primary objective.

Mr. TONKO. Thank you. Thank you very much.

And finally, we move to Dr. Adam M. Finkel of the University of Michigan School of Public Health.

Welcome.

STATEMENT OF ADAM M. FINKEL, D.Sc.

Dr.FINKEL. Good morning. Thank you very much for the opportunity. My bio is in the written testimony but, briefly, I was OSHA's chief rulemaking official in 1995 to 2000 and later was chief enforcement official in the Rocky Mountain States out of Denver.

I have been on the EPA's Science Advisory Board, Board of Scientific Counselors, and on both of the National Academy Committees convened to review EPA's risk assessment methods.

I am a strong supporter of risk assessment and cost benefit analysis, having helped pioneer some of the methods EPA uses. I am going to pose four questions in this brief statement, but my main message is that, as others have said, TSCA now requires EPA to provide protections to workers and requires it to use readily available information and the best available science to do so.

Many of EPA's actions and inactions over the last two years are contrary to the plain meaning of the law, arbitrary, and unscientific. Congress needs to give EPA clear direction to follow the law it enacted and to oversee the agency's corrective actions.

So question one, "why should EPA protect workers?"——

Chairman Pallone mentioned 50,000 premature deaths per year. One might think that because EPA has been instructed by Congress to reduce risk to one in a million where possible, and because OSHA has always interpreted its Supreme Court decision to let it stop at one in a thousand, that workers would be exposed to about a thousand, times more of these chemicals than the general population.

But I have looked at all the data. It is actually 10,000, 100,000, sometimes a million times greater concentrations in the workplace than in the general environment.

There is a reasonable belief that when workers are compensated and are informed about their risks they could bear somewhat more risk than the general population. But come on, 10,000 times more?

EPA should begin its risk assessment and management in the workplace because the risks physically begin there. Just as it is cheaper to put ice on a frozen sidewalk than to put a plate in a broken leg, the most efficient way to reduce concentrations for everyone is to reduce them at the source where they are highest, so they don't diffuse into the air that non-workers breathe all day and that workers breathe when they come home at night.

And in many cases businesses will find it less expensive and less illogical to control these exposures simultaneously, using substitution or engineering controls, rather than having to deal with half the problem, then the other half in retrofit.

So I think EPA, both the Air Office and the Chemicals Office, should regard workers as one of their primary constituencies. EPA doesn't ignore water pollution because there is a Fish and Wildlife Service and they shouldn't ignore workers just because there is an OSHA.

Question two, "why was EPA given this statutory authority?"—I have read comments by the American Chemistry Council (ACC) and the Halogenated Solvents Industry Alliance claiming that EPA must coordinate with OSHA before doing anything that might reduce worker risk. That is legally inaccurate.

TSCA 9(a) gives the administrator complete discretion to decide when to confer, and this makes sense because for most or all of the chemical risks that EPA finds may be unreasonably high to workers, OSHA's accurate answer to the question "can you do more?" would be "no."

And so asking the question is only going to complicate and delay needed analysis and action. I am proud of my former agency but it is overmatched and unable to reduce unreasonable risks. Many of those factors are explained in my testimony.

Mr. Kashkooli is right that most workers are covered by OSHA, but not public sector workers, not independent contractors, not safety hazards on small farms. So there is a lot of lack of coverage, a budget one-twentieth of the EPA's, 19 chemical-specific standards in 49 years compared to over a thousand in Germany.

And, again, declaring victory at one in a thousand, which is far above where EPA would ever even begin to contemplate starting a rulemaking.

Now, we have talked about methylene chloride a bit. I presented a graph in my written testimony showing over 12,000 samples divided between pre-1999, when the standard I helped write took effect, and the 15 years later.

The new PEL is 25 parts per million but in the 15 years before we went to all that trouble to regulate, the average exposure was about 85 parts per million. Now it is all the way down to 69 parts per million—widespread noncompliance.

And that is one of 19 OSHA-regulated chemicals. There are thousands more that are unregulated or use standards that were grandfathered in in 1970 based on 1950's science.

Question three,— "how is EPA failing to protect workers?" I see a pattern of rather clumsily designed pronouncements designed to make worker risks go away without actually doing anything helpful.

Methylene chloride—it is clear from the titles of the rules that we are headed towards a split in the rule where consumers may be protected—I would be happy to answer questions about how I think they probably will not be—but workers will not be, deferred for restarting a rulemaking on an issue, certification, and training that EPA already said, "we view the costs and challenges of certification and training as a limitation of that approach" and they rejected it.

1-bromopropane—a multi-site animal carcinogen, known human neurotoxin—we have known this now for at least 12 to 15 years. EPA has still not listed it as a hazardous air pollutant, which is only a hazard determination, and the thing I want to highlight about this, just to give you a sense of what is going on in the workplace, there is "manufactured doubt" out there that says that when animals are exposed to far more than workers in the laboratory we may have trouble extrapolating down to lower doses.

But in the animal test, at 62 parts per million the animals got 800 percent more cancer than the background. Workers are exposed today—at least 20 percent of them are—to over that limit so it is above the amount that we are giving to animals in the cage.

My time is almost done. I would be happy to talk about PMNs. My fourth question was "how is EPA failing everyone else?" I think the methylene chloride rule is not going to necessarily protect consumers because there are going to be small cans still available. The bromopropane rules says consumers will avoid it because it is expensive.

Again, I am proud of OSHA but it is not solving the problem—let us begin. Let us begin. That is what EPA should be doing.

Thank you.

[The prepared statement of Dr. Finkel follows:]

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Hearing on "Mismanaging Chemical Risks: EPA's Failure to Protect Workers"

Testimony of Adam M. Finkel, Sc.D., CIH
Clinical Professor of Environmental Health Sciences,
University of Michigan School of Public Health[1]

Before the U.S. House of Representatives
Committee on Energy and Commerce
Environment and Climate Change Subcommittee

March 13, 2019

Chairman Tonko, Ranking Member Shimkus, and Members of the Subcommittee—thank you for the opportunity to testify on this important topic.

I am one of the few individuals in the 49 years since OSHA and EPA were created who was fortunate enough both to have directed the rulemaking operations of one of the agencies (OSHA) and to have served as a Regional Administrator in charge of all enforcement, partnership, and outreach operations in one of the ten regions of the U.S. (also at OSHA). As Director of Health Standards at OSHA for five years in the 1990s, I helped promulgate five of the eight chemical exposure regulations OSHA has issued over its past 27 years, including our 1997 rule on methylene chloride (MC). I have served on the EPA Science Advisory Board, its Board of Scientific Counselors, and was a member of both of the two committees that the National Academy of Sciences has convened (in 1994 and in 2009) to review EPA's progress in using sound methods of quantitative risk assessment to help it regulate and communicate with the public. Before joining the faculty at Michigan, I taught cost-benefit analysis, decision theory, and regulatory law and policy at Princeton, Rutgers, and the University of Pennsylvania.

I am a strong supporter of quantitative risk assessment and cost-benefit analysis, having helped pioneer some of the methods now in common use at EPA and elsewhere to estimate risk from carcinogens and non-carcinogens, quantify uncertainty in health risk

[1] For identification only: the views I am expressing here are my own and not necessarily those of the University of Michigan School of Public Health.

and regulatory cost, and assess the impact of regulation on jobs, longevity, quality of life, and public perceptions. Recently, I helped lead a multi-year project at the Univ. of Pennsylvania exploring how by "listening, learning, and leading," regulatory agencies around the world could succeed or fail at being a "best in class" agency (Coglianese 2016).

I will discuss EPA's recent actions and inactions, and its science and pseudo-science, by trying to answer the following four questions: (1) Why *should* EPA protect workers from chemicals?; (2) How and why did Congress give EPA statutory authority to help protect workers?; (3) How is EPA failing to help workers? and (4) How is EPA also failing to help all citizens, regardless of age, race, or income, who are also exposed to toxic substances?

My central message is that I know how much time and effort so many Members, staff, and stakeholders put into revising TSCA over decades, culminating in the Lautenberg Act. Every paragraph in that law was carefully crafted to balance competing interests (not necessarily the way I think they should have been balanced, but that's why you are here for years and I'm here for a few hours). The law requires EPA to provide protections to workers, and requires it to use all reasonably available information and the best available science to do so. EPA's actions and inactions over the past two years with regard to TSCA are an affront to the legislative process. I think many of its current actions will eventually be overturned as contrary to the plain meaning of the law, arbitrary and capricious under the APA, and unscientific, and that some of its unjustified and impermissible delays will result in court-ordered deadlines—but these remedies will take time during which workers and non-workers will suffer needlessly. *In the hope of righting a ship that has veered far off course, Congress needs to give EPA clear direction to follow the law it enacted, and to oversee the Agency's corrective actions.*

1. Why should EPA protect workers?

It is not well-understood that occupational exposures to toxic chemicals remain a huge public health problem, and *by far* the major harmful impact of these substances that

EPA has been studying and controlling since 1970. All of the independent biostatistical studies of the problem agree that roughly 50,000 U.S. workers each year die prematurely (primarily from cancer, lung diseases, and cardiovascular disease) from toxic exposures on the job (Leigh 2011, Steenland et al. 2003, Leigh et al. 2004). If we chose to list these deaths in their own category where they belong, occupational disease would be the 9th leading cause of death in the U.S., just below influenza/pneumonia and just above kidney disease and suicide. We have deindustrialized the nation to some extent in the past decades, but (see below) while exposures to asbestos, benzene, and other substances have declined, the overall problem is not decreasing significantly, as other exposures stay high and new substances replace older ones, sometimes with equal or greater toxicity.

In various federal environmental statutes (SDWA, FQPA, CAA Amendments, etc.), Congress has instructed EPA to reduce grave risks to a level of one chance in one million where possible. OSHA, however, has always chosen to interpret the 1980 Supreme Court decision in the *Benzene* case to require it only to reduce worker risks to below one chance per *thousand.*[2] Based on this difference, one might think that, concentrations of toxic substances in workplaces would generally be about 1000 times higher (1,000,000 ÷1000) than we are exposed to in our communities. But the reality is far worse: I've looked at many chemicals, comparing the roughly 3 million air samples OSHA has taken against EPA's measured and modeled concentrations in communities, and found that occupational levels are ten thousand, often *one million times higher* than in the ambient environment (Finkel and Ryan, 2007). There is a reasonable belief that because workers are compensated and (ought to be!) informed about their risks before bearing them, they can face more risk than the general population—but a million times more? *To fulfill EPA's primary mission—protecting human health—the Agency has always sought to prioritize larger problems over smaller ones.*

Most importantly, EPA should begin its risk assessment and management in the workplace, because the risks themselves begin there. *The reason* that those of us who don't

[2] This is (unfortunately) so even though the Supreme Court merely said that OSHA should stop reducing toxic-substance concentrations when it reached risk levels of somewhere *between* 1/1000 and one in one *billion.* See *Industrial Union Department, AFL-CIO v. American Petroleum Institute,* 448 U.S. 607 (1980).

work for half our waking hours still face chronic-disease risks from the air we breathe is largely because these exposures emanate from workplaces. Just like it is cheaper to put salt on a frozen sidewalk than to put a plate into a broken leg, *the most efficient way to reduce concentrations in the general environment is to reduce them where they are highest, so they don't diffuse as much into the air that non-workers breathe all day and that workers breathe when they come home at night.* In many cases, businesses will find it less expensive and illogical to control workplace and environmental exposures *simultaneously using integrated controls* than to install controls that only deal with one half of the problem or the other, and then have to retrofit later. Worst of all, there is growing evidence (Piltingsrud et al. 2003; OSHA/NIOSH/EPA 1999) that in some cases, pollution control devices required by EPA reduce emissions to the general environment *by increasing them inside the plant/factory.*

For all these reasons, EPA's Air Office and Chemicals Office should regard workers exposed to chemicals as their *primary* constituency; EPA does not ignore water pollution because Congress also created the Fish and Wildlife Service, and it shouldn't ignore workers just because we also have an OSHA.

2. *Why was EPA given statutory authority to protect workers?*

Of course, TSCA is not the first or only statute that has given EPA authority to protect workers, either on its own or in conjunction with OSHA (notably, FIFRA and pesticide applicators; CAAA and the Risk Management Plans). But with regard to TSCA, I've been dismayed to see industry groups, notably the Halogenated Solvents Industry Alliance (HSIA, 2016) and the American Chemistry Council (ACC, 2017), advancing the factually-incorrect claim that EPA *must* coordinate with OSHA before doing anything that might reduce worker risks, and making the misleading claim that TSCA is only supposed to be used to protect workers when OSHA has declined to regulate.

The legal errors in these misstatements are easy to correct. TSCA §9a, 15 USC 2608(a), has been unambiguous since TSCA's first enactment in 1976: once the EPA Administrator determines that a chemical poses an unreasonable risk, AND "determines, **in**

[her] discretion," that the risk might be reduced by OSHA or another agency "to a sufficient extent," she needs to check in with that agency to seek their input before regulating and to give that agency a chance to take the lead (emphasis added). HSIA miquotes §9a to "require[] unreasonable risks to be addressed under statutory authority other than TSCA wherever possible." That statement has been *untrue* for the past 43 years, and the 2016 amendments strengthened EPA's hand further by requiring it to act even when the risk affects only a "potentially exposed or susceptible subpopulation," which of course now includes workers explicitly.[3]

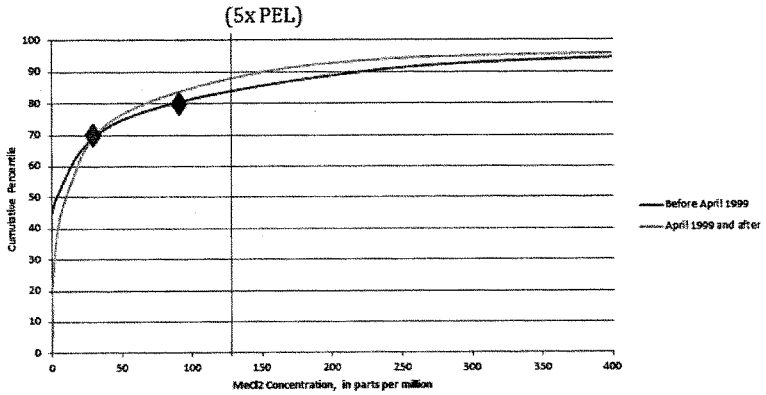
Why did Congress instruct EPA to consult with OSHA, but at its discretion? *The answer is that for most or all of the chemical risks EPA finds are unreasonably high to workers, OSHA's accurate answer to the question "can you do more?" would be "no,"* and so asking the question will complicate and delay a simple question of whether unreasonable risks will indeed be reduced. I have very high regard for the dedication and accomplishments of my former colleagues and staff at OSHA, but for many reasons, OSHA is simply overmatched and unable to reduce unreasonable risks. Among other things:

- OSHA cannot (by law or appropriations riders) provide any protection to public-sector workers, independent contractors, do-it-yourselfers, employees at small farms, or bystanders whose only exposures occur because in proximity to hazardous work;
- OSHA's budget is about 1/20th the size of EPA's across-the-board, but is particularly thinly-funded in rulemaking. In 49 years, OSHA has only set comprehensive standards for 19 chemical substances, as compared (for example) to over 1000 such standards by the German equivalent of OSHA.
- As I mentioned before, OSHA *stops* regulating at a risk level far above where EPA would normally *start* reducing risk. The OSHA "1 case of grave disease in 1000" goal is the highest risk level at which any public health agency anywhere in the world, to my knowledge, would contemplate declaring "mission accomplished."
- Congress and the Supreme Court also circumscribed OSHA's ability to regulate, in two important ways: (1) it must demonstrate "significant risk," which gives it a higher

[3] ACC notes that §9(d) of TSCA requires EPA to coordinate with other agencies so as to "impose the least burdens of duplicative requirements." There is, *of course*, no "duplication" if OSHA at one time allows employers to use a chemical so long as they control it to a certain concentration, and if EPA then later imposes a ban on such use.

burden of proof than EPA's when human epidemiologic data on effects is still being assembled; and (2) it must show "economic feasibility," which severely limits OSHA's ability to require engineering controls that reasonable employers haven't *already* installed and found effective. EPA, by contrast, can consider the benefits of banning a substance, or one or more of its uses, without regard to these constraints.

- OSHA simply has never given a proportionate amount of its own attention to worker health, as opposed to worker safety. Although OSHA claims that about 20-25% of its inspections are undertaken to look for health hazards, I've analyzed the data and found the true percentage is closer to 2-3% [4]. This helps explain why, unfortunately, even in the 19 cases where OSHA has set a modern exposure limit, *workplace exposures remain significantly above even the relatively lax limits OSHA has set.* We will be talking a good deal about methylene chloride (MC) today, a probable human carcinogen and known cause of acute cardiovascular death. I led the development of that standard, which was promulgated in 1997 and took full effect in 1999. Even at the time of promulgation, OSHA admitted that it was impermissibly weak by law, because we knew the risk at the new Permissible Exposure Limit (PEL) of 25 ppm was too high but we had failed to analyze the economic feasibility of a 10 ppm level (at which the risk would have been just at the magic 1/1000 cutoff). *But employers have widely failed to comply even with that weak exposure limit.*



[4] The discrepancy is easily explained: OSHA codes any inspection that one of its inspectors with an industrial hygiene (IH) personnel classification does as a "health inspection," but the IHs at OSHA are increasingly being called upon to perform safety inspections at fixed establishments and construction sites.

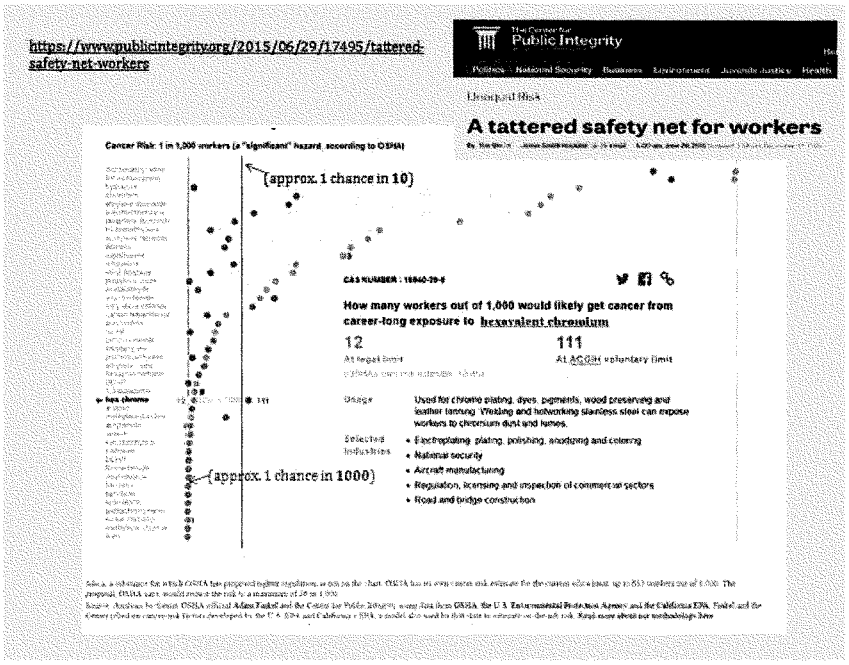
I've analyzed the more than 12,400 air samples of MC that OSHA has taken during all of its inspections between 1984 and 2018. The chart above (cumulative distribution of all samples, in ascending order of concentration, for the pre- and post-rule time periods) shows that the average MC level found in U.S. workplaces for the 15 years before the new standard was about 85 ppm (see the red diamond)—but in the 19 years since the standard took full effect, exposures have only gone down to an average of 69 ppm (green diamond), nearly three times higher than the legal limit. *Both before and after the standard, the same proportion (66 percent) of samples exceeded the PEL, and still about 12% of all samples are above five times the PEL.* These disheartening data, which are similar for other substances OSHA has regulated, show that EPA is simply wrong to assume, as it has in the MC and 1-bromopropane problem formulation documents, that current worker risks are at all constrained by what OSHA has made legally permissible.

I emphasize that I've looked at the establishment names for all 12,400 samples, and although as expected there are many small businesses among them, OSHA also found violations of its 25 ppm PEL at many multi-billion-dollar corporations, including some of the nation's largest automobile, furniture, mattress, aircraft, photographic film, athletic shoe, chemical, paint, and piano manufacturers.

And as unreasonable as *these* worker risks are (3.6 cancers per thousand workers, *even if* employers complied with the MC standard, plus several acute fatalities each year among workers and more among independent contractors), methylene chloride is a *regulated* chemical, and OSHA has regulated only a vanishingly small fraction of all the chemicals workers are exposed to. The chart below, which I helped the Center for Public Integrity create several years ago (Hopkins 2015), emphasizes the excess cancer risk levels for several dozen chemicals where OSHA can only enforce grandfathered standards it inherited in 1970. The yellow circles show the risk levels would often exceed *one chance in ten* if employers allowed levels this high[5]; this is why former OSHA Assistant Secretary

[5] In a separate analysis (Finkel 2013), I looked at the roughly 500 OSHA PELs that were set (almost all of them in 1970 based on prior consensus standards) to consider *non*-carcinogenic health effects. I compared them with the EPA Reference Concentrations (RFCs) for each substance; the RfC is supposed to be a concentration

David Michaels said last year (Michaels 2018) that "no major company follows the OSHA PELs, and they'd be crazy to do so." *THIS is why Congress increased EPA's authority to protect workers when it amended TSCA just a couple of years ago: because if we seek to take the most meaningful steps towards eliminating unreasonable risks our society has allowed from chemical exposures, all roads lead to the workplace.*



And yet, I have rarely seen a more brazen, more inaccurate, and more offensive statement in my 35 years in and around government as this one from ACC's March 2017 comments to EPA on the first ten TSCA chemicals: "given that OSHA protocols are designed to regulate risk to worker populations, *it should be the unusual case where an unreasonable risk may present to a worker population under conditions of use"* (emphasis added). I am

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that provides substantial protection against the health effect, but is not without some risk. In the vast majority of the cases, the OSHA PEL was between *500 and 10,000 times higher than the RfC.*

here to emphasize that **in every single case** where OSHA has regulated and in every single case where OSHA has not regulated, **unreasonable risks to workers do remain.** Fifty thousand annual premature deaths, and workplace concentrations tens of thousands of times higher than EPA limits, attest to the willful blindness of ACC's statement and to the need for Congress to make good on its legislative amendments.

3. How is EPA failing to protect workers?

EPA's current indifference to the "most unreasonable" risks in its purview (the workplace) manifests in various different ways. I see at EPA a general pattern rather clumsily designed to make worker risks "go away" without doing anything helpful. These occur both in specific TSCA evaluations of high-volume chemicals and in the dozens of §5(a)(3) determinations EPA is making on premanufacture notifications (PMNs).

Among the most troubling general tendencies of the recent EPA documents on chemicals with worker exposures are:

- Excluding many "legacy uses" of substances. This is inappropriate and arbitrary, since in some cases (e.g., asbestos products previously used in manufacturing and construction) it is precisely the remediation, maintenance, and disposal tasks where workers are exposed to the highest concentrations.

- Violating one of the most fundamental principles of industrial hygiene by estimating worker exposures based on the assumed concentrations inside of properly-functioning and properly-fitting respirators (and the risks of dermal exposure assuming properly-functioning gloves). OSHA and the IH field in general rely on the "hierarchy of controls," which puts engineering controls (and substitution of less hazardous substances) above personal protective equipment (PPE) in terms of desirability and often regulatory requirements (in many OSHA standards, employers cannot achieve the PEL by using respirators until they have exhausted feasible substitutions and engineering controls). This principle exists because respirators are hard to fit properly, prone to leakage both through the filter media and at the seal with the wearer's face, and can place a physiologic and a safety burden on the user.

- Inappropriately imagining OSHA authority that doesn't exist. For example, in the recent draft risk evaluation for Pigment Violet 29, EPA stated that "oral and inhalation exposures for downstream processors and users are possible; however, occupational exposures from these downstream users are likely to be limited due to the expected use of PPE (per Safety Data Sheet for C.I. Pigment Violet 29)." This statement is doubly inaccurate. First, PPE does not reliably "limit" exposures, as discussed above. More importantly, though, EPA is assuming that *recommendations* by the manufacturer of a toxic chemical, present on the Safety Data Sheet, create any obligation on the part of the employer. This is the most fundamental misreading possible of the entire OSHA Hazard Communication Standard (HCS), which creates obligations for manufacturers to create and disseminate accurate information, and for employers to make the Data Sheets available to workers, but as the standard clearly says, "while the ... HCS requires the provision of information on recommended control measures, including respiratory protection, personal protective equipment, and engineering controls, *there is no requirement for employers to implement the recommended controls.* An employer should use all available information when designing an appropriate protective program, but a recommendation on a Safety Data Sheet by itself would not trigger the need to implement new controls." (77 *Federal Register* No. 58, March 26, 2012, p. 17693).

Specific Case Examples:

Methylene Chloride:

If, as expected, EPA publishes a rule this week or next that abandons the proposed rule's steps towards protecting workers from MC exposure, there is no scientific or legal doubt that it would be failing to follow Congressional intent: the unreasonable risks that OSHA was unable to control will remain. Apparently, EPA will soon move forward with a truncated final rule to "protect" only consumers, but (see below) it is not clear whether its chosen means of consumer protection make any sense now that the January 2017 proposed rule will be split in two. EPA will apparently turn back the clock on worker protection by several years or more and begin from scratch with a pre-rule announcement leading to a "training, certification, and limited access program" for workers exposed to MC. Besides abdicating its responsibility, there are two giant problems with this approach. First, in most cases the only respirators that provide any protection against MC (supplied-air respirators) require more expensive retrofits of the workplace than the engineering

controls that would reduce concentrations below the OSHA PEL. So, training workers in this setting is not likely to reduce exposure and risk unless EPA requires actual controls instead of placing the onus on the worker. Secondly, in the proposed MC rule itself, EPA already considered and rejected that very option: "EPA viewed the costs and challenges involved in regulating distributors and ensuring that only trained and certified commercial users are able to access these paint and coating removal products as a significant limitation for this approach" (82 *Federal Register* No. 12, 1/19/17, p. 7474). Finally, whereas a use ban on MC for paint and coating removal, as proposed (with the proposed exemption for military needs), would not (see footnote 3 above) have run afoul of the TSCA §9(d) requirement to avoid duplication with OSHA, a training program *does* duplicate various provisions of our 1997 MC rule, and would therefore seem less compliant with TSCA than what EPA proposed in 2017.

1-Bromopropane:

1-bromopropane (1-BP) is a potent multi-site animal carcinogen and a known cause of human neurological damage (NIOSH 2016; Urbina 2013). In 2011 a state environmental agency and an industry group (competitors of the 1-BP manufacturers) petitioned EPA to add 1-BP to the list of 188 Hazardous Air Pollutants in the Clean Air Act Amendments. By law, EPA had 18 months to rule on this petition. As an expert in hazard classification and risk assessment, I can assure you that this decision was literally a no-brainer: the legal criteria for addition require the Administrator merely to judge whether an air pollutant is "known or reasonably may be anticipated to cause adverse effects to human health." No estimation of the probability or severity of such effects is relevant, and science has known about 1-BP's unequivocal neurotoxicity since around 2004 (when many human case reports and controlled epidemiologic studies were available), and known it to be a carcinogen since roughly 2006.[6]

[6] Indeed, several major manufacturers in the U.S. and Europe ceased all production of 1-BP circa 1999-2001, when earlier reports and data were already indicative of extreme toxicity.

But it took EPA until 2015 to propose adding 1-BP to the HAPs, and until January 2017 to announce that it was prepared to add it based on the comments received. Inexplicably, the EPA later in 2017 repeated a call for more comments, and has taken no steps to finalize that listing since. In my October 2017 comments to that docket, I urged EPA to require OCSPP Deputy Assistant Administrator Nancy Beck to play no part in this listing decision, because when she was an ACC staff member she testified before an EPA committee in 2015 and offered many flatly erroneous comments trying to exculpate 1-BP as an animal carcinogen.

The disdain for workers during this EPA proceeding has been extreme. The two most relevant facts here are: (1) 1-BP has caused neurological damage in workers exposed to roughly 7 ppm, and in the animal cancer bioassay, mice exposed to 62.5 ppm developed lung tumors at 8 times the rate of control animals; and (2) to put these levels in perspective, I've analyzed the roughly 250 samples OSHA has taken for 1-BP between 1998 and 2015, and found the *average* workplace exposure of roughly 30 ppm, with nearly 15 percent of all samples exceeding 62.5 ppm. In 35 years of doing risk assessments based on animal data, I have never seen a case where so many worker exposures exceed the doses found to be highly carcinogenic in the laboratory—the animal exposures are designed to be high enough to show enormously high rates of cancer, which we hope never to see in humans. And yet, EPA appears to take seriously comments prepared for industry by Gradient Corp., stating that "the exposure concentrations used by the National Toxicology Program (62.5 - 500 ppm) are several orders of magnitude greater than those modeled for ambient air ... [and therefore] may be qualitative with regard to potential carcinogenic effects, but not reliable for quantitative extrapolation from animals to humans."

Let's parse that sentence more clearly: with no evidence to support this claim, Gradient says that we may not be able to reliably *extrapolate* risks from higher doses to lower ones, but fails to mention that human *workers* are at this moment breathing *more* 1-BP than the animals who got cancer did. It's not uncommon for the chemical industry and some academic scientists to "manufacture doubt" and say without foundation that "because the animals were exposed to more than humans would be, we can't be 100% sure of the

human risk," but cavalier in the extreme to say so when the animals were exposed to *less* than the humans are! Yet again, workers don't count: but TSCA says EPA must count them.

I am concerned that although EPA's May 2018 TSCA "problem formulation" document on 1-BP promises to conduct risk assessments for the major occupational uses, it will underestimate occupational exposures (I have a more complete database, received under a successful FOIA lawsuit in 2007, than OSHA has made available to the public, and have sent all the 1-BP (and the MC) samples to EPA), will repeat the unfounded claims about uncertainty in cancer dose-response, and will fail to conclude that *by definition,* the neurotoxicity risk is unreasonable at or above a few ppm, given the human case reports and epidemiologic studies, and that therefore an acceptable level of human exposure to 1-BP should be in the part per billion range.

Trichloroethylene:

EPA has moved proposed rules to ban the use of TCE in vapor degreasing and spot cleaning from "active" status on its Regulatory Agenda to a "long-term action." From my years at OSHA, I know that "long-term action" is often a euphemism for "never."

Pigment Violet 29:

EPA's draft risk assessment for PV29 turns the scientific rules for weight of evidence on their head, inappropriately concluding that PV29 is "unlikely to be a carcinogen" based on two ostensibly "negative" studies of an endpoint (genotoxicity) that has only a limited value in predicting carcinogenicity, and on a vague "consideration of the structural activity of the compound." I've analyzed one prominent case (NTP, 2013) to show how pronouncements about structure-activity relationships can be completely wrong: the peer-reviewed article by Rozman and Doull (2002) claiming that 1-BP would be found non-carcinogenic in a bioassay ongoing at that time. Soon thereafter, it was found to be a more potent animal carcinogen than the "analogous" chemical Rozman and Doull were using to make their structural claim. It is also troubling that EPA bases all its worker (and general-

population) exposure estimates for PV 29 on a single "personal communication," whose content is not revealed to the public, from a manufacturer of the substance.

Various PMNs:

I've looked at a small but representative sample of recent EPA Determinations for Premanufacture Notice, and all of them seem to rely on the "voodoo industrial hygiene" concept that "workers will use appropriate PPE, consistent with the Safety Data Sheet prepared by the PMN submitter, in a manner adequate to protect them." This cavalier statement fails to consider, of course, whether the PPE will in fact result in acceptably low risks if it is used as recommended, or whether the employers who use the manufacturer's product will follow the SDS in the absence of legal requirements for them to do so.

A General Observation:

I have interacted with EPA officials for three decades, and I've not seen before the kind of public statements from political appointees that signal such disdain for occupational health and such incomprehension of basic environmental/occupational health science. Here are two examples:

- Weeks before his confirmation hearing, during oral argument seeking (unsuccessfully) to overturn over OSHA's new silica standard in front of DC Circuit, Bill Wehrum told the Court that "people are in dusty environments all the time, and it doesn't kill them." This displays a shocking misunderstanding of how scientific evidence works (risk *means* that not everyone will die when exposed), of how many workers *do* die "all the time" in dusty environments, and how fractured silica particles are "not just dust." Hippocrates and Pliny the Elder wrote about silicosis 2000 years ago, but the head of EPA's Office of Air and Radiation apparently didn't get that memo.
- In 2017, the former acting head of OCSPP reportedly was concerned (Lipton, 2017) that her deputy (Nancy Beck) regarded failure to follow warning labels for MC as the cause of acute worker fatalities. Beck apparently offered that "only a small number,"

either around 1 percent or less than that proportion, had been harmed by the solvent. To give Beck the most benefit of the doubt about her statement, she was suggesting that a risk of 1 in 10 would *not* be acceptable, but that risks below that would be—this from an Agency instructed by Congress for decades to regard risks below 1 in 1 million (5 orders of magnitude lower than 1 in 10) as acceptable.

4. *How is EPA failing everyone else under TSCA?*

Some of the flaws in recent TSCA actions—and inactions—do not only imperil workers, but will leave the *other* 150 million Americans without needed protections. Again, reducing worker exposures is often the most efficient way to reduce general-population exposures. But it must also be said that even workplace toxicants not "emitted" into the general environment can harm non-workers: (1) science is increasingly finding (Julvez and Grandjean 2009; Anderson 2005) that children born to workers – both women and men– who are exposed to chemicals on the job are at increased risk of a variety of health problems, including cancer, neuro-developmental disorders, and reproductive problems; and (2) families of workers can be exposed to unreasonable risks from the smaller quantities workers bring home on their clothes, hair, and skin (Knishkowy and Baker 1986; NIOSH 1995).

In addition to giving a few specific examples of how recent TSCA actions leave behind unreasonable risk across-the-board, I want to then step back, having advised EPA on risk assessment methodology since the 1980s, and offer some cautionary observations about unscientific and illogical steps EPA is taking more generally.

- The MC rule that is at OIRA as of this writing may harm consumers as well as workers. EPA has also delayed any action on n-methyl-pyrrolidone (NMP), which consumers can purchase in a variety of paint-stripping formulations, even though there are safer and equally (or more) effective substitutes for MC (Morose et al. 2017). It is also not clear if and how consumers will be protected if workers have continued access to small cans of MC. The means of protecting consumers in the

2017 rule was simply to ban the sale of MC in drums of less than 55 gallons; now, this safeguard may no longer be applicable since unaffected "commercial uses" presumably include the needs of independent contractors.

- In its 1-BP problem formulation document, EPA says that "consumers will avoid 1-BP for engine degreasing because it is expensive." That is an interesting bit of behavioral-economics speculation, but EPA is not allowed by TSCA to avoid analyzing an exposure pathway because it asserts that consumers will not avail themselves of an unregulated and permissible use for a product.

The most far-reaching erosion of protections to consumers and residents, however, may well come from ways in which EPA, led to some extent in this by OCSPP, is either continuing to underestimate risk (particularly cancer risk) to every citizen, or actively seeking to underestimate risk more severely than ever before. I am well aware that the "conventional wisdom" asserts that cancer risk assessment methods are "conservative" (and that regulatory economics tends to underestimate regulatory cost), but in both cases, theory and evidence has shown the exact opposite—widespread underestimation of risk and overestimation of cost (for review articles summarizing both sub-literatures, see Finkel 2003 and Finkel 2014a).

EPA continues to ignore the consensus recommendations of the two National Academy of Sciences committees convened to review its risk assessment methods (NRC 1994; NRC 2009) that it must stop treating every human being as identically susceptible to the effects of any given carcinogen. EPA has always added a ten-fold safety factor to its *non*-carcinogen safety assessments, meant to account for the person-to-person variability in sensitivity, but has never done so for cancer; NRC 2009 recommended that EPA use a factor of 25 so that cancer risk assessments that otherwise might be reasonably accurate for the typical human would also provide adequate protection for 95 percent of the human population (Finkel 2014b explains further how EPA's failure to do so also results in underestimation of the total benefits of its carcinogen-protection rules).

EPA also continues to deflect the call from the NAS committee and many other experts that it finally begin to estimate *risk* for all non-carcinogenic health effects, rather than simply assert that a given concentration (e.g., the Reference Concentration) is "likely to be without appreciable risk." The scientific techniques to estimate the probability of harm at any exposure to a non-carcinogen have been refined for more than 20 years, but EPA remains committed to the "safety factor approach." This approach makes benefits assessments almost impossible (as this offers no opportunity to estimate the reduced number of cases of disease associated with any policy), but causes a special problem with respect to TSCA: the law calls for decisions to be based on eliminating "unreasonable risk," but EPA has not yet defined that term, and it *cannot* define the term for non-carcinogens when its assessments do not seek to estimate risk at all!

EPA has also embraced a goal in its risk assessment practice of "reducing reliance on default assumptions" (such as, for example, the evidence-based assumption that when large fractions of laboratory animals exposed to a substance develop malignant tumors, this finding is, *rebuttably,* worrisome for humans). I hope the Committee will take an interest in the wisdom of this far-reaching and fundamental change in how EPA assesses, and hence manages, risks of all kinds. Today is not that day, but suffice it to say that from the point of view of public-health decisionmaking, there are two disparate ways to evaluate mixed and uncertain evidence. One way, which if nothing else is very time-consuming, seeks to aggregate, "weigh," and synthesize *all* the evidence about a hazard or risk, treating every assessment as separate from every other and not terminating the assessment until the most accurate answer possible is attained. EPA and the other agencies *used to,* however, have an explicit goal of evaluating evidence with an eye towards precaution, treating "negative" findings with some skepticism unless they were powerful and compelling rather than weak and preliminary. The point of this orientation was two-fold: (1) to reflect the reality that errors of underestimating risk or "missing" a true relationship are more costly to society than errors of overestimating risk or incorrectly assuming an association; and (2) to make it possible for assessments to be completed in years rather than decades (GAO, 2019).

I and others have long argued that EPA should seek to "reduce reliance on *incorrect* default assumptions," not to throw our reliable and evidence-based models because it feels it must start from scratch in every assessment so as to be more than fair to those who doubt the face-value evidence of toxicology, epidemiology, and human case reports. The TSCA evaluations *cannot* protect human health as Congress intended if "systematic review" becomes paralysis.

5. *Conclusions:*

I hope Congress will use the means at its disposal—up to and including report language or appropriations riders—to spur EPA to:

- Promulgate use restrictions for MC, TCE, and NMP as originally proposed and commented upon;
- Conduct thorough risk assessments for worker risks, ones that do not make unwarranted assumptions about employer compliance with hard-to-enforce rules or unenforceable guidelines, or exclude categories of worker exposure arbitrarily; and
- Align its risk assessment methods to the central goal of the TSCA law: to eliminate so far as practicable *unreasonable* risks to consumers, residents, and workers, taking into account both the interindividual variability among human exposures *and* our susceptibilities.

In summary, I am proud of what my former agency has managed to accomplish given all the constraints on it, but there is no shame in OSHA admitting that workers need EPA too. Even if EPA changes course and begins to follow the TSCA law properly, and issues some needed controls on MC, 1-BP, and other high-risk chemicals, this alone will not solve the worker disease problem in the US—but to paraphrase a great speech, "all this will not be finished with the first 10 chemicals, or perhaps even in our lifetimes, but let us begin."

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Mr. TONKO. Thank you, Dr. Finkel.

That concludes the opening statements of our witnesses. Thank you, everyone, of the panel for your thoughts.

We will now move to member questions and each Member will have five minutes by which to ask questions of our witnesses. I will start by recognizing myself for five minutes.

We have heard from representatives of workers in four different and distinct industries. But each are raising similar concerns.

Ms. McGinnis, Mr. Morrison, Ms. Hutchinson, and Mr. Kashkooli—in your opinions, is EPA doing enough to protect workers in your line of work? And just need a yes or no answer there and let us begin with Ms. McGinnis.

Ms. MCGINNIS. I feel like they are doing some, but they could do better—more.

Mr. TONKO. OK. So that is a they are not doing enough, so no.

Ms. MCGINNIS. Not doing enough.

Mr. TONKO. OK.

Mr. Morrison, yes or no?

Mr. MORRISON. Not doing enough. No.

Mr. TONKO. No.

Ms. Hutchinson?

Ms. HUTCHINSON. No.

Mr. TONKO. Thank you.

And Mr. Kashkooli?

Mr. KASHKOOLI. No, and they now have a new tool and that I hope Congress will help them—make sure that they use it.

Mr. TONKO. Thank you.

Mr. Morrison and Dr. Finkel, the Lautenberg Act explicitly designated workers as a susceptible subpopulation. Do you think that was a warranted decision for Congress to make and, if so, is EPA doing enough to live up to that statutory change?

We will begin with Mr. Morrison, please.

Mr. MORRISON. For our class of workers, the firefighters, I think what they fail to do is they prevented us from being that sub-worker group with the legacy asbestos. We were not considered that.

We were not considered a high-hazard group on that and, therefore, we were excluded. So we feel that EPA has really let us down, especially around that legacy asbestos issue.

Mr. TONKO. Thank you.

And Dr. Finkel?

Dr. FINKEL. Well, workers are not—I mean, they are a susceptible population but they are there because they are an incredibly highly-exposed population and in every single case where OSHA has regulated and in every single case where OSHA has not regulated, unreasonable risk to workers by definition remains.

So, obviously, I feel EPA must always consider, assess, and their conclusions, if they are scientific, should be that there is unreasonable risk that we may or may not be able to deal with.

Mr. TONKO. Thank you.

And, Dr. Finkel, in EPA's TSCA framework rules, for example, the risk evaluation rule, do you think EPA has taken sufficient consideration there to protect workers?

Dr. FINKEL. I have been looking more at the specifics of the initial rules that have—the drafts that have come out on methylene

chloride and PV29 and bromopropane. They are certainly thinking about workers in those. But the idea that exposures will not be "reasonably foreseen:" the non-use of protective equipment, noncompliance with requirements, noncompliance with guidelines, that is the very definition of "reasonably foreseen."

So all of these attempts to say that if everything goes swimmingly and workers, instead of having clean environments are wearing respirators, all will be well, "reasonably foreseen:" that can't happen.

Mr. TONKO. Thank you.

And Mr. Morrison, same question with the TSCA framework rules—the risk evaluation rule specifically. Do you think EPA has taken sufficient consideration to protect workers?

Mr. MORRISON. No. I really think that EPA just misunderstood our occupation, I mean, as——

Mr. TONKO. In what—in what way?

Mr. MORRISON. In that, you know, how are we exposed to—and I am going to back to asbestos—how are we exposed to asbestos—how do we do it.

When we arrive on a fire, we have to fight that fire. We have to go into that house. We have to start pulling ceilings. We have to make sure that that fire spread is stopped.

Asbestos is—in some of those cases are completely covered with asbestos. They didn't understand that we can't stop and do an abatement program. We are there as rescuers. We are there as firefighters. We are going to get in there. We are going to do it.

But they failed to see what our job was. They needed to understand what is that end user—what is that firefighter doing? What are the exposures and what are the significant amount of mesothelioma that we have from a NIOSH cancer study for firefighters that show that increase that we are not doing enough for our work in this——

Mr. TONKO. Thank you.

We have one risk evaluation example, that being PV29. Based on how that process has gone forward under the new framework rules, I think we have some evidence of what to expect in the future and in my opinion—my opinion—it is not good.

Mr. Morrison, as EPA goes forward with the other first 10 chemicals or even future action, for example, on PFAS, are you confident that worker exposure risk will be given appropriate consideration?

Mr. MORRISON. Mr. Chairman, I am hoping that it is. I mean, I think PFAS right now, I am hoping that we have a lot more detailed discussion about PFAS. It is probably the one chemical exposure for firefighters now that scare us more than anything else because of not having that protection.

Mr. TONKO. Right. I think you even mentioned, right, that it was part of turnout gear, like part of the——

Mr. MORRISON. Part of the legacy turnout gear. We are—right now, we are doing a study on the current gear to find out the current gear's—what levels of that are on there even before that PFAS.

Mr. TONKO. Thank you. And do you or Dr. Finkel have any other suggestions on how the TSCA framework rules could better conform with the letter of the law? Either of you? Both of you?

Dr. FINKEL. For example, on the PV29 risk assessment the kind of casual way that EPA talks about, well, "we have some evidence that this material is not genotoxic and therefore there is no foreseeable carcinogenic risk," that is just unscientific. And, again, I think the nexus between EPA and OSHA is, obviously, the key both from a management point of view but also from a scientific/analytic point of view.

OSHA does not require employers to follow manufacturers' recommendations on the data sheet. They often do, no question about it. But to say that there is no foreseeable risk just because there is a nonbinding recommendation from a manufacturer out there, again, it might not be crazy in the management stage but in the assessment, they are supposed to say, is there foreseeable risk? That is abdication of the law, I think.

Mr. TONKO. OK. And, Mr. Morrison, any suggestions? Quickly, because we——

Mr. MORRISON. Yes. One suggestion that I think that we have to do is that we are a susceptible population. You know, what I would ask of the EPA is to acknowledge that and number two is to really acknowledge the fact that legacy asbestos is an issue for us and that we have to address that.

And one other thing, real quickly, Mr. Chairman: PFAS. We have to look at those substitute foams that we can use as firefighters that don't put us at risk for the exposure that we are today.

Mr. TONKO. Thank you. Thank you very much.

The Chair recognizes Mr. Shimkus, the Republican Leader of the subcommittee, for five minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

We want to, again, welcome you here and I want to welcome my colleagues who have joined the subcommittee.

These acronyms, this science, these agencies—just hearing this testimony would—just tires me out and, you know, and I have been in this space, especially the six years we worked on TSCA. The Frank Lautenberg Act took us five and a half, six years to work through.

And so I welcome my colleagues to this discussion and debate because it is just—this is just not an easy space and so we appreciate you all being in it.

For an example, it is, like, you have asbestos, PFAS, PFOA, and HBCD. All were really designed to help firefighters—fire retardant substances that are now—and a lot of them came on way before we even had any of these agencies, right.

We had—OSHA, came on in 1970, actually prior to the TSCA legislation in 1976. So, I always like to look back at the past to find out where we are at. That kind of explains why we got so many chemicals out there that we are trying to get our hands wrapped around because they were in and around or used before we even started thinking as legislators, hey, we need to do something about this.

So, hence, our movement to try to move things up and, hence, the importance of this hearing.

I want to go back to Mr. Grumbles and try to get this nexus of this OSHA–EPA debate vetted a little bit. So—and I pulled it up on the iPad, too—what is the role of OSHA in this process?

Mr. GRUMBLES. This process, the PMN process?

Mr. SHIMKUS. Just the safety of the—the workforce safety areas that we were—we have been discussing.

Mr. GRUMBLES. Oh, gosh. I could speak paragraphs——

Mr. SHIMKUS. Don't. Just briefly. Why do we have OSHA?

Mr. GRUMBLES. OSHA is to protect the workers. Implement regulations to protect workers.

Mr. SHIMKUS. Thank you. Would it be fair to say that to get a full picture of what is necessary to understand worker chemical safety you must understand the role of OSHA and its relationship with the EPA?

Mr. GRUMBLES. Yes.

Mr. SHIMKUS. When it comes to worker protection and safety, from your experience, where has a line been drawn between EPA and OSHA authority and involvement?

Mr. GRUMBLES. So in the workplaces I worked in, EPA's presence in worker safety and health was not much. The workers certainly knew EPA existed. We trained them in TSCA 80 and 8(c) rules because we needed their input.

They knew we had permits. They knew there were operating procedures that had——

Mr. SHIMKUS. Let me ask you this. Would you have concerns if EPA began writing its own specific worker protection, standards, and to significant new use rules for chemicals under the—under TSCA?

Mr. GRUMBLES. Yes, absolutely. I would just worry about the conflicts that occur—could occur in terms of differing requirements under OSHA and what EPA would write.

Mr. SHIMKUS. Right.

Mr. GRUMBLES. And, to me, that is the key issue of working out this what does consultation with OSHA mean.

Mr. SHIMKUS. Yes. And maybe we can help, as we move forward, because I do think there is an abutment of agencies, except for Mr. Kashkooli, which you noted that EPA is the sole authority under that and I would be interested in learning more, just the history of that, too, because there should be no differentiation between how we treat our workers and how we protect them, in my view.

Mr. Morrison, we all love firefighters so and so I am trying to understand this going into the burning building—pipes still wrapped with asbestos. You don't know it is there. We get it. We can all envision this. It could even crumble, airborne. What can we do about it? I mean, so what can OSHA or EPA do about that? That is what I am struggling with. That is my question. What can they do?

Mr. MORRISON. Well, I think OSHA could do a couple things here. One is the right to know. You know, we have to—we should have a right to know where that asbestos is when we respond to that call.

Mr. SHIMKUS. Right. Right.

Mr. MORRISON. Second, I think, OSHA can help us with the monitoring devices on the scene to make sure that we stay within our full protective ensemble until the air is safe or at a safer level.

Mr. SHIMKUS. But—OK, so they would have a monitoring device in the facility. I mean, they are not going to get there before you guys and start putting in a monitoring device.

Mr. MORRISON. A lot of—you know, a lot of the exposures that we have is during overhaul, too. I mean, it is not just, you know, we are in there. We put the fire out. Then we have to come back in and make sure the fire is completely out and extinguishing. We want to make sure that firefighters aren't taken off their SCBA——

Mr. SHIMKUS. Amen.

Mr. MORRISON [continuing]. Prior to doing that and they can't do that. They should not do that.

Mr. SHIMKUS. And we have seen numerous buildings torn down and all the work that has to be done—old schools, the tiles or, you know, the ceiling things——

Mr. MORRISON. Correct. Yes.

Mr. SHIMKUS [continuing]. And we have made great progress. But I think you made a good point. My time has expired. I want to thank you all for being here.

Mr. TONKO. The gentleman yields back.

Now the Chair will recognize Mr. Pallone, full committee chairman of Energy and Commerce, for five minutes to ask questions.

Mr. PALLONE. Thank you, Chairman Tonko.

Clearly, we have some differences of opinion on the panel between the chemical industry lawyer and the impacted workers.

Mr. Duvall, I appreciate your testimony because it shows exactly what industry wants from EPA on worker protections under TSCA which is, in my opinion, nothing at all, and I am going to focus my questions on asbestos because it is very serious as a threat to workers across the economy and we have known about its dangers for decades. But we are still importing it and it is still present in consumer products and even cosmetics in the U.S.

Mr. Duvall said in this testimony the EPA's proposed significant new use rule for asbestos would finally achieve much of what EPA tried to do in their '89 asbestos ban. But it is not a ban. It doesn't apply to any ongoing uses. It only applies to a limited set of old uses and it doesn't even ban manufacturers from resuming those uses.

All it does is set up a path for EPA to review those uses if a manufacturer chooses to resume them. So in light of that, I want to start with Dr. Finkel but most of this is just going to be yes or no. Otherwise, I will never get through it in the three minutes here.

So Mr. Finkel, do you believe that EPA's significant new use rule for asbestos is effectively an asbestos ban, as Mr. Duvall claimed? Yes or no.

Dr. FINKEL. No, I don't.

Mr. PALLONE. Do you think that asbestos should be banned, and do you think EPA is on track to ban it?

Dr. FINKEL. Hard to give a yes or no to two different questions. There are different forms of asbestos, but I don't think EPA is on track to ban the most dangerous ones.

Mr. PALLONE. And you don't think they are going to do it, obviously?

Dr. FINKEL. I am hopeful.

Mr. PALLONE. OK. You are hopeful. Good. I always like optimism.

And I want to turn to those on the panel who have had personal experiences with workplace hazards including asbestos. It can be easy when we are talking about technical subjects like risk assessments and regulatory maneuvers to lose sight of the people who are impacted.

But all of you should be our focus. So I really want to stress how valuable it is for us to hear from you.

So I want to start with Ms. Hutchinson. Do you and your colleagues worry about your exposure to asbestos and the impact it might have on your health?

Ms. HUTCHINSON. Yes.

Mr. PALLONE. OK. Do you think we should continue to allow the use of asbestos in this country?

Ms. HUTCHINSON. No.

Mr. PALLONE. And let me go to Ms. McGinnis. Auto workers have historically been exposed to asbestos in automotive parts and asbestos is still used in brakes and clutches.

Do you and other UAW members you know worry about the health effects of asbestos exposure?

Ms. MCGINNIS. Yes.

Mr. PALLONE. Do you think we should continue to allow the use of asbestos in automotive parts?

Ms. MCGINNIS. No.

Mr. PALLONE. Mr. Morrison, what impact does asbestos exposure have on firefighters in this country? That is a more open question.

Mr. MORRISON. Well, one effect it has is the—as the NIOSH cancer study said that we have twice the rate of mesothelioma from exposure to asbestos in our firefighter population and it was a study of three cities—Philadelphia, Chicago, and San Francisco.

So what that is telling us is that firefighters are being exposed to asbestos at a higher rate and right now we have to stop that. We have to end that currently.

Mr. PALLONE. All right. Now I have a yes or no. Do you think we should continue to allow the use of asbestos?

Mr. MORRISON. No.

Mr. PALLONE. OK. Do you have confidence that EPA will ban asbestos under the newly reformed TSCA?

Mr. MORRISON. I am going to be optimistic, too. I hope so—they do. Right now, no.

Mr. PALLONE. Everybody is—right now, no, but you would like them to. OK. Well, you know, in politics they always say the optimist wins the election. So maybe we will take a lesson from that.

Now I just wanted to say—I have a minute left—that when we adopted the Lautenberg Act, and I will point out to my friend, Mr. Shimkus, I think you said, what, four years—I would say more like 14 years.

I mean, I remember when we were meeting with Lisa Jackson, who was the New Jersey DP commissioner and then the administrator under Obama in the first—in the first four years and——

Mr. SHIMKUS. I was being optimistic.

Mr. PALLONE. You were being very optimistic. OK.

So when we adopted the Lautenberg Act, many of us in this room hoped that we were paving the way to an outright ban on asbestos. But I think it is clear now that EPA is not moving towards that ban and the Congress will have to act directly to ban asbestos.

So I hope we can work together in a bipartisan fashion as we did on the Lautenberg Act to move the Alan Reinstein Ban Asbestos Now Act and finally end the use of asbestos in this country. So I will be optimistic as well that we can do that.

Thank you, Mr. Chair.

Mr. TONKO. You are welcome, and the gentleman yields back.

The Chair now recognizes the gentlelady from the State of Washington, Mrs. Rodgers, for five minutes.

Mrs. MCMORRIS RODGERS. Thank you, Mr. Chairman, and I too want to thank everyone for being here today and sharing your insights on this important issue.

You know, we have several different Federal agencies that are involved. Our goal is to make sure that we are doing everything we can to protect workers and especially those who routinely handle all manner of potentially hazardous chemicals and to ensure that they are able to perform their duties in a safe and effective manner.

OSHA is involved, EPA is involved in guaranteeing the safety of these employees, whether it is TSCA or OSHA. I wanted to ask and I thought I would start with Mr. Duvall but if others want to answer, too—I wanted to ask about OSHA, specifically, how do you differentiate between the scope of protection for workers under OSHA and the suite of laws implemented and enforced by EPA and what protocols exist between OSHA and EPA for sharing information and deferring to each other when it comes to exposure issues?

Mr. DUVALL. OSHA's jurisdiction is entirely devoted to worker safety and protection. EPA also must consider worker safety but it also has to worry about exposures to the general population, other sensitive populations, and the environment.

The EPA worker protection provisions have typically referenced and built on OSHA requirements, which is appropriate. I would encourage EPA and OSHA to converse much more often and in more detail about the best ways that EPA can leverage OSHA requirements and make them effective in particular instances.

Mrs. MCMORRIS RODGERS. Would you speak to how information is currently shared and how they work—how we are deferring—if they defer to each other when it comes to these issues?

Mr. DUVALL. I spoke to a deputy administrator of OSHA last week about that very issue. He told me that EPA and OSHA meet monthly to discuss process safety issues and when I asked him about getting together to talk about TSCA issues, he said, oh, we have met several times over the years.

So I do not see a rigorous line of communication between the agencies, which I would encourage them to develop.

Mrs. MCMORRIS RODGERS. Mr. Finkel?

Dr. FINKEL. Yes, thank you.

I just wanted to clarify one thing that was said earlier. You know, I have worked at both agencies. Nobody likes duplication and unnecessary piling on of requirements.

But, in fact, for example, if the methylene chloride rule as it would have been promulgated had it looked the way it did in 2017 there would not have been a conflict.

OSHA got it down to 25 parts per million, not very well enforced. It is now—it is still about 70 ppm. EPA would have banned several uses of it. That would tell a narrow swath of an industry that there is no more need for controls because there won't be that chemical.

The new methylene chloride rule that we think is coming out will be conflicting because it is telling—it is headed towards a certification and training program for workers, which is going to duplicate the OSHA certification and training. It is not going to be helpful.

So just because there are two agencies involved doesn't mean it is duplicative at all.

Mrs. MCMORRIS RODGERS. OK.

Mr. Grumbles, some people have argued that it would be better if EPA rather than OSHA set permissible exposure levels—the PELs. Would you just speak to that question and maybe some of the concerns or practical effects of having PELs set by EPA?

Mr. GRUMBLES. Yes. So PELs, in my profession, have been a struggle forever. Everyone in the process is frustrated.

So we have got to find a better way to do it. Based on what has happened in the last 30 years, we have a lot of experience with how OSHA has done it, what barriers they run into, how they make their risk decisions and determine the permissible exposure limit.

For EPA process there is a document that describes how they do that in the new chemical review. But I am not sure that that process is similar enough and/or is as transparent as the OSHA process.

So I think we all would have some concerns if they started doing it certainly outside the new chemical notification process. But even in that process I think it would be better to have a little more transparency on what their process is.

Mrs. MCMORRIS RODGERS. OK. Thank you.

Mr. Morrison, I had the chance to meet with some firefighters earlier this week from Washington State. I learned about the work that you are doing on the exposure study of PFAS chemicals.

I represent Fairchild Air Force Base. We have had some issues around the base and are working right now to make sure that there is water made available and filtration systems for homes.

I wanted to just ask what is the—kind of the next steps. What is the plan to conduct a health effects study to better understand whether the detections might be found are indicating disease?

And I am out of time but maybe you can just follow up with me.

Mr. MORRISON. Yes, just real quickly.

Mrs. MCMORRIS RODGERS. OK.

Mr. MORRISON. We have—we are actually sponsoring a bill trying to protect our Federal firefighters that work in the military bases and one is the medical monitoring—would be a blood test to try to recognize right now.

What we have right now is we have to have some sort of—almost a moratorium on that—on the PFAS and look for safer substitutes.

But the problem with the safer substitute is that we have to make sure it is safer.

We just can't say substitute and then not really understand that. So for us right now it is removing that stock of PFAS away out of firefighters' contamination zone and getting into something safer.

Mrs. MCMORRIS RODGERS. OK. Thank you. I certainly want to work with you on that, and I will yield back. Thanks.

Mr. TONKO. The gentlelady yields back.

The Chair now recognizes the gentleman from the Commonwealth of Virginia, Representative McEachin, for five minutes.

Mr. MCEACHIN. Thank you, Mr. Chairman, and thank you for calling this hearing, and to all of our witnesses, thank you for sharing your expertise with us today.

Last week, I was pleased to host a briefing and partnership with Earth Justice to discuss some of the EPA's attacks on workers and community health protections, including the failure to adequately regulate some of the toxins we are discussing today.

We were able to hear from members of impacted communities. There is no one who can better explain what is at stake or the moral imperative to change our course.

I was not on this committee during its consideration of TSCA, but I appreciate the good work done by my colleagues to ensure protections for vulnerable populations including workers in disproportionately exposed communities.

Unfortunately, many workers in chemical facilities qualify as vulnerable and disproportionately exposed on two fronts—first, because of the way their workplace—first, because of their workplace exposure and second because they often live around the facilities where they work.

So, to me, the issue of worker protection is very closely tied into the issue of environmental justice.

Dr. Finkel, do you think the EPA is doing enough to protect disproportionately exposed communities around chemical facilities under TSCA?

Dr. FINKEL. No. You are exactly right about the nexus between where workers work and where they live. I have major concerns going back 30 years about EPA's—you know, the conventional wisdom is—you hear it all the time—EPA is very precautionary about its risk assessment.

Not the case. EPA is deliberately underestimating risk to a susceptible people of all kinds, workers and non-workers. So that is a constant struggle and, scientifically, they are still resisting modernizing and being appropriately precautionary.

Mr. MCEACHIN. For workers in chemical plants who live near their workplaces, do you think EPA is failing them twice over? I assume from your answer that you probably do believe that.

Dr. FINKEL. I mean, they have certainly have done a lot in terms of process safety, along with OSHA. But in terms of chronic exposures, no.

Mr. MCEACHIN. Thank you.

Mr. Kashkooli—did I pronounce that right?

Mr. KASHKOOLI. You did.

Mr. MCEACHIN. All right. I also see a serious concern that workers in some areas in some industries might receive better work-

place protection than some in less affluent or majority minority areas.

You mentioned historical inequities that have left farm workers less protected than other workers in other industries. Can you elaborate on what those historical references that you make?

Mr. KASHKOOLI. Thank you, Congressman McEachin, for asking that question. I know Congressman Shimkus earlier asked what was—what is the basis for why farm workers are treated different from all other workers. So I really appreciate you asking the question and given the time to ask.

So it is an ugly race-based history. In the 1930s when the United States passed most of our labor laws—Fair Labor Standards Act, National Labor Relations Act, and others—the principal population working as farm workers in the United States were African American. And I am not going to use the exact words that a member of Congress used at that time but I am going to quote minus one word, and this is what a Congressman said when they were voting on the law. Quote, "You cannot put an African-American and white man on the same basis and get away with it."

That is what said and those were the reasons why farm workers were specifically excluded from all national labor laws and that continued on to the Federal Insecticide and Fungicide Act.

So that was wrong then when farm workers were principally African American. It is wrong now when farm workers are principally Latino. Fortunately, in some States, those laws are now being changed.

Fortunately, last week on a bipartisan, unanimous basis, I should add, farm workers were finally included in equal set of protections—it was signed into law last Friday—on pesticides, not in any other area. But we now have a—finally, a way to move forward.

I will add that the exclusions include things like workers compensation in many States within the United States. So thank you very much for the question.

Mr. MCEACHIN. And thank you for your expertise.

And, Mr. Chairman, I only have 29 seconds so I will give them back to you. I yield.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes the gentleman from Ohio, Mr. Johnson, for five minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

You know, I hope at some point we can hear from the EPA on the issues being discussed today and perhaps OSHA as well. EPA's implementation of TSCA, which was recently amended, thanks to the bipartisan work of this committee, does provide opportunities for the agency to take steps to protect workers as well as consider data from important Federal partners like OSHA.

I think having the EPA and OSHA here to really flesh out that work could be beneficial for everyone in this room today and lead to a more constructive conversation.

Mr. Duvall, your written testimony mentioned TSCA Section 3, the definition there of, and I quote, "potentially exposed or susceptible populations."

Does that definition as it relates to workers only apply if EPA identifies those workers as relevant because those workers face higher than average risks of adverse health effects from a chemical's higher level of exposure?

Mr. DUVALL. The definition is based on EPA's discretions as identified by the administrator. So it is appropriate for the administrator to consider particular groups of workers rather than all workers if all workers are not affected.

Firefighters might be a perfectly appropriate group of workers to focus on. But since EPA has so much to do and so many areas to look at, it is appropriate for EPA to select the areas where it could be most effective under TSCA in protecting the different groups that it must address.

Mr. JOHNSON. OK. Well, following onto that, does TSCA, particularly Section 6, give the EPA discretion to choose whether and which workers will be the subject of a chemical's risk evaluation?

Mr. DUVALL. Again, EPA has discretion and the key area where that discretion is addressed is on the conditions of use that will be addressed in the scope of a risk evaluation.

That is where the legacy uses issue arises. The EPA must consider workers and the other areas that it has responsibility for. But the reality is the EPA has so much to do that it cannot effectively do its work if it tries to do everything for everyone.

Mr. JOHNSON. OK. Does TSCA authority pre-empt OSHA authority?

Mr. DUVALL. It does not. Section 9(c) of the act specifically states that EPA actions under TSCA do not pre-empt OSHA actions. I believe that is an indication that Congress always intended EPA and OSHA to work together on worker protection rather than to have EPA supersede OSHA.

Mr. JOHNSON. OK. Does TSCA Section 5(f)(5) require EPA to consult to the extent practicable with OSHA in evaluating workplace exposure issues in new chemicals?

Mr. DUVALL. Yes. There is a specific direction for EPA and OSHA to talk to each other. They have done so to some degree. It has not been very transparent.

I would encourage better and more transparent communication.

Mr. JOHNSON. OK. And does TSCA Section 9(a) address EPA deferring to the laws of other Federal agencies that might prevent sufficiently addressing an unreasonable risk determined by the administrator?

Mr. DUVALL. It does. Under Section 9(a), EPA under TSCA must consider the ability of other Federal agencies to regulate the same issue. Section 9(b) requires EPA to think about other EPA programs that can effectively address the same issue.

There is a procedure proscribed in those—particularly in 9(a), which is a little clunky, in my view. I think it is best read as encouraging a discussion and an open mind as to which is the best authority for addressing a particular issue.

Mr. JOHNSON. OK. Your testimony also states that, and I quote, "TSCA is not a particularly good statute for addressing asbestos remediation and disposal." Why is that?

Mr. DUVALL. The 1989 rule on asbestos similarly did not address remediation and disposal. It had to do with ongoing use—then ongoing uses of asbestos.

Since 1989, many ongoing uses have been discontinued and the significant new use rule is intended to prevent those discontinued uses from resuming.

In a separate activity, EPA is doing the risk evaluation on current ongoing uses. For the in-place asbestos that has been there in buildings from the 1920s onward, EPA is—I am sorry, the TSCA statute as opposed to, say, the RCRA statute, just is not well structured to focus on the kinds of demolition controls that the OSHA standards and the NESHAPs on asbestos and that 50-State asbestos abatement statutes address in extraordinary detail.

Mr. JOHNSON. OK. All right.

Thank you, Mr. Duvall.

Mr. Chairman, I yield back.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes the gentlelady from Delaware, Ms. Blunt Rochester, for five minutes.

Ms. BLUNT ROCHESTER. Thank you so much, Mr. Chairman, and for convening this hearing as well on this important topic, and also thank you to all of the witnesses for your testimony.

I hope we can all agree on both sides of the aisle that worker safety should be a top priority at EPA. Thanks to the bipartisan work of this committee, Congress has made major strides updating our nation's toxic chemicals laws to reduce environmental health risk for all Americans.

But reforming those statutes is only the first step. It will require a commitment of time and resources from the executive branch to implement those changes and protect workers.

President Trump's budget released earlier this week falls short. What little detail we have raises alarming concerns that environmental programs will be cut to pay for props. Even in areas where we should agree, the budget falls short, and I want to focus on one example relevant to today's hearing.

The president's budget for EPA pledges to, quote, "support healthier schools and create safer and healthier school environments for American children."

This is something that we call can support. But even here, the administration is ignoring worker risks. There is no mention of workers responsible for renovating and maintaining schools, the janitors who use chemicals to clean those buildings daily, or the teachers who work in the same potentially hazardous classrooms for years.

I have a set of questions that I wanted to ask Ms. Hutchinson and I will start off with the first one. Do you believe that safe and healthy schools should be a part of our infrastructure work this Congress?

Ms. HUTCHINSON. Absolutely.

Ms. BLUNT ROCHESTER. And should we ensure that school infrastructure improvements address occupational risks to teachers and other school workers?

Ms. HUTCHINSON. Yes.

Ms. BLUNT ROCHESTER. And what would you say are the most important occupational hazards to address as we work to improve our school infrastructure?

Ms. HUTCHINSON. Well, I definitely think asbestos is at the top of the list and also the water. So we bottle water in for drinking but we still wash our hands, and I don't have research to support this but we still wash our hands and every once in a while you might forget and wash a utensil that you use to eat with. I don't know what happens in the cafeteria. Again, we don't cook much food. So I am not sure how that is problematic.

But then there are other things that may seem very trite like the temperature in schools. The infrastructure of the school that I work in the windows blow out. It is cold. It is hot, depending on what the weather is.

And then the other thing that is not very pleasant to think about is the infestation of rodents—mice, roaches, rats. You know, this building is extremely old and while it houses about 850 students and maybe 75 educators and maybe 25 additional workers, that is a lot of people to keep everything spotlessly clean.

But if we had a new updated modern building, students would act different, faculty would act different, and we would, you know, have a nice space to learn in.

Ms. BLUNT ROCHESTER. Thank you.

Dr. Finkel, in the last series of questions to Mr. Duvall, I was curious to hear your take on what you believe the roles of the EPA and DOL, specifically OSHA, are or should be.

Dr. FINKEL. Well, again, I have been in both places. There is, I agree, untransparent but frequent communication. I am in favor of more of that.

The problem really is that at long last Congress said in this law that unreasonable risk, which has always in EPA's purview been more aggressive than at OSHA's—again, one in a million towards that level versus one in a thousand.

EPA now has a new responsibility to look around and see if there are unreasonable risks to workers and I will say again—this is my expertise—every risk to workers that OSHA has dealt with and every one they have not dealt with leaves behind unreasonable risk.

So EPA has a job to do, at least a job to consider. And so the idea that this is going to be solved by deferring to an agency that has reached the limits of its ability is crazy talk. I am sorry.

Ms. BLUNT ROCHESTER. And one other question I had, I know historically there was an MOU between Department of Labor and EPA. Can you give any insight on MOUs?

Dr. FINKEL. Well, there were—there were many in my time in the late '90s, early 2000s, obviously, about farm workers, field sanitation. I actually crafted one with EPA in North Carolina about the maximum achievable control technology standards for the air program, that we would get more of a chance to look at those and make sure that in fact some of the controls that EPA was ready to propose for stack emissions were not actually pushing the material back into the workplace and hurting workers.

So we have a history of doing that. I have no idea how that is going now, you know, without a head of OSHA right now.

Ms. BLUNT ROCHESTER. Thank you. And I know I only have one—no seconds—but MOU, memorandum of understanding—just I don't like to speak in jargon.

So thank you, Mr. Chairman, and I turn it back over.

Mr. TONKO. The gentlelady yields back.

The Chair now recognizes the gentleman from Georgia, Representative Carter, for five minutes.

Mr. CARTER. Thank you, Mr. Chairman, and thank all of you for being here. This is extremely important.

I have to admit to you that I get somewhat frustrated by some of the answers. I see—I get confused as to whether it is EPA or OSHA or who is responsible and particularly when it comes to these chemicals.

And, look, everyone up here wants a safe community. Everyone up here wants a safe working place. And I know all of you do as well, and whoever's responsibility it is we need to make sure they are doing it.

So I am a little bit frustrated by some of the responses I am getting. Not that it is your fault, and I am not frustrated with you. I am frustrated that it is not clear and that is just—I am just a little bit frustrated by that.

Mr. Duvall, it appears to me that really this hearing has been really focused on how EPA has not—has not responded or acted upon some of the regulatory actions from the past administration and I am just interested about the jurisdiction.

Does the EPA and OSHA—do they overlap and have similar responsibilities under various laws when it comes to some of these chemicals?

Mr. DUVALL. There is—they both have responsibility for worker safety. OSHA's only responsibility is worker safety. Worker safety is one of several priorities for EPA.

They have different tools in their tool boxes. They have different statutes. OSHA's statute is well designed for setting permissible exposure limits and both chemical-specific restrictions on how chemicals can be safely used in the workplace and the kinds of backstop provisions, which are important to protect workers.

EPA's statute is different. Section 6 was amended in 2016. It had not been function for a full 25 years and we are only now learning how EPA will implement Section 6 and I think we need to give it some time. It is learning as it goes.

But I can tell you that EPA is working extremely hard on worker protection and other aspects of its existing chemicals program under Section 6. Under Section 5, EPA has responsibility for reviewing individual chemicals that are developed through R&D and are proposed to be commercialized.

Mr. CARTER. OK. Let me ask you this. Can we make it any clearer? Do we need to make certain distinctions between the responsibilities of the two—of the two bodies here?

Mr. DUVALL. I think the responsibilities are clear in the statutes already.

Mr. CARTER. So, first of all, Dr. Finkel, do you want to respond to that?

Dr. FINKEL. Well, I like what he just said. I think the responsibilities are clear. OSHA sets permissible exposure limits. I don't

think they have done a great job. It is partly my responsibility that I didn't fulfil.

But EPA is now tasked with looking at uses and making hard decisions about whether certain uses are so unnecessary because of better substitutes or they are so dangerous that some uses should be banned not only for workers but for the people who breathe what the workers let out the door at night.

So I don't see any lack of clarity or duplication there. OSHA has done the best it can with, for example, methylene chloride and it is EPA's job to ask the question, "should we do more?" If they decide to do more, Congress has now given them the ability to do that.

Mr. CARTER. OK. I have got just about a minute left. Help me out here. Dumb it down for me. I don't know the difference in 5 and 6, Mr. Duvall. I am sorry. I probably should but I just don't.

So what can we do? What can we do better? That is our responsibility is set direction to these agencies. Tell me what we can do to OSHA and EPA to make sure that we got the safest working environment that we can have for our community.

Mr. DUVALL. I would say that one of the most important things that could be done is to fully fund both agencies. OSHA, in particular, is underfunded and needs——

Mr. CARTER. OK. Aside from funding. I saw that coming.

[Laughter.]

Mr. CARTER. Seriously. Thirty seconds left. Anyone.

Mr. DUVALL. My sense is that EPA should work more closely with OSHA to get the best worker protection measures that are appropriate under their respective——

Mr. CARTER. Everybody agree with that?

Mr. Morrison?

Mr. MORRISON. Yes. I think what we are finding right now is, like, on the fire department—there are fire departments in your area that are governed by recommended practices—NFPA.

We would like OSHA to work with EPA to make these rulemaking process that the firefighters are protected on that and that relationship—I don't see why it could not work and it should work—EPA and OSHA working together to protect the workers on the—you know, out there.

Mr. CARTER. Dr. Finkel?

Dr. FINKEL. Yes, I have got a suggestion. Before I retire, I would love to see the beginning of a conversation that OSHA does a great job with worker safety but not as great with worker health. There should be one national agency dealing with chemicals that go out of the workplace into the environment. Whether it is at EPA or OSHA, I don't care. But the separation is the problem.

Mr. CARTER. Great. Thank you, Mr. Chairman, for your indulgence. I yield back.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes the gentlelady from Illinois, Representative Schakowsky, for five minutes.

Ms. SCHAKOWSKY. I want to thank you, Mr. Chairman, for calling this hearing.

Oversight of the Lautenberg Act is long overdue. I am very concerned about—that implementation of the act has veered from congressional intent, putting vulnerable populations at work.

Certainly, we have heard about firefighters. But you also mentioned about students, particularly, low-income, students of color, places that are low-income with asbestos and lead in the water, which is also true, by the way, in Illinois where we have seen that in Chicago.

I am particularly concerned about implementation of the changes to the new chemical program which were intended to ensure that, moving forward, all new chemicals had a finding that they were—that they were safe.

Ensuring that new chemicals are safe is essential to addressing regrettable replacements where one toxic chemical is being phased out just to replace it by another analogous and equally toxic chemical.

Importantly, the Lautenberg Act blocked EPA from finding a chemical safe if it poses an unreasonable risk for a vulnerable subpopulation such as workers.

Mr. Duvall noted several new chemicals that EPA allowed on the market despite finding serious risks based on an assumption that persons are—that personal protective equipment would be used.

So, Mr. Finkel, is this assumption reasonable? I think you mentioned that, that it is going—or someone did about going along with the personal protection is not reasonable.

Dr. FINKEL. It is certainly not reasonable in the early stages, the way EPA has sort of waved their hands and made it go away. They are supposed to look for unreasonable risk under reasonably foreseeable conditions and, to me, as a former enforcement official, the non-use of respirators and PPE or the non-requirement that it be is the most foreseeable thing possible.

Now, after they find that there is unreasonable risk if you don't use all this equipment properly, if they want to do something more to see that that actually happens, that is one thing.

But at the get-go to say "all is well" because there is some guidance document somewhere that tells the workers to put on this mask that does or doesn't work is abdication.

Ms. SCHAKOWSKY. Are the workers required to know about this as well or is it just the person that is in charge implementing the rule?

Dr. FINKEL. No, the OSHA Hazard Communication Standard does require the employer to make available all these data sheets for the workers. So they are supposed to be informed.

But it doesn't do them any good if the mask that they are wearing is not appropriate, if it is not fit properly. They can complain and there is a whole history of how that goes.

Ms. SCHAKOWSKY. All right. It seems to me that if EPA is relying on personal protective equipment to address the risk to workers, it should impose requirements for the use of such equipment.

But my understanding and from what you have said it ought—it may not—may or may not be. So is this an enforcement issue?

Dr. FINKEL. Yes, but I do want to say I am not trying to suggest that I think EPA should get into the personal protective equipment

business. OSHA has always said, with good reason, that PPE is the last line of defense.

So EPA should be in the engineering control and the use-ban business, which it is if it was doing what it is supposed to do. EPA should not be in the business of saying, "we are going to protect workers by respirators and gloves." They should be assessing what the degree of protection is.

Ms. SCHAKOWSKY. So is this, again, the problem of the dual agencies and conflicting or at least misunderstood jurisdiction?

Dr. FINKEL. Again, I don't think so. I think Congress intentionally gave EPA some new tools that OSHA simply doesn't have, and that EPA should use them.

Ms. SCHAKOWSKY. OK.

So, Mr. Duvall, you cited some statistics in your testimony regarding the new chemicals program but they seem to gloss over the major change EPA made in July 2018 to speed up the new chemicals program.

So, Mr. Duvall, does the statistic you give for the number of new chemicals allowed onto the market based on a, quote, "non-likely to present an unreasonable risk," unquote, finding distinguish between the period before July 2018 and the period after?

Mr. DUVALL. The number of not likely to present determinations is only after June 2016.

Ms. SCHAKOWSKY. You are shaking your head, Dr. Finkel.

Mr. DUVALL. But prior to June 2016 EPA did not make a determination that a chemical was not likely to present. It simply made it—decided that it could not make a finding that a chemical may present an unreasonable risk and having decided not to make that finding the chemical was allowed onto the market.

Ms. SCHAKOWSKY. Unfortunately, my time—oh, no—yes, my time is up. Sorry.

Dr. FINKEL. You said 2018 and he said 2016. That is why the answers are different 52 of the last 65 since 2018 have been "no significant risk." There was a change very much as you suggested.

Mr. TONKO. The gentlelady yields back.

The Chair now recognizes the gentleman from California, Representative McNerney, for five minutes.

Mr. MCNERNEY. I thank the Chair and the ranking member for working together on this issue. I appreciate that. I thank the panellists, too, especially Mr. Morrison. I appreciate the firefighters taking initiative on some research efforts. We should be doing that and we are not, so you are stepping up. I appreciate that.

And Mr. Kashkooli, your story about the farm workers hits home. I have an Agricultural district in the Central Valley. We don't do cabbage. That wasn't my district. But we do have farm workers and they put their lives on the line to feed us and it is something that we need to appreciate more and give them more protections. So I appreciate your participation today.

There are over 84,000 chemicals on TSCA inventory that should be assessed and regulated under the existing chemical program. Now, while working on the TSCA reform we heard extensive testimony about the problems with the existing chemical program.

Unfortunately, it seems that many of the problems remain more than two years after the passage of the Lautenberg Act.

Mr. Finkel, how many chemicals has the EPA required to be tested under Section 4 since we passed TSCA reform here?

Dr. FINKEL. Hoping to defer to somebody else on that one. I don't know that answer.

Mr. MCNERNEY. The answer really is there are none. The answer is that there are none.

Dr. FINKEL. None. OK. That is why I didn't know.

Mr. MCNERNEY. So I think that is a problem. We haven't made progress in the last two years.

So I get to start my five minutes over?

We also heard testimony about and claims about confidential business information. Mr. Finkel, is that a problem that has been solved?

Dr. FINKEL. No. My understanding is there are a couple of new EPA assessments where they talk about health studies—you know, case reports on EPI studies inside of workplaces—being CBI and I think that is a problem.

I gather they just released something that says that may have been a mistake and now they are saying it was because it was a foreign workplace. But no, this stuff should not be—it could be redacted but the health information is essential.

Mr. MCNERNEY. OK. So that is not very encouraging either.

Dr. FINKEL. No.

Mr. MCNERNEY. One of the central flaws with TSCA that we determined was that the chemicals were based—evaluated on a risk standard, which was cost benefit, basically, and so that was changed with the Lautenberg Act.

The statute is now crystal clear that the EPA cannot use cost benefit analysis and has to use risk only analysis and I think that is an important advancement.

But under this regime, cost considerations are supposed to be reserved until after the risk evaluation is complete. But at this stage, an EPA has not even reached any of the first 10 chemicals going through the existing chemical program.

So we are telling them not to use cost benefit. Use only health risk but of the 10 chemicals not a single one has been evaluated.

Mr. Finkel, do you think the EPA has implemented this statutory requirement, or do you see non-risk factors coming into the consideration?

Dr. FINKEL. Well, they are certainly not on track to finish what they need to finish by the end of this calendar year. You know, they will probably ask for an extension but I don't think they are going to make that either.

I don't see cost coming in necessarily but I think the—what we have been talking about, the reliance on compliance with guidance documents is basically they are not doing their job to think about reasonably foreseeable exposure, which is the basis of where the risk comes from.

So you are right that we haven't seen them try to use cost yet, but they are trying not to even have to get there by saying that there are no unreasonable risks when there, clearly, are.

Mr. MCNERNEY. Thank you. Do you think the EPA is implementing the existing chemical program as required by the Lautenberg Act?

Dr. FINKEL. Well, it is not promising so far. They had, in my view, a perfectly reasonable and long-overdue proposal on methylene chloride and now it is being split in half and sent back to the drawing board.

They had a proposal to put 1-bromopropane on the HAPs list and it is sitting in limbo. So no.

Mr. MCNERNEY. Have you heard of the term chemical trespass?

Dr. FINKEL. Yes.

Mr. MCNERNEY. Would you explain it?

Dr. FINKEL. I am going to have a hard time with that because I have heard it in different ways and I don't want to get into a pejorative—if you could just maybe rephrase it for me a little.

Mr. MCNERNEY. OK. Well, basically, I am wondering is the EPA making any progress to reduce the threat of chemical trespass and has the passage of the Lautenberg Act helped at all?

Dr. FINKEL. I may have to defer. If you are talking about incursions into chemical plants where there is a security and safety——

Mr. MCNERNEY. No, I am talking about just general exposure to chemicals in the general environment. I mean, we are all exposed to chemicals that weren't here in the environment a hundred years ago.

Dr. FINKEL. No, he set me straight about biomonitoring and, you know, that's a tough issue with privacy and autonomy issues. But yes, we need more data on the body burdens of chemicals in the environment that are getting into both workers and non-workers, and for some good reasons but for some delay and obfuscation, we are not—EPA is not moving fast enough on this.

Mr. MCNERNEY. Thank you, and I am going to yield back and I will look forward to additional oversight on those issues, Mr. Chairman.

Mr. TONKO. The gentleman yields back.

The Chair now recognizes the gentlelady from Colorado for—Representative DeGette, for five minutes.

Ms. DEGETTE. Thank you so much, Mr. Chairman. I want to thank you for having this hearing. The chairman and I were both part of the team that helped work on the much-anticipated and long-delayed reauthorization of TSCA.

But when we did that, we thought that the EPA would actually act to enforce the law. So that is why it is good—I know Mr. Shimkus thought they would, too—and so that is why I think it is really good that we are having this hearing today.

I want to ask about just a couple specific issues, since I know many other members have asked questions. When EPA administrator—then Administrator Scott Pruitt appeared before this committee in December 2017 I asked him when we could expect to see a final ban of methylene chloride.

He had no answer for me then. But last year after meeting with some of the families of people who were killed by this potent toxic chemical, the secretary committed of finalizing the ban.

So now, fast forward two years later, it is 2019. The ban still has not been finalized. It was reported yesterday that we might see a final rule from EPA on methylene chloride this week.

But from what we can tell, commercial uses will not be banned. So I got to say I think this is an extraordinary disservice to dozens

of workers who have been killed by commercial uses of this chemical.

Dr. Finkel, how dangerous is methylene chloride?

Dr. FINKEL. It runs the gamut. As you say, it is acutely toxic. It can asphyxiate people in bathtubs and in other settings. We did a case where somebody poured a small container on a squash court, if you know how big that is. Closed the door and was overcome by fumes in a gigantic cubical area from one can. It is also a carcinogen and is also a neurotoxin.

So we did the best we could. I did the best I could 20 years ago and we are waiting for the next step.

Ms. DEGETTE. Right. In your view, should the next step include banning commercial uses of methylene chloride?

Dr. FINKEL. Not necessarily all but certainly the ones that were proposed three years ago, yes. Paint stripping, coating removal—that is where the substitutes exist and the dangers are apocalyptically high.

Ms. DEGETTE. Do you think that OSHA regulations are sufficient to protect workers from this substance?

Dr. FINKEL. The number of acute fatalities has gone down slightly. But, again, we can't cover independent contractors, public sector employees, and we did the best we could for the carcinogenicity. But the 25 ppm limit is way, way too high.

Ms. DEGETTE. And do you think that if the current commercial uses of methylene chloride continue that customers will be protected?

Dr. FINKEL. I have to see how they come up with this splitting of the rule. The original rule said at least consumers would be protected because it would no longer be sold in quantities—in containers less than 55 gallons.

If they go back on that in order to make it easier for commercials users then, essentially, consumers are just where they were except that, thank goodness, Lowe's and Home Depot have done the right thing and said, you can't buy it from us.

Ms. DEGETTE. They did it on their own. Yes.

Dr. FINKEL. Yes. On their own. Of course.

Ms. DEGETTE. OK. I want to ask you now about 1–BP, bromopropane. I am just going to call it BP. How dangerous is this substance for workers and the general public, Dr. Finkel?

Dr. FINKEL. Sorry to say, more dangerous than methylene chloride. It is a carcinogen. It is a neurotoxin at lower levels than methylene chloride; we knew about 1–BP just barely in 1997 when we finished that rule, but we had no idea that it would be as aggressively touted as a substitute that it has been ever since.

Ms. DEGETTE. And do you think the EPA is meeting its obligations under the Clean Air Act and the Lautenberg Act with respect to this chemical?

Dr. FINKEL. Absolutely not, and it goes back beyond the last three years as well.

Ms. DEGETTE. OK. Do you think that Nancy Beck, who is currently the deputy assistant administrator with responsibility for the Lautenberg Act should recuse herself from decisions regarding 1–BP?

Dr. FINKEL. Well, I called for that in written comments to the agency on this docket.

Ms. DEGETTE. Right.

Dr. FINKEL. I have read her testimony before she came to EPA and it is one erroneous sentence after another trying to exculpate this chemical from what we already know about it. It is inappropriate.

Ms. DEGETTE. Thank you.

Thank you, and I also want to thank all of our representatives of working people for coming here today and talking to us about what his happening in the workplace.

You know, folks, it is like Ms. McGinnis said. People are just trying to put food on the table for their families. Several other of our witnesses said that and sometimes they can't affect what chemicals they are dealing with in the workplace and so that is why we have the EPA because they are supposed to enforce the laws on a science-based effort for everybody and we are going to make sure that happens.

So thanks. I yield back.

Mr. TONKO. The gentlelady yields back.

The Chair now recognizes the very patient gentleman from Florida, Representative Soto, for five minutes.

Mr. SOTO. Thank you, Mr. Chairman.

On January 3rd of this year, Tampa Bay Times' headline read, "Florida Officials Delayed Telling Residents About Tainted Water, Emails Showed."

Linda Lawson thought little of drinking the water from the decades-old well in her back yard less than a half a mile down the road from the Florida State Fire College in Ocala. That changed when her daughter-in-law answered to State workers knocking on her door one morning, or one afternoon. They came to test the water, a worker said.

In August, our local DEP in Florida confirmed that flame retardants containing PFAS and PFOA had been used by the fire college in the past. In early September, the college was told only to drink bottled water.

It took four months for State officials to notify the community and, recently, six former employees of the fire college have joined a class action suit.

Obviously, we want to be proactive on this issue.

Mr. Morrison, is the EPA actively pursuing PFOA and PFAS risks to firefighters in the community at large?

Mr. MORRISON. No, I do not think that they have really stepped up to the plate to do that. And just in full—you know, just to add, my brother was a firefighter. He was at that academy. He actually taught at that academy. He actually has kidney cancer. But he actually was suffering from that, and what we have right now——

Mr. SOTO. I am sorry to hear that, sir.

Mr. MORRISON. Thank you for addressing this. But I think what EPA has not done is they have not looked at the seriousness of what it has cost not only for the workers there but for the drinking water in there.

Mr. SOTO. Recently, we had an op-ed in our local paper discussing an attack on science that is a threat to our water and the—

a Ph.D., Deepthi K. Weerasinghe, said, "A systematic pattern of undermining science is occurring at the Federal level at the EPA and that vulnerable communities face disproportionate burdens of health and environmental justice."

Dr. Finkel, would you agree that there is a systematic pattern of undermining science at the EPA currently and that it does disproportionately affect vulnerable communities?

Dr. FINKEL. Yes. Unfortunately, I have to say I agree with that. Obviously, it doesn't permeate all the way through to the career levels and affect all programs. But what we are seeing in terms of the climate change program and what we have been talking about today, I don't have time to talk about it but in my written testimony there are some—there are some profoundly unscientific things being said about these chemicals by career and by political officials at EPA.

Mr. SOTO. Give us a little flavor of what you mean by profoundly unscientific.

Dr. FINKEL. Well, I am going to single out Bill Wehrum, who is the new head of the Air Office. About a month before he was confirmed in that role—this hits me hard in terms of being a former OSHA official—he was at an attorney advocating against the OSHA silica standard, which was upheld in the DC Circuit, and he said, among other things, quote, "People live in dusty environments all the time and it doesn't kill them."

So a fundamental misunderstanding of what risk is and a fundamental disdain for the people who work in this country. I was just—it is hard to shock me these days but that really shocked me.

Mr. SOTO. Thank you, Dr. Finkel.

My next questions are from Ms. McGinnis, Ms. Hutchinson, and Mr. Kashkooli. The—my constituent goes on to say that the EPA and the administration is stacking science advisory groups and hollowing out agency positions and monitoring enforcement.

We will start with Ms. McGinnis and go down the line. Do you believe this is happening and how does this affect workers?

Ms. MCGINNIS. I am not sure I understand the question. Could you——

Mr. SOTO. Do you believe that the administration and the EPA is hollowing out agency positions in monitoring and enforcement and how is this affecting workers?

Ms. MCGINNIS. I don't really know how to answer that. I will pass.

Mr. SOTO. OK. Ms. Hutchinson, would you say that there is a hollowing out of agency positions in monitoring and enforcement and, if so, how would that affect workers?

Ms. HUTCHINSON. I am not so sure how to answer that as well. I just know that things that happen in schools are not communicated. So I would guess to say no.

Mr. SOTO. OK. Let us simplify the question. So if there were less folks in monitoring and enforcement at the EPA, would that affect workers in general, Ms. McGinnis, at UAW and other facilities?

Ms. MCGINNIS. I think so, yes.

Mr. SOTO. And how so?

Ms. MCGINNIS. Well, you have less hands in the fire so you have less people making the decisions on what is acceptable and what is not. I don't know if that answers it or not.

Mr. SOTO. Sure. And under the more simplified version of the question, Ms. Hutchinson, do you have anything to add on behalf of our teachers?

Ms. HUTCHINSON. I would agree.

Mr. SOTO. And, Mr. Kashkooli, do you believe that there is a hollowing out of agency positions in monitoring and enforcement, and even if you don't, should that actually be true would that affect our farm workers?

Mr. KASHKOOLI. So yes, it will impact farm workers and I can answer the question. EPA right now is not listening to the scientists that they do have. Career scientists, both in 2014 and 2016, were very clear that chlorpyrifos is toxic and reduces the IQ for children.

It is the same finding that scientists found for everybody else back in 2000. It was prohibited use for everyone but agriculture. And so in rural areas now for the last 19 years scientists have now conclusively shown that it reduces IQ for children.

And so EPA—the current EPA is not listening to the staff that they do have on and——

Mr. SOTO. My next question is for——

Mr. KASHKOOLI. Sorry. One other——

Mr. SOTO. Sorry. My time is limited, sir.

Do we see a hollowing out of agency positions, career EPA officials, and what effect does that have?

Dr. FINKEL. I have read about it. I certainly have to look at next year's budget to see how much worse it is going to get. I can certainly say that is happening at OSHA which has no head and which has reduced its enforcement.

So these are the overmatched people who are trying to get to 8 million workplaces with 2,000 people and now they are down to, I think, 1,650, something like that.

Mr. SOTO. So it is safe to say that in EPA and OSHA were not given sufficient staff and, therefore, enforcement at a level that is appropriate is not happening right now?

Dr. FINKEL. No, and it hasn't happened in a while—I was not expecting to see so little progress in enforcing the methylene chloride standard that I helped write, as I have found.

Mr. SOTO. My time has expired.

Mr. TONKO. The gentleman yields back. That, I believe, concludes the list of colleagues looking to question the witnesses.

We thank you again for participating in what is a very important topic. I request unanimous consent to enter the following into the record:

We have a letter from the Asbestos Disease Awareness Organization, a statement from the Environmental Defense Fund, a study published in "Environmental Health Perspectives," a report by the Government Accountability Office entitled "Multiple Challenges Lengthen OSHA's Standard Setting."

We have a letter from the International Union, UAW; comments by the International Union, UAW; on EPA's proposed changes to the risk management program. We have a letter from the

Chlorpyrifos Alliance to USDA; Secretary Perdue and EPA Administrator Wheeler; a fact sheet on the use of chlorpyrifos in agriculture; a letter from the Pesticide Registration Improvement Act—PRIA—Coalition; a letter from the Safer Chemicals Healthy Families Coalition; a letter from Alexandra Dapolito Dunn, assistant EPA administrator; a letter from TSCA New Chemicals Coalition, NCC; a letter from Riki Ott with the Alert Project; and a report by the Government Accountability Project entitled, "Deadly Dispersants in the Gulf: Our Public Health and Environmental Tragedies the New Norm for Oil Spill Cleanups."

We have a public—a list of public comments submitted by the Government Accountability Project on EPA's proposed rule to Sub Part J of the National Oil and Hazardous Substances Pollution Contingency Plan that governs the use of dispersants.

We have a photo documentation of dispersant contamination and, finally, a testimony from Dr. Riki Ott on the Trans Mountain Pipeline.

We ask unanimous consent that they be incorporated into the record.

Mr. SHIMKUS. Mr. Chairman, reserving the right to object. I think the committee staff are working to reconcile some of this stuff. So I don't think, in the end, we will. But if I can reserve that right and we can visit that in the near future I would appreciate it.

Mr. TONKO. Right. The gentleman asked to reserve and that request is granted.

With that——

Mr. SHIMKUS. Mr. Chairman?

Mr. TONKO. Yes.

Mr. SHIMKUS. May I just—I also want to thank you all for being here. Just for the laymen, this is a very—just a very challenging difficult process. So your expertise—I just—Dr. Finkel, I didn't want to object or intervene in your answering. But you skated closely to impugning the intent and the work of Mr. Bill Wehrum. He is not here—he doesn't have the right to defend himself at this time and I would caution you not to do that.

Dr. FINKEL. Well, I was asked a question and it is in the public record that he said that.

Mr. SHIMKUS. You know, unless the chairman wants to give you time—I am just making that statement as an observation.

Dr. FINKEL. Fair enough.

Mr. TONKO. And I ask our Republican Leader again to review two more submissions into the record. We have from the Gainesville Sun an opinion via a letter that is entitled, "A Tax on Science: A Threat to our Water," and then, finally, from The Buzz, "Florida Officials Delay Telling Residents About Tainted Water, Emails Show."

Mr. SHIMKUS. Again, we will reserve and put it in the package and my expectations will be—will all be good.

Mr. TONKO. Thank you. The request to reserve is granted.

I would like to thank again the witnesses for their participation in today's important hearing. I remind Members that pursuant to committee rules they have 10 business days by which to submit ad-

ditional questions for the record to be answered by the witnesses who have appeared.

I ask each witness to respond promptly to any such questions that you may receive, and at this time, the subcommittee is adjourned.

[Whereupon, at 12:40 p.m., the committee was adjourned.]

[Material submitted for inclusion in the record follows:]

THE PREPARED STATEMENT OF HON. WALDEN

Mr. Chairman, thank you for recognizing me and for calling today's hearing to emphasize the importance of workplace safety.

We may disagree, Mr. Chairman, on the ways to solve various problems. We may disagree on the scope of certain problems. We may even disagree on the costs of the problem. But I know we all agree that all working Americans, whether unionized or not, should not have to fear injury or illness every time they go to work. I think we all agree that facilities, both private and municipal, should be good neighbors and control their pollution.

We should also agree that the Federal Government needs to follow the rule of law in setting public health standards.

Our Federal Constitution gives us, Congress, the power to write the laws and provides the Executive Branch the power to interpret and enforce those law. Hopefully we write the law so clearly that the implementingAgency doesn't have to ″interpret″ it. If we aren't clear, our Constitution does not give another branch the power to rewrite it or make it up. Instead, it requires that Congress go cleanup the mess of the law that it made.

Which is why I am intrigued by this hearing today. I am looking forward to the compelling testimony we are about to hear but I'm also interested to learn how occupational safety is now the domain of the Environmental Protection Agency.

As I understand it, Congress, through the Occupational Safety and Health Act has been quite clear that the Occupational Safety and Health Administration at the Department of Labor is primary responsibility for Federal rules for worker safety and health.

While our environmental laws try to keep exposure to pollution and hazards at bay regardless of whether the person is working, our environmental laws have the Environmental Protection Agency defer to OSHA and the National Institute of Occupational Safety and Health for protections in the workplace.

March 12, 2019

The Honorable Frank Pallone, Chairman, U.S. House Committee on Energy and Commerce
2107 Rayburn House Office Building
Washington, DC 20515

The Honorable Greg Walden, Ranking Member, U.S. House Committee on Energy and Commerce
2185 Rayburn House Office Building
Washington, DC 20515

The Honorable Paul Tonko, Chairman, U.S. House Subcommittee on Environment and Climate Change
2369 Rayburn House Office Building
Washington, DC 20515

The Honorable John Shimkus, Ranking Member, U.S. Subcommittee on Environment and Climate
2217 Rayburn House Office Building
Washington, DC 20515

RE: EPA's Failure to Protect Workers from the Risk of Asbestos Exposure

Dear Chairmen Pallone and Tonko and Ranking Members Walden and Shimkus:

I am writing on behalf of the Asbestos Disease Awareness Organization (ADAO), the largest independent asbestos victims' organization in the United States. We are grateful to the Environment and Climate Change Subcommittee of the Energy and Commerce Committee for holding this important hearing on the failure of the Environmental Protection Agency (EPA) to protect workers from dangerous toxic chemicals under the Toxic Substances Control Act (TSCA).

Why Asbestos Is a Serious and Ongoing Health Threat

Asbestos causes incurable mesothelioma, lung cancer, cancers of the gastrointestinal system, and other fatal diseases. Experts agree that there is no safe level exposure to asbestos, and every year, an estimated 40,000 Americans die from asbestos-related diseases, or 110 people a day. According to the National Institute of Health, work-related asbestos exposure is responsible for the vast majority of asbestos-caused deaths. No substance in history has posed a greater threat to the health of workers.

Workers, especially those in the chlor-alkali industry handling raw asbestos, are at heightened risk, yet their employers refuse to switch to safer substitutes, although it is demonstrated that such substitutes are readily available. The danger extends beyond manufacturing plants — firefighters and school teachers are among the workers at highest risk for asbestos exposure and related diseases.

RE: EPA's Failure to Protect Workers from the Risk of Asbestos Exposure

While more than 60 nations around the world have completely banned asbestos, importation and use of asbestos and most asbestos-containing products are permitted under US law. Many people are surprised that asbestos is a lawful product in the US and that workers and consumers continue to be exposed to its deadly threat.

In fact, in the absence of a ban, asbestos and asbestos-containing products continue to be imported into the United States without restriction. In a recently-issued report, the United States Geological Survey (USGS) found that in 2018, imports of raw asbestos into the U.S. spiked by 125 percent. The USGS also stated that, in addition to the 750 metric ton of raw chrysotile asbestos, an "unknown" quantity of asbestos was imported in asbestos-containing products, including asbestos-containing brake materials, rubber sheets for gaskets, tile, wallpaper, and potentially asbestos-cement pipe and contaminated knitted fabrics. These products are putting both workers and consumers at risk, and it is troubling that we lack meaningful information about the amounts of asbestos these products contain, how they're used, and the nature and extent of ongoing worker exposure for which they are responsible.

You can find more details about the USGS data in our accompanying press release.

EPA's Weak and Limited Response to the Asbestos Threat under TSCA

ADAO and other groups believe that strong and comprehensive legislation banning asbestos is essential given EPA's long-standing and continuing failure to effectively address the asbestos threat under TSCA. The Alan Reinstein Ban Asbestos Now Act of 2019, introduced in the House just last week by Mr. Pallone, Ms. Bonamici, Mr. Tonko and several other members of this Committee, would achieve this goal and should be expeditiously passed by the House.

Under the Trump EPA, any hope that EPA would meaningfully address asbestos has evaporated.

In the late 1980s, EPA was on a path to impose comprehensive restrictions on asbestos. In 1989, the Agency issued a rule under section 6(a) of TSCA prohibiting manufacture, importation, processing or distribution in commerce of asbestos in almost all products based on a determination that asbestos presented an "unreasonable risk of injury" under TSCA section 6. However, despite the comprehensive risk analysis supporting the rule, the Fifth Circuit Court of Appeals overturned the ban in 1991 for reasons unrelated to the dangers of asbestos. The court decision later became the poster child for the inability of TSCA to support meaningful action on widespread and unsafe chemicals. As a result, Congress enacted the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act (LCSA), strengthening the law's provisions for chemical risk evaluation and regulation.

In December 2016, shortly after the passage of the LCSA, EPA selected ten chemicals for initial risk evaluations. Asbestos was among these substances, thereby recognizing its lethal danger to public health. ADAO and many other observers expected that the new law would enable EPA to reinstate the comprehensive ban on asbestos use it had imposed in 1989.

However, any expectation that EPA would take meaningful action on asbestos was dashed by its 2017 scoping document and June 2018 problem formulation for the asbestos risk evaluation. Through a combination of legally indefensible exclusions and loopholes and deviations from accepted scientific methods, the Agency is on a path to produce an asbestos risk evaluation that ignores important exposure pathways and at-risk populations and reaches grossly misleading and inadequate conclusions about asbestos' ongoing and future dangers to public health.

To cite just a few of these deficiencies:

- EPA excludes ongoing and future use and disposal of "legacy" asbestos products in residences, schools, commercial building and infrastructure -- a pervasive source of exposure and risk throughout the US -- on

the basis of a groundless assertion that this use and exposure do not comprise "conditions of use" subject to TSCA.

- EPA excludes Libby Amphibole, whose presence in the environment because of historical mining activities and in attic insulation installed in millions of homes poses a serious threat to health, on a similarly unsound basis.

- EPA refuses to examine the risks of reintroducing discontinued asbestos products even though its authority under TSCA clearly extends to these products and a permanent ban would provide critical protection against the return of these products to U.S. commerce.

- EPA likewise refuses to consider the risks of asbestos from releases to air and soil. These are important pathways for occupational and general population exposure: asbestos fibers are released into ambient air during the maintenance, renovation and demolition of asbestos-containing buildings and large and ever-increasing amounts of asbestos debris enter waste streams.

- The only asbestos health effects EPA will consider are lung cancer and mesothelioma. Yet asbestos has been linked to ovarian cancer, cancer of the larynx, gastro-intestinal cancers and kidney cancer. Non-malignant diseases are also caused by asbestos, including asbestosis and asbestos-related pleural thickening.

- The problem formulation excludes the risks presented by releases of asbestos during fires, terrorist actions such as the 9/11 World Trade Center attack and natural disasters. Yet a 2013 study by NIOSH of firefighters in three cities found that "[t]he population of firefighters in the study had a rate of mesothelioma two times greater than the rate in the U.S. population as a whole" and that "it was likely that the[se] findings were associated with exposure to asbestos, a known cause of mesothelioma."[1]

ADAO and other groups have commented on these deficiencies in the risk evaluation but we have no confidence that EPA will reconsider the path it's on.

The Threat to Teachers and Students from Lax Implementation of AHERA

Schools represent an important source of exposure to legacy asbestos and the release of asbestos into school buildings as a result of poorly performed repairs, remodeling and renovation of these buildings is a serious and ongoing threat to teachers, workers and children themselves. EPA is not only failing to address this threat in its risk evaluation but is abdicating its responsibility to enforce the Asbestos Hazard Emergency Response Act (AHERA), which Congress passed in 1984 for the very purpose of preventing unsafe exposure to asbestos is schools.

AHERA is part of TSCA and is within the jurisdiction of the Office of Chemical Safety and Pollution Prevent (OCSPP). While the states have frontline obligations to implement AHERA, EPA performs a critical oversight role by inspecting schools and evaluating school district compliance. Thus, it is disturbing that a recent report of the EPA Office of Inspector General (OIG) found that, even though the EPA was responsible for conducting AHERA compliance inspections for the majority of states, its inspections were far fewer than by the states overall despite evidence that many districts had poor management programs and were putting teachers and students at risk. OIG emphasized that the "[a]sbestos exposure risk is higher in children because they are more active, breathe at higher rates and through the mouth, and spend more time closer to the floor where asbestos fibers can accumulate."

EPA's Failure to Address Asbestos Contaminated Products

Asbestos is also a contaminant in widely marketed products. A tragic example of this hidden danger is asbestos-contaminated talc products, like the long-popular Johnson & Johnson baby powder, which has been found to cause

ovarian cancer, a known consequence of asbestos exposure. Talc imports into the US are substantial, averaging 656,259,377 pounds per year.

Talc is also used in several other products which children and families are regularly exposed to. While these products are not always contaminated with asbestos, the threat of contamination looms. Asbestos has been found in crayons and make-up products marketed to children and tweens at Claire's and Justice retailers. In fact, just this month, FDA testing confirmed previous reports of asbestos contamination in Claire's makeup line.

While FDA has taken action on products within its jurisdiction, the same is not true of EPA. Although EPA is aware of talc products contaminated with asbestos, these products are not within the scope of the risk evaluation and EPA has yet to investigate, identify, and take action against asbestos-containing consumer products subject to TSCA.

The Asbestos Information Void

The EPA problem formulation identified a number of asbestos products that EPA believed were in use but, with limited exceptions, provided virtually no information about the quantities of asbestos contained in these products, the volumes in which they are produced or imported, the sites where they are used and the number of exposed individuals. The problem formulation acknowledged these limitations, saying that "[i]t is important to note that the import volume of products containing asbestos is not known" and that "[c]onsumer exposures will be difficult to evaluate since the quantities of these products that still might be imported into the United States is not known."

TSCA requires a careful evaluation of chemical exposure in assessing risks: the law directs EPA to consider "the likely duration, intensity, frequency, and number of exposures under the conditions of use of the chemical substance." This understanding of potential exposure is essential in determining the nature and magnitude of the risk to an exposed population – and is particularly critical for asbestos, which can cause lethal effects to workers or consumers following a brief exposure at low doses.

Yet EPA not only acknowledged its lack of basic information on asbestos exposure in the problem formulation but actually exempted asbestos from its Chemical Data Reporting (CDR) rule because it is a "naturally occurring substance." This loophole in the rule has resulted in a troubling – and wholly avoidable – lack of reliable information about who is importing asbestos and in what quantities, where and how asbestos is being used in the US, and who is being exposed and how that exposure is occurring. As a consequence, the public is not adequately informed about the risks that asbestos presents to health in the US, and EPA itself lacks the basic information required for a complete and informed risk evaluation that assures that unsafe asbestos uses are removed from commerce.

Because of this inaction, American consumers have been left in the dark about asbestos and its whereabouts, which makes it impossible to identify or mitigate the risk of exposure. This absence of this life-saving information is what motivated ADAO to petition the EPA in the fall of 2018 to require reporting by importers and users of these asbestos and asbestos-containing products under TSCA. EPA denied this petition in December. ADAO and other groups are currently challenging the petition denial in court. Earlier this year, attorneys general for 14 states and the District of Columbia joined ADAO in petitioning for asbestos reporting.

What the ARBAN Legislation Would Accomplish

The many shortcomings in EPA's approach to asbestos require strong legislation expeditiously banning asbestos once and for all. The Alan Reinstein Ban Asbestos Now Act of 2019, introduced in the House just last week, would achieve this goal. It would ban all imports, use, and distribution in commerce of asbestos and asbestos-containing products within 12 months of the bill's passage, without exempting any class of products. The ban would apply to

products in which asbestos is present as an impurity and thus would prohibit crayons and other talc-based products containing asbestos. The bill also contains important Right-to-Know provisions requiring industry to report on its importation and use of asbestos and asbestos-containing products and obligating EPA to disclose these reports to the public. Finally, under the bill, the federal government will conduct a comprehensive study of the presence of asbestos in buildings, the number of people exposed and levels of exposure and the resulting threats to public health and recommend ways to strengthen current laws, policies and requirements to increase public health protection against legacy asbestos.

We appreciate the support that many House members have extended to this vital legislation and urge that it be passed without delay.

Sincerely,

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[1] Daniels RD, Kubale TL, Yiin JH, *et al* Mortality and cancer incidence in a pooled cohort of US firefighters from San Francisco, Chicago and Philadelphia (1950–2009) *Occup Environ Med* 2014;**71**:388-397.

FOR IMMEDIATE RELEASE
March 11, 2019

ADAO RESPONDS TO NEW USGS REPORT THAT ASBESTOS IMPORTS MORE THAN DOUBLED IN 2018

The Chlor-Alkali Industry is Responsible for 100% of Raw Asbestos Imports, Endangering American Lives

WASHINGTON, DC – The Asbestos Disease Awareness Organization (ADAO), an independent nonprofit dedicated to preventing asbestos exposure through education, advocacy, and community work; is deeply concerned by the 2019 United States Geological Survey (USGS) asbestos report confirming ADAO's findings that imports of raw asbestos into the United States are surging.

According to the 2019 USGS report, U.S. imports of asbestos more than doubled within a year, from 332 metric tons of raw chrysotile asbestos in 2017 to 750 metric tons in 2018. The USGS reiterated that the chlor-alkali industry remains responsible for nearly 100% of U.S. asbestos imports and that 'numerous materials' provide suitable substitutes for asbestos.

"Nearly 40,000 Americans die each year from preventable asbestos-caused diseases, yet the EPA allows for imports and use to continue," said **Linda Reinstein, President and Co-Founder of ADAO**. "According to the EPA, Olin Chemical, Occidental Petroleum Corporation, and Axial/Westlake are the primary importers of raw asbestos. In 2018, more than $1,000,000 USD was spent purchasing deadly raw chrysotile asbestos from Brazil and Russia. Uralasbest, the largest Russian asbestos producer, marketed tons of toxic chrysotile asbestos to American importers with an image of President Donald Trump and the slogan "Approved by Donald Trump, 45th President of the United States." While more than 60 nations around the world have completely banned asbestos, the United States government remains complicit in the deaths of thousands each year from illnesses caused by asbestos exposure as they allow these imports to continue."
The USGS also stated that several asbestos-containing products are being imported into the U.S. in addition to the 750 metric tons of raw chrysotile, including asbestos-containing brake materials, rubber sheets for gaskets, tile, wallpaper, and potentially asbestos-cement pipe and contaminated knitted fabrics, but the amount is "unknown."

Because vital information about the levels of asbestos in imported products and their use in the U.S. is not available, ADAO petitioned the EPA in the fall of 2018 to require reporting by importers and users of these products under the Toxic Substances Control Act (TSCA). EPA denied the petition in December. ADAO and other groups are currently challenging the petition denial in court.

"Trump's EPA has repeatedly shown its disinterest in regulating asbestos, a known carcinogen," **said Reinstein.** "It is reprehensible that the EPA allows for hundreds of tons of raw asbestos and contaminated consumer products, like children's crayons and make-up marketed to tweens at Claire's and Justice stores, to be brought into the U.S. It's time for Congress to move expeditiously

to pass The Alan Reinstein Ban Asbestos Now Act, a comprehensive, no-exemptions ban of this deadly fiber."

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About the Asbestos Disease Awareness Organization

The Asbestos Disease Awareness Organization (ADAO) was founded by asbestos victims and their families in 2004. ADAO is the largest non-profit in the U.S. dedicated to providing asbestos victims and concerned citizens with a united voice through our education, advocacy, and community initiatives. ADAO seeks to raise public awareness about the dangers of asbestos exposure, advocate for an asbestos ban, and protect asbestos victims' civil rights. For more information, visit www.asbestosdiseaseawareness.org.

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EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

EDF statement in advance of house hearing on failure by the Trump EPA to protect workers from toxic chemicals

By Richard Denison / Bio / Published: March 12, 2019

Richard Denison, Ph.D., is a Lead Senior Scientist.

Tomorrow, the House Energy and Commerce Committee's Subcommittee on the Environment and Climate Change will hold an oversight hearing on "Mismanaging Chemical Risks: EPA's Failure to Protect Workers." In advance of the hearing, Environmental Defense Fund lead senior scientist, Dr. Richard Denison, made the following statement:

"Under the Trump Administration, every aspect of EPA's implementation of the Toxic Substances Control Act (TSCA) — our recently reformed chemical safety law — has gone off the rails. The Trump EPA has abdicated its authority and responsibility under the law to address risks to workers. Among the ways EPA has shirked these duties are the following:

- **Clearing new chemicals despite risks to workers.** EPA has approved new chemicals for unfettered market access even where the agency has identified significant risks to workers or has indicated it has insufficient information to determine risks to workers. EPA has done so for many dozens of chemicals.

- **Abandoning worker protections from methylene chloride**. EPA is poised to finalize a ban of methylene chloride-based paint strippers far narrower than the one it proposed over two years ago. While consumer uses will be banned, EPA will not limit commercial uses, leaving workers, who are most at risk from these products, unprotected.

- **Ignoring worker safety in chemical risk evaluations under TSCA**. In the only draft risk evaluation of a chemical issued to date, EPA relied exclusively on a single undocumented workplace air concentration value, provided through a private personal communication by a conflicted industry source, as the basis to conclude that workers across the supply chain for this chemical face no significant exposure to the chemical.

"Oversight of this EPA's reckless approach to worker protection under existing law is long overdue. We applaud the subcommittee for holding this hearing. This EPA is putting the public's health – especially worker's health — at risk by systematically weakening and undermining chemical safety: the agency must be held accountable."

257 Park Avenue South, New York, NY 10010

Review

Human Health Effects of Trichloroethylene: Key Findings and Scientific Issues

Weihsueh A. Chiu,[1] Jennifer Jinot,[1] Cheryl Siegel Scott,[1] Susan L. Makris,[1] Glinda S. Cooper,[1] Rebecca C. Dzubow,[2] Ambuja S. Bale,[1] Marina V. Evans,[3] Kathryn Z. Guyton,[1] Nagalakshmi Keshava,[1] John C. Lipscomb,[1] Stanley Barone Jr.,[4] John F. Fox,[1] Maureen R. Gwinn,[1] John Schaum,[5] and Jane C. Caldwell[1]

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Background: In support of the Integrated Risk Information System (IRIS), the U.S. Environmental Protection Agency (EPA) completed a toxicological review of trichloroethylene (TCE) in September 2011, which was the result of an effort spanning > 20 years.

Objectives: We summarized the key findings and scientific issues regarding the human health effects of TCE in the U.S. EPA's toxicological review.

Methods: In this assessment we synthesized and characterized thousands of epidemiologic, experimental animal, and mechanistic studies, and addressed several key scientific issues through modeling of TCE toxicokinetics, meta-analyses of epidemiologic studies, and analyses of mechanistic data.

Discussion: Toxicokinetic modeling aided in characterizing the toxicological role of the complex metabolism and multiple metabolites of TCE. Meta-analyses of the epidemiologic data strongly supported the conclusions that TCE causes kidney cancer in humans and that TCE may also cause liver cancer and non-Hodgkin lymphoma. Mechanistic analyses support a key role for mutagenicity in TCE-induced kidney carcinogenicity. Recent evidence from studies in both humans and experimental animals point to the involvement of TCE exposure in autoimmune disease and hypersensitivity. Recent avian and *in vitro* mechanistic studies provided biological plausibility that TCE plays a role in developmental cardiac toxicity, the subject of substantial debate due to mixed results from epidemiologic and rodent studies.

Conclusions: TCE is carcinogenic to humans by all routes of exposure and poses a potential human health hazard for noncancer toxicity to the central nervous system, kidney, liver, immune system, male reproductive system, and the developing embryo/fetus.

Key words: assessment, cancer/tumors, cardiovascular, epidemiology, immunologic response, Integrated Risk Information System (IRIS), meta-analysis, mode of action, physiologically based pharmacokinetic (PBPK) modeling, trichloroethylene. *Environ Health Perspect* 121:303–311 (2013). http://dx.doi.org/10.1289/ehp.1205879 [Online 18 December 2012]

Trichloroethylene (TCE) is a chlorinated solvent once widely used as a metal degreaser, chemical intermediate and extractant, and component of some consumer products. Total releases to the environment reported to the U.S. Environmental Protection Agency (EPA) Toxics Release Inventory have declined from > 57 million pounds in 1988 to about 2.4 million pounds in 2010 (U.S. EPA 2012b). Because it has a relatively short half-life, TCE is not commonly detected in biomonitoring surveys, and the percentage of subjects with detectable levels (> 0.1 ng/mL) has declined from about 10% to 1% between samples collected in 1988–1994 and those collected in 2003–2004 (Centers for Disease Control and Prevention 2009; Wu and Schaum 2000). From a regulatory and environmental-cleanup perspective, TCE has been identified in soil or groundwater at > 700 of approximately 1,300 Superfund hazardous waste sites listed by the U.S. EPA (2011c). Additionally, the U.S. EPA has identified TCE as one of the volatile organic compounds to be regulated as a group in drinking water (U.S. EPA 2010, 2011a) and as one of the priority existing chemicals under review for regulatory action under the Toxic Substances Control Act (U.S. EPA 2012a). Indeed, because of TCE's continued presence in the environment, most people are likely to have some exposure to the compound through contaminated drinking water, ambient outdoor or indoor air, or, less commonly, contaminated foods.

The U.S. EPA's Integrated Risk Information System (IRIS) program released an updated human health risk assessment of TCE in September 2011 (U.S. EPA 2011d). This assessment was developed over a period of > 20 years and underwent many stages of both internal and external peer review. Key inputs were recommendations for additional analysis and research from a National Research Council (NRC) panel report reviewing the key scientific issues pertaining to TCE hazard and dose–response assessment (NRC 2006). This report, together with a series of issue papers developed by U.S. EPA scientists (Caldwell and Keshava 2006; Chiu et al. 2006a, 2006b; Keshava and Caldwell 2006; Scott and Chiu 2006), provided the foundation for developing an objective, scientifically rigorous human health risk assessment for TCE. The U.S. EPA's final assessment also incorporated input from two independent peer reviews by the U.S. EPA's Science Advisory Board (U.S. EPA SAB 2002, 2011), other federal agencies (U.S. EPA 2009b, 2011b), and the public (U.S. EPA 2009a).

Here we describe key findings and scientific issues addressed in the U.S. EPA's toxicological review of TCE (U.S. EPA 2011d), covering the following topics: *a*) the role of metabolism in TCE toxicity, which was informed by the development and use of an updated physiologically based pharmacokinetic (PBPK) model; *b*) the carcinogenicity of TCE, including the development of meta-analyses of epidemiologic studies for informing causal inferences, as recommended by the NRC (2006), and analyses of laboratory animal mechanistic and toxicokinetic data contributing to the evaluation of biological plausibility of the epidemiologic data; and *c*) noncancer toxicity related to two end points—immunotoxicity and developmental cardiac toxicity—for which substantial new data have become available. Findings and issues related to other important topics not discussed here (e.g., susceptibility, mixtures/coexposures, and dose–response assessment) have been described previously (e.g., Caldwell JC et al. 2008; NRC 2006; U.S. EPA 2011d).

Role of Metabolism in TCE Toxicity

A broad and complex range of relevant information for assessing human health effects of TCE is available. Previous reviews have found TCE to adversely affect the central

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Supplemental Material is available online (http://dx.doi.org/10.1289/ehp.1205879).

This work has benefitted from advice and comments from a number of scientific reviewers—including members of the National Academies of Sciences, National Research Council panel on Trichloroethylene Health Risks, two U.S. EPA Science Advisory Board review panels, and scientists at federal agencies (including the U.S. EPA)—as well as from others who prepared public comments. We also thank P. Anastas, R. Clark, P. Preuss, D. Bussard, V. Cogliano, B. Sonawane, and P. White for providing U.S. EPA management support.

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nervous system (Bale et al. 2011), liver (Bull 2000), kidney (Lash et al. 2000b), immune system (Cooper et al. 2009), and reproductive systems and developing embryo/fetus (NRC 2006). As shown in Figure 1, TCE is metabolized in humans and experimental animal species by both oxidation and glutathione (GSH)-conjugation metabolic pathways, with subsequent production of numerous toxicologically active compounds (Chiu et al. 2006b; Lash et al. 2000a). These include the oxidative metabolites chloral hydrate, trichloroacetic acid (TCA), and dichloroacetic acid, and the GSH conjugation metabolites dichlorovinyl glutathione and dichlorovinyl cysteine. This complex assortment of metabolic compounds is generated from and transported across multiple tissues, making evaluation of mechanistic data especially challenging (Caldwell JC et al. 2008). Liver effects of TCE are thought to result from oxidative metabolites (Buben and O'Flaherty 1985; Bull 2000), whereas effects on kidney are generally associated with metabolites resulting from GSH conjugation (Lash et al. 2000b). The identity of TCE metabolites involved in the induction of other health effects of TCE is less clear, although similarities have been observed between TCE and its oxidative metabolites in the respiratory tract (e.g., Odum et al. 1992) and developmental toxicity (e.g., Johnson et al. 1998a).

Tools such as PBPK models can be very useful for integrating complex toxicokinetic information on absorption, distribution, metabolism, and excretion of TCE and its metabolites. Many PBPK models for TCE have been developed to predict the relationship between external measures of exposure and internal dose measures (Bois 2000a, 2000b; Clewell et al. 2000; Fisher 2000; Hack et al. 2006). Chiu et al. (2009) and Evans et al. (2009) updated and "harmonized" these efforts into a new model for use in the IRIS assessment.

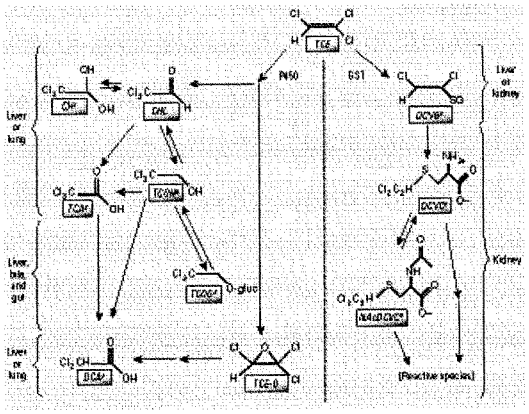

Figure 1. Simplified TCE metabolism scheme. Metabolism of TCE occurs through two main irreversible pathways: oxidation via the microsomal mixed-function oxidase system (i.e., cytochrome P450s; left) and conjugation with GSH by glutathione *S*-transferases (GSTs; right). Oxidation occurs predominantly in the liver, and to a lesser extent in the lung; the first metabolic products are TCE-oxide (TCE-O), chloral (CHL), and chloral hydrate (CH), with the latter two quickly transformed to trichloroethanol (TCOH; a reversible reaction) and trichloroacetic acid (TCA). TCOH is glucuronidated to form TCOH-glucuronide (TCOG), which undergoes enterohepatic recirculation (excretion in bile with regeneration and reabsorption of TCOH from the gut). TCA and TCOG are excreted in urine. Further metabolism of TCA and TCOH has not been well characterized but may include dichloroacetic acid (DCA) (Lash et al. 2000a). TCE-O may also form DCA, among other species (Cai and Guengerich 1998). TCE conjugation with GSH in the liver or kidney form dichlorovinyl glutathione (DCVG), which is further processed in the kidney, forming the cysteine conjugate *S*-dichlorovinyl-L-cysteine (DCVC). DCVC may be bioactivated by beta-lyase or flavin-containing monooxygenases to reactive species (Anders et al. 1988; Krause et al. 2003; Lash et al. 2003), or (reversibly) undergo *N*-acetylation to the mercapturate *N*-acetyl dichlorovinyl cysteine (NAcDCVC), which is then excreted in urine or sulfoxidated by CYP3A to reactive species (Bernauer et al. 1996; Birner et al. 1993; Werner et al. 1995a, 1995b).
[a]Metabolites identified in blood or urine following *in vivo* TCE exposure (rodent or human).

For example, Evans et al. (2009) and Chiu (2011) illustrated the importance of internal dose in investigating mechanisms of TCE toxicity, addressing the key question of whether the TCE metabolite TCA can account for mouse hepatomegaly caused by TCE. They used the TCE PBPK model to compare the hepatomegaly response after TCE administration with the response after direct administration of its metabolite TCA, using the common internal dose measure of TCA liver concentration. If TCA were the only contributor to TCE-induced hepatomegaly, this comparison would show equal changes in liver weight for equal TCA liver concentrations, regardless of whether TCA was the result of TCE metabolism or the result of direct TCA administration. However, as reported by Evans et al. (2009) and Chiu (2011), TCA appears to account for no more than half of the hepatomegaly that resulted from TCE exposure, implying that effects related to TCE exposure beyond those accounted for by TCA are also operative in TCE-induced hepatomegaly.

Carcinogenicity

Evaluation of cancer epidemiology for kidney cancer, liver cancer, and non-Hodgkin lymphoma (NHL). The U.S. EPA conducted a systematic review of 76 human epidemiologic studies on TCE and cancer (Scott and Jinot 2011; U.S. EPA 2011d). Each study was evaluated with respect to explicitly identified characteristics of epidemiologic design and analysis to examine whether chance, bias, or confounding could be alternative explanations for the study's results. A more in-depth analysis (including meta-analysis) of the epidemiologic studies was conducted for kidney cancer, liver cancer, and NHL. These end points were of *a priori* interest based on the results of a preliminary review of the epidemiologic data and the findings from rodent bioassays of TCE exposure.

Meta-analysis approach and results. Meta-analyses can be used to combine underpowered studies, to evaluate effects across the set of studies, and to examine consistency (or heterogeneity) of results. The NRC (2006) identified a number of weaknesses in previous meta-analyses of TCE carcinogenicity, such as subjective assessment of quality and lack of sensitivity analyses. Thus, the U.S. EPA conducted new meta-analyses to support evaluation of the epidemiologic data on TCE (Scott and Jinot 2011; U.S. EPA 2011d). As recommended by the NRC (2006), the U.S. EPA (2011d) *a*) established objective study inclusion criteria; *b*) fit the data to both fixed-effect and random-effects models; *c*) evaluated statistical heterogeneity across the studies; *d*) performed sensitivity analyses examining the influence of individual studies and of different measures of relative risk (RR) from

studies presenting alternative estimates (e.g., incidence or mortality); and *e*) conducted tests for potential publication bias (which may occur if positive studies are more likely to be published). Figure 2 presents the meta-analysis summary effect estimates (RRm) from the random-effects models for any TCE exposure (Figure 2A) and for the highest TCE exposure groups (Figure 2B).

Issues in the interpretation of cancer epidemiologic evidence. Two additional key issues regarding the U.S. EPA's interpretation (U.S. EPA 2011d) of the cancer epidemiologic evidence for kidney cancer, NHL, and liver cancer have been raised in peer review and public comments: the modest magnitude of the RRm estimates for the three cancer types, and the role of meta-analysis within a causality determination.

The RRm estimates from the U.S. EPA (2011d) meta-analyses for the three cancer types were modest (e.g., with overall exposure (Figure 2A): 1.27 [95% confidence interval (CI): 1.13, 1.43] for kidney cancer; 1.23 (95% CI: 1.07, 1.42) for NHL, and 1.29 (95% CI: 1.07, 1.56) for liver cancer (Scott and Jinot 2011)], raising the possibility that the observed associations could be the result of confounding. However, a detailed examination by the U.S. EPA of potential confounding from lifestyle factors or other occupational exposures concluded that confounding was not supported as an alternative explanation for the observed excesses (U.S. EPA 2011d).

For example, although smoking can potentially confound kidney cancer results, several kidney cancer case–control studies included in the meta-analysis (U.S. EPA 2011d) reported associations with TCE exposure even after controlling for smoking in statistical analyses. In addition, if the cohort studies had been confounded by smoking, increased lung cancer risk would be expected. However, increases in lung cancer risk in individual studies were either absent or insufficient to account for the observed excess kidney cancer risk. Overall, after combining studies, RRm estimates for lung cancer were 0.96 (95% CI: 0.76, 1.21) for overall TCE exposure and 0.96 (95% CI: 0.72, 1.27) for the highest exposure groups (Scott and Jinot 2011; U.S. EPA 2011d).

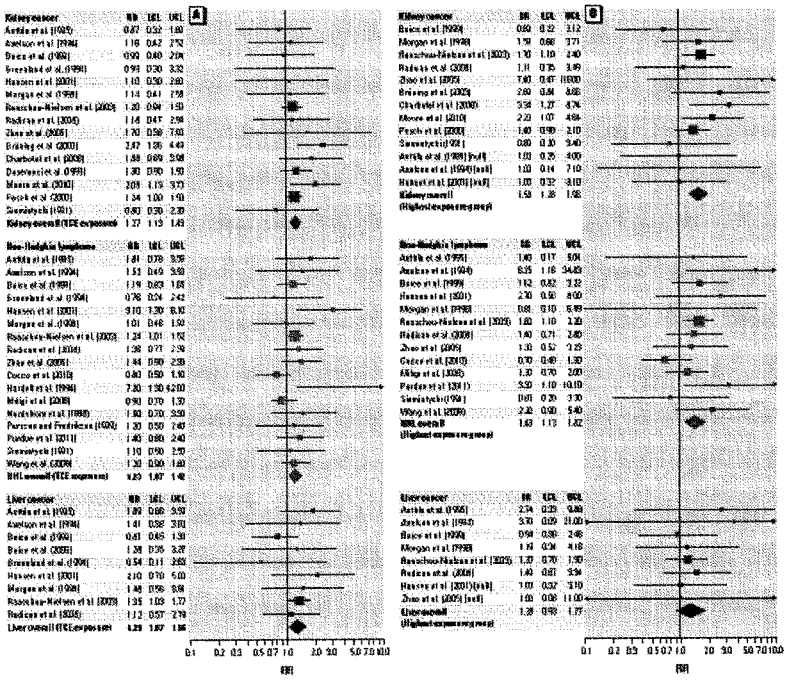

Figure 2. Forest plots from random-effects models of overall (i.e., "ever" or "any") TCE exposure (*A*) and highest TCE exposure groups (*B*), adapted from Scott and Jinot (2011). Individual study RR (squares) and RRm (diamonds) values are plotted with 95% CIs (LCL, lower confidence limit; UCL, upper confidence limit) for each cancer type. Symbol sizes reflect relative weight of the studies.

Another key issue is the role of meta-analysis in the overall evaluation of causality. Meta-analysis can provide an objective, quantitative method to increase statistical power and precision because the resultant summary effect estimate is based on multiple studies. Strengths of the meta-analyses (U.S. EPA 2011d) include study identification based on a systematic and transparent review, evaluations of potential publication bias, examinations of the sensitivity of the overall effect to different inputs, and investigations of possible factors responsible for any statistical heterogeneity observed across studies. However, the U.S. EPA's characterization of the epidemiologic evidence (U.S. EPA 2011d) considered multiple aspects of the data as a whole and did not rely solely on the meta-analysis findings.

Synthesis of epidemiologic evidence. Table 1 summarizes the epidemiologic evidence according to the key concepts proposed by Hill (1965). For TCE and kidney cancer, there was convincing evidence of a causal association in humans. Particularly compelling was the consistency of increased RR estimates for kidney cancer across the 15 independent epidemiologic studies of different designs and populations from different countries that met the criteria for inclusion in the meta-analysis (Figure 2). The U.S. EPA (2011d) observed increased RRm estimates for kidney cancer that were robust, not being sensitive to different study or RR inputs. The U.S. EPA (2011d) also found no evidence of heterogeneity among studies or publication bias. The observations of a greater RRm estimate with the highest exposure groups (Figure 2B) and of statistically significant trends between TCE exposure and kidney cancer in two high-quality epidemiologic studies (Charbotel et al. 2006; Moore et al. 2010) support an exposure–response gradient. Finally, potential confounding from smoking or other occupational exposures was unlikely to explain the association of TCE exposure with kidney cancer.

Table 1. Primary components for a causality determination based on the epidemiologic database for TCE.

Consideration	Summary of weight of evidence
Consistency of observed association	• Strong evidence of consistency for kidney cancer (consistently elevated RRs). Meta-analysis yielded robust, statistically significant summary RR, with no evidence of heterogeneity or potential publication bias. • Moderate evidence of consistency for NHL (consistently elevated RRs); RR estimates more variable compared with kidney cancer. Meta-analysis yielded robust, statistically significant summary RR, with some heterogeneity (not statistically significant) and some evidence for potential publication bias. • Limited evidence of consistency for liver cancer (fewer studies overall, more variable results). Meta-analysis showed no evidence of heterogeneity or potential publication bias, but the statistical significance of the summary estimate depends on the large study by Raaschou-Nielsen et al. (2003).
Strength of observed association	• Strength of association is modest. Other known or suspected risk factors (smoking, body mass index, hypertension, or coexposure to other occupational agents such as cutting or petroleum oils) cannot fully explain the observed elevations in kidney cancer RRs. The alternative explanation of smoking was ruled out by the finding of no increased risk of lung cancer. Indirect examination of some specific risk factors for liver cancer or NHL did not suggest confounding as an alternative explanation.
Specificity	• Limited evidence suggesting that particular von Hippel-Lindau mutations in kidney tumors may be caused by TCE (Brauch et al. 1999, 2004; Brüning et al. 1997; Nickerson et al. 2008; Schraml et al. 1999); additional research addressing this issue is warranted.
Biological gradient (exposure–response relationship)	• Only a few epidemiologic studies examined exposure–response relationships. Studies with well-designed exposure assessments reported a statistically significant trend of increasing risk of kidney cancer (Charbotel et al. 2006; Moore et al. 2010; Zhao et al. 2005) or NHL (Purdue et al. 2011) with increasing TCE exposure. Further support was provided by the meta-analyses; higher summary RR estimates for kidney cancer and NHL were observed for the highest exposure groups than for overall TCE exposure, taking possible reporting bias into account. Liver cancer studies generally had few cases, limiting the ability to assess exposure–response relationships. The meta-analysis for liver cancer did not provide support for a biological gradient (lower summary RR estimate for highest exposure groups than for overall TCE exposure, taking possible reporting bias into account).
Biological plausibility and coherence	• TCE metabolism results in reactive, genotoxic, and/or toxicologically active metabolites at target sites in humans and in rodent test species. • The active GSTT1 enzyme in humans was associated with increased kidney cancer risk, whereas the lack of active enzyme was associated with no increased risk (Moore et al. 2010). • TCE is carcinogenic in rodents; cancer types with increased incidences include kidney, liver, and lymphohematopoietic cancers. • A mutagenic mode of action is considered operative for TCE-induced kidney tumors, based on mutagenicity of GSH-conjugation metabolites and the toxicokinetic availability of these metabolites to the target tissue. • Modes of action are not established for other rodent cancer findings; human relevance is not precluded by any hypothesized modes of action due to inadequate support.

NHL, non-Hodgkin lymphoma. Data from U.S. EPA (2011d).

The evidence on carcinogenicity from epidemiologic studies of TCE exposure was strong for NHL, although less convincing than for kidney cancer (U.S. EPA 2011d). Of the 17 studies that met the criteria for meta-analysis inclusion, most observed increased RR estimates (Figure 2A). The increased RRm estimate observed in the meta-analysis of NHL and overall TCE exposure was robust because it was not sensitive to different study or RR inputs. However, some heterogeneity among studies was observed, although it was not statistically significant. There was also some evidence of potential publication bias. An exposure–response gradient is supported by observations of a greater RRm estimate with the highest exposure groups (Figure 2B) and of a statistically significant trend between TCE exposure and NHL in a high-quality epidemiologic study (Purdue et al. 2011).

The epidemiologic evidence was more limited for liver cancer, where only cohort studies with small numbers of cases were available (U.S. EPA 2011d). Of the nine studies that met the criteria for meta-analysis inclusion, most reported increased RR estimates (Figure 2A). The U.S. EPA (2011d) observed a statistically significantly increased RRm estimate in their meta-analysis of liver cancer and overall TCE exposure, but the statistical significance depended on the large study by Raaschou-Nielsen et al. (2003). There was no evidence of heterogeneity or publication bias. However, the data available did not support an exposure–response gradient because the RRm estimate for the highest exposure groups was lower than that for overall exposure (Figure 2B) and because none of the available studies reported a statistically significant trend between TCE exposure and liver cancer.

Experimental animal studies, analysis of mode of action, and toxicokinetic considerations. There is clear evidence of TCE carcinogenicity in rodents. Particularly notable is the site-concordant finding of TCE-induced kidney tumors in multiple strains and both sexes of rats exposed by inhalation or gavage [Maltoni et al. 1986; National Toxicology Program (NTP) 1988, 1990]. Although the increased incidences were low, they were sometimes statistically significant and were considered biologically significant in light of the very low historical incidences of renal tumors in control rats in various laboratories. There is also site concordance for liver tumors, which were reported in both Swiss and $B6C3F_1$ mice (strains with lower and higher background rates of this tumor, respectively), and in both sexes in the latter strain (Maltoni et al. 1986; National Cancer Institute 1976; NTP 1990). The evidence was more limited for TCE-induced lymphohematopoietic cancers in rats and mice (Henschler et al. 1980; Maltoni et al. 1986; NTP 1988, 1990). TCE

inhalation bioassays have demonstrated a statistically significant increase in pulmonary tumors in mice (Fukuda et al. 1983; Maltoni et al. 1986) but not other species [i.e., rats and hamsters (Fukuda et al. 1983; Henschler et al. 1980; Maltoni et al. 1986)]. Finally, testicular (interstitial cell and Leydig cell) tumors were significantly increased in Sprague-Dawley rats exposed via inhalation (Maltoni et al. 1986) and Marshall rats exposed via gavage (NTP 1988). In three other tested rat strains, ACI, August, and F344/N, a high (> 75%) control rate of testicular tumors limited the ability to detect a treatment effect, although a positive trend was reported in ACI rats (NTP 1988, 1990). Overall, the rodent cancer data add substantial biological plausibility for TCE carcinogenicity in humans, particularly when combined with the mechanistic data findings.

Table 2 summarizes hypothesized modes of action and mechanistic data informative to the evaluation of TCE's carcinogenic mode of action for liver, kidney, and other tumors. Mode-of-action analyses can inform judgments regarding the human relevance of animal bioassay results and aid in identifying particularly susceptible populations or life stages (U.S. EPA 2005). For kidney carcinogenicity, the U.S. EPA (2011d) concluded that a mutagenic mode of action is operative for TCE, providing further biological plausibility for the epidemiologic findings of TCE-induced kidney cancer. The identification of the mutagenic metabolites as being derived from the GSH conjugation pathway further suggests increased susceptibility in populations with greater metabolism through this pathway. Consistent with this hypothesis, Moore et al. (2010) found a statistically significant association among TCE-exposed persons with an active GSTT1 (glutathione-*S*-transferase theta-1) enzyme [odds ratio (OR) = 1.88; 95% CI: 1.06, 3.33], but not among those with no GSTT1 activity (OR = 0.93; 95% CI: 0.35, 2.44). Although data are lacking on early-life susceptibility to TCE carcinogenicity, the analysis by Barton et al. (2005) suggested increased susceptibility to cancer from early-life exposures, particularly for chemicals acting through a mutagenic mode of action. For other end points, there are inadequate data to support a particular hypothesized mode of action.

The evaluation of TCE carcinogenicity (U.S. EPA 2011d) also considered toxicokinetic data on TCE and metabolites, which are consistent with qualitatively similar absorption, distribution, metabolism, and excretion across species and routes of exposure (Lash et al. 2000a). Mice, rats, and humans all metabolize TCE via the pathways illustrated in Figure 1. Thus, toxicokinetic data support the biological plausibility of TCE carcinogenicity in humans because humans and experimental animals have similar mixtures of TCE and metabolites in target tissues.

Another issue informed by toxicokinetic data is whether TCE carcinogenicity depends on route of exposure, given that the vast majority of the available epidemiologic data are from inhalation exposures to TCE. Because TCE is systemically distributed and undergoes systemic metabolism from all routes of exposure, there is no reason to expect that cancers such as kidney cancer, NHL, or liver cancer, which originate in separate tissues, would be dependent on route of exposure. Also, TCE-induced tumors have been reported in rodents by both the oral and inhalation routes (Maltoni et al. 1986; NTP 1988, 1990). Therefore, conclusions regarding TCE carcinogenicity would apply equally to any exposure route.

Conclusions as to carcinogenic hazard. Supported by the analyses described above and following the U.S. EPA's *Guidelines for Carcinogen Risk Assessment* (U.S. EPA 2005), TCE is characterized as "carcinogenic to humans" by all routes of exposure (U.S. EPA 2011d). This conclusion was based primarily on convincing evidence of a causal association between TCE exposure and kidney cancer in humans. The epidemiologic evidence is strong for NHL, although less convincing than for kidney cancer. Issues increasing the

Table 2. Selected key mode-of-action hypotheses and support.

End point/hypothesized mode of action	Summary of weight of evidence
Kidney tumors	
Mutagenicity	Data sufficient to conclude a mutagenic mode of action is operative.
GSH conjugation–derived metabolites are produced in the kidney.	Studies demonstrate TCE metabolism via GSH conjugation pathway; availability of metabolites to the kidney in laboratory animals and humans.
Metabolites directly induce mutations in kidney cells, advancing acquisition of critical traits contributing to carcinogenesis.	Predominance of positive genotoxicity data for GSH pathway metabolites in experimental systems.
Cytotoxicity and regenerative proliferation	Data consistent with cytotoxicity contributing to carcinogenesis in rodents, but the evidence is not as strong as that for a mutagenic mode of action.
GSH conjugation–derived metabolites are produced in kidney.	Studies demonstrate TCE metabolism via GSH conjugation pathway; availability of metabolites to the kidney in humans and laboratory animals.
Metabolites directly induce death in kidney cells (cytotoxicity).	Studies demonstrating TCE-induced rare form of nephrotoxicity in laboratory animals; similarity of renal tubular effects induced by TCE and its GSH metabolites. However, cytopathology involves changes in cell and nuclear sizes.
Compensatory cell proliferation occurs to repair damage.	Data linking TCE-induction of proliferation and clonal expansion are lacking.
Clonal expansion of initiated cells occurs, leading to cancer.	
Liver tumors	
Mutagenicity	Data are inadequate to support a mutagenic mode of action
Oxidation-pathway–derived metabolites are produced in and/or distributed to the liver.	Studies demonstrate TCE metabolism via oxidative pathway; availability of numerous metabolites to the liver.
Metabolites directly induce mutations in liver, advancing acquisition of critical traits contributing to carcinogenesis.	Strong data for mutagenic potential is CH, but difficult to assess the contributions from CH along with genotoxic and non-genotoxic effects of other oxidative metabolites.
PPARα activation	Data are inadequate to support a PPARα activation mode of action.
Oxidation-pathway–derived PPAR agonist metabolites (TCA and/or DCA) are produced in and/or distributed to the liver.	Studies demonstrate TCE metabolism via oxidative pathway; availability of some metabolites that are PPAR agonists to the liver.
Metabolites activate PPARα in the liver.	Studies demonstrating activation of hepatic PPARα in rodents exposed to TCE and TCA.
Alteration of cell proliferation and apoptosis occurs.	However, inadequate evidence that PPARα is necessary for liver tumors induced by TCE or that hypothesized key events are collectively sufficient for carcinogenesis.
Clonal expansion of initiated cells occurs, leading to cancer.	
Other end points and/or modes of action	
Inadequate data to support one or more of the following:	
An identified sequence of key events.	
TCE or metabolites induce key events.	
Key events are individually necessary for inducing the end point.	
Key events are collectively sufficient for inducing the end point.	

Abbreviations: CH, chloral hydrate; DCA, dichloroacetic acid; PPARα, peroxisome proliferator activated receptor α; TCA, trichloroacetic acid. Data from U.S. EPA (2011d).

uncertainty in the NHL association include study heterogeneity, potential publication bias, and less evidence for an exposure–response gradient. The epidemiologic evidence was more limited for liver cancer, where only cohort studies with small numbers of cases were available. Finally, animal bioassay, mechanistic, and toxicokinetic data provide further corroboration and biological plausibility to the epidemiologic findings, thus supporting a causal link between TCE exposure and cancer (Table 1).

Noncancer Toxicity

As part of its evaluation of TCE noncancer toxicity, the U.S. EPA analyzed the available experimental animal, human epidemiologic, and mechanistic studies of TCE. A summary of the relevant studies for each end point is available in Supplemental Material, Table S1 (http://dx.doi.org/10.1289/ehp.1205879). Below we discuss the data pertaining to immunotoxicity and developmental cardiac toxicity, for which there are substantial new experimental and epidemiologic studies (U.S. EPA 2011d), and about which scientific issues have been raised by reviewers or comments. We also provide an overall summary of the hazard conclusions for noncancer toxicity.

Immunotoxicity. As recently reviewed by Cooper et al. (2009) and documented in the TCE assessment (U.S. EPA 2011d), the human and laboratory animal studies of TCE and immune-related effects provide strong evidence that TCE exposure increases the risk of autoimmune disease and a specific type of generalized hypersensitivity syndrome. In addition to the epidemiologic studies of specific diseases (e.g., systemic sclerosis), changes in cytokine levels reflecting an inflammatory immune response have been reported in relation to TCE exposure in occupational (Iavicoli et al. 2005) and residential (i.e., infants exposed to TCE in indoor air) (Lehmann et al. 2001, 2002) settings. Also, many case reports have associated a severe hypersensitivity skin disorder, distinct from contact dermatitis and often accompanied by hepatitis, with occupational TCE exposure, with prevalences as high as 13% of workers in the same location (Kamijima et al. 2007, 2008).

Human evidence for autoimmune-related effects is supported by experimental animal studies. Numerous studies have demonstrated TCE-induced progressive, accelerated autoimmune responses in autoimmune-prone mice (reviewed by Cooper et al. 2009). After shorter exposure periods, changes in cytokine levels appear similar to those reported in human studies. Longer exposure periods led to more severe effects, including autoimmune hepatitis, inflammatory skin lesions, and alopecia, that differ from the "normal" expression of autoimmune effects in these mice. TCE-induced autoimmune effects have also been reported in B6C3F_1 mice, which are not known to have any particular immune-related susceptibility (Gilkeson et al. 2004; Peden-Adams et al. 2006). A treatment-related increase in delayed hypersensitivity response accompanied by hepatic damage has been observed in guinea pigs following intradermal TCE injection (Tang et al. 2002, 2008), and increased hypersensitivity response was reported in mice exposed via drinking water prenatally and postnatally (gestation day 0 through to 8 weeks of age) (Peden-Adams et al. 2006).

There is less evidence regarding a possible role of TCE exposure in immunosuppression. Immunosuppressive effects have been reported in a number of experimental studies in mice and rats [see Supplemental Material, Table S1 (http://dx.doi.org/10.1289/ehp.1205879)]. Reported effects include reduced responses to bacterial challenge in mice (Aranyi et al. 1986; Selgrade and Gilmour 2010) and decreased numbers of antibody-forming cells in rats and developmentally exposed mice (Peden-Adams et al. 2006; Woolhiser et al. 2006).

Overall, the concordance of human and laboratory animal studies and the spectrum of effects (from biomarkers to frank expressions of disease) strongly support the conclusion that TCE causes immunotoxicity, particularly in the form of autoimmune disease and a specific type of severe hypersensitivity skin disorder, with more limited evidence for immunosuppression. Moreover, these findings lend additional biological plausibility to the association between TCE and NHL, as alterations in immune status are associated with increased risk of NHL (Grulich et al. 2007).

Developmental cardiac toxicity. The TCE data include a number of epidemiologic and animal toxicity studies that indicate TCE-induced developmental toxicity. Congenital malformations, particularly cardiac defects, have been associated with exposures to TCE and/or its metabolites in both humans and experimental animals [for example studies, see Supplemental Material, Table S1 (http://dx.doi.org/10.1289/ehp.1205879)]. Other TCE-related developmental outcomes observed in both humans and experimental animals include embryonic or fetal mortality, prenatal growth inhibition, and neurological and immunological functional deficits, (see Supplemental Material, Table S1).

As noted by the NRC (2006), the cardiac teratogenicity of TCE has been the focus of considerable study and analysis (Bove et al. 2002; Hardin et al. 2005; Johnson et al. 1998b; Watson et al. 2006). Only geography-based epidemiology studies have evaluated whether there is an association between maternal TCE exposure and cardiac defects in offspring [see Supplemental Material, Table S1 (http://dx.doi.org/10.1289/ehp.1205879)], with some of the studies reporting statistically significant elevations in a variety of cardiac defects [Agency for Toxic Substances and Disease Registry (ATSDR) 2006, 2008; Yauck et al. 2004], and others reporting nonstatistically significant elevations in risk (Bove 1996; Bove et al. 1995; Goldberg et al. 1990). Interpretation of these data has been controversial because many of the studies are limited by small numbers of cases, insufficient exposure characterization, chemical coexposures, and other methodological deficiencies. In addition, these studies aggregate a broad array of TCE-associated cardiac malformations and have inadequate statistical power to identify any particular kind(s) of defect that may be more susceptible to induction by TCE. The NRC (2006) noted that the epidemiologic studies—although limited individually—as a whole showed relatively consistent elevations for cardiac malformations with similar relative effect sizes of 2- to 3-fold, some of which were statistically significant, associated with TCE exposure across multiple studies.

The outcomes of studies in rodents exposed to TCE during gestation show an inconsistent pattern. Some studies identified significant treatment-related increases in the overall incidence of cardiac anomalies at environmentally relevant exposure levels (e.g., Johnson et al. 2003, 2005), whereas others reported no excess cardiac abnormalities at much higher dose levels (e.g., Carney et al. 2006; Fisher et al. 2001). Several methodological factors may contribute to differences across study outcomes, such as the route of administration, test substance purity, test species or strain, timing of dosing or fetal evaluation, procedures used in dissecting and examining fetal hearts, statistical approaches applied to data evaluation, and generally uncharacterized interlaboratory variation.

Other available data providing evidence of TCE cardiac teratogenicity come from avian and *in vitro* mechanistic studies (NRC 2006). For instance, studies in chick embryos reported consistent effects on cardiogenesis (many demonstrating septal and valvular alterations) when TCE was administered during critical stages of heart development (Drake et al. 2006a, 2006b; Loeber et al. 1988; Rufer et al. 2010); these findings are similar to some of the cardiac defects observed in rodent studies following *in utero* TCE exposures (Johnson et al. 2003). The events of cardiac morphogenesis in birds and mammals are similar; both involving mesenchymal cells that form endocardial cushion tissue with subsequent differentiation into septa and valvular structures in the adult heart (NRC 2006). Thus, cultured embryonic chick atrioventricular canal cushion cells have been used to examine chemically induced disruptions in

cardiac morphogenesis. In this model, TCE inhibited endothelial separations and mesenchymal cell formation (Boyer et al. 2000; Mishima et al. 2006) or adhesive properties of endocardial cells (Hoffman et al. 2004), either of which could potentially result in septal or valvular malformations. Other TCE-induced effects that may have morphologic consequences in the developing heart include disruption of endothelial oxide synthetase, which has a role in endothelial cell proliferation (Ou et al. 2003), and interference with proteins involved in intercellular Ca^{2+} regulation, which may result in altered blood flow (Caldwell PT et al. 2008, 2010; Collier et al. 2003; Selmin et al. 2008).

Overall, the avian and *in vitro* data substantially increase the biological plausibility for TCE-induced cardiac teratogenesis, and thus strongly support the more limited epidemiologic and *in vivo* rodent data suggesting that TCE induces cardiac teratogenicity. Moreover, mechanistic data support the possibility that multiple modes of action with different targets within the developing heart may be operant in eliciting cardiac malformations, consistent with the reported association between TCE and overall cardiac malformations in the absence of a strong association with any particular type of defect.

Conclusions as to noncancer hazard. Table 3 summarizes the evidence for TCE noncancer toxicity across target organs and systems (for additional details, see U.S. EPA 2011d). In addition to the immunotoxicity and developmental cardiac toxicity discussed above, there is strong evidence for TCE-induced neurotoxicity, kidney toxicity, liver toxicity, male reproductive toxicity, and several developmental effects in addition to cardiac toxicity. More limited evidence exists for the toxicity of TCE in the respiratory tract and female reproductive system.

Summary

TCE is carcinogenic to humans by all routes of exposure and poses a potential human health hazard for noncancer toxicity to the central nervous system, kidney, liver, immune system, male reproductive system, and the developing embryo/fetus. These conclusions are based on analyses of a broad spectrum of information from thousands of scientific studies and input from numerous scientific reviews. In the last decade, substantial new scientific data on the human health effects of TCE have become available. Moreover, methodologic advancements—such as modeling of TCE toxicokinetics, meta-analyses of epidemiologic studies, and analyses of mechanistic and noncancer hazard information—have improved the scientific rigor and transparency of data interpretation. The approaches and conclusions of the U.S. EPA's analyses (U.S. EPA 2011d) are consistent with the recommendations of the NRC (2006) and were affirmed by independent peer review through the U.S. EPA's Science Advisory Board (U.S. EPA SAB 2011). In addition, the International Agency for Research on Cancer (IARC) recently upgraded its carcinogenicity classification of TCE to "carcinogenic to humans" (Guha et al. 2012). Finally, studies on the health effects of TCE continue to report findings similar to those described in the U.S. EPA's assessment, such as kidney carcinogenicity and toxicity (Karami et al. 2012; Vermeulen et al. 2012), immunotoxicity (Hosgood et al. 2011), and developmental cardiac toxicity (Forand et al. 2012).

Table 3. Key conclusions for TCE noncancer toxicity.

Tissue or organ system	Key conclusions as to human health hazard
Central nervous system	Strong evidence, based on multiple human and experimental animal studies, that TCE causes • Changes in trigeminal nerve function or morphology • Impairment of vestibular function. Limited evidence, primarily from experimental animal studies, with fewer/more limited human studies, that TCE causes • Delayed motor function, including during neurodevelopment • Changes in auditory, visual, and cognitive function or performance.
Kidney	Strong evidence, based on experimental animal studies, a few human studies, and mechanistic studies, that TCE causes nephrotoxicity, particularly in the form of tubular toxicity. Nephrotoxicity is likely mediated primarily through the TCE GSH conjugation metabolite DCVC.
Liver	Limited evidence in humans and strong evidence from experimental animal studies that TCE causes hepatotoxicity but not necrosis. Mice appear to be more sensitive than other experimental species, and hepatotoxicity is likely mediated through oxidative metabolites including, but not exclusively, TCA.
Immune system	Strong evidence, based on multiple human and experimental animal studies, that TCE exposure causes • Autoimmune disease, including scleroderma • A specific type of generalized hypersensitivity disorder. Limited evidence, primarily from experimental animal studies, with fewer/more limited human studies, that TCE causes immunosuppression.
Respiratory tract	Suggestive evidence, primarily from short-term experimental animal studies, that TCE causes respiratory tract toxicity, primarily in Clara cells.
Reproductive system	Strong evidence, based on multiple human and experimental animal studies, that TCE causes male reproductive toxicity, primarily through effects on the testes, epididymides, sperm, or hormone levels. Suggestive evidence, based on few/limited human and experimental animal studies, that TCE causes female reproductive toxicity.
Development	Strong evidence, based on weakly suggestive epidemiologic studies, limited experimental animal studies, and multiple mechanistic studies, that TCE causes fetal cardiac malformations; limited experimental evidence that oxidative metabolites, such as TCA and/or DCA, cause similar effects. Limited evidence, primarily from experimental animal studies, with weakly suggestive epidemiologic studies, that TCE causes fetal malformations (in addition to cardiac), prenatal losses, decreased growth or birth weight of offspring, and alterations in immune system function.

Abbreviations: DCVC, *S*-dichlorovinyl-L-cysteine. Data from U.S. EPA (2011d).

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INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA – UAW

GARY R. JONES, *PRESIDENT* RAY CURRY, *SECRETARY-TREASURER*
VICE-PRESIDENTS: TERRY DITTES • CINDY ESTRADA • RORY L. GAMBLE

Comments of the International Union, UAW
on the
Draft Risk Evaluation for Pigment Violet 29
(Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline-1,3,8,10(2H,9H)-tetrone)
(Docket Number EPA-HQ-OPPT-2018-0604)

January 14, 2019

The International Union, UAW represents one million active and retired workers, including auto workers, and others who are potentially exposed to PV 29. We are grateful for the opportunity to comment on this draft risk evaluation. EPA proposes to make a risk determination that "C.I. Pigment Violet 29 does not present an unreasonable risk of injury to human health or the environment... including no unreasonable risk to potentially exposed and susceptible subpopulations identified as relevant, under the conditions of use..." If finalized as proposed, this risk determination would constitute an order per TSCA section 6(i)(1) that this chemical does not present an unreasonable risk. Such an order would effectively put an end to both federal and state regulation of this substance. EPA must withdraw its draft risk evaluation, commit to the data collection and analysis that is needed to fully evaluate C.I. Pigment Violet 29 (PV 29), and re-issue a revised risk evaluation, along with all of the underlying health and safety studies, for public review and comment.

The UAW has identified several reasons for which this proposed finding is scientifically unsound and should be withdrawn:

1. There are no chronic exposure studies of PV 29. Such studies are crucial to the research of many local and systemic endpoints, such as cancer and target organ toxicity. This substance has not been adequately examined scientifically. It would be premature to issue a "no unreasonable risk" determination before such studies have been done.

2. The acute inhalation studies that EPA relies on to find that "Low hazard was reported" were considered by the European Chemical Agency (ECHA) to be "insufficient for non-volatile substances." EPA ignored studies of related substances that ECHA concluded were applicable to PV 29. In these studies, animals exhibited clinical signs that included accelerated respiration and pulmonary respiration sounds. One of the test animals died.

3. EPA relies on a single personal communication for its occupational exposure data. This does not meet the scientific standards of industrial hygiene.

4. EPA asserts without evidence that downstream workers will have lower exposure than manufacturing workers. It relies on the assumption that, despite inadequate guidance in the safety data sheets (SDS), all downstream employers will successfully protect their employees using the least effective method, namely personal protective equipment (PPE).

EPA Relies on Flawed Studies

In its *Problem Formulation of the Risk Evaluation for C.I. Pigment Violet 29*,[1] EPA acknowledged "There were no repeated-dose toxicity studies found for C.I. Pigment Violet 29." Such studies are crucial to the research of chronic effects including many local and systemic endpoints, such as cancer and target organ toxicity. In the absence of such studies, it is scientifically unsound to issue a risk determination that a substance does not present an unreasonable risk. The risk posed by this substance has not yet been adequately examined scientifically. Such a determination would be premature.

In support of its "no unreasonable risk" determination, EPA states that "Low hazard was reported in human health testing via all routes of exposure (oral, dermal and inhalation), nor were dermal or eye irritation effects reported." In coming to this conclusion, EPA treated the available data very differently from the way it was treated by the ECHA, from which EPA obtained the data. According to ECHA,[2]

> The test article [PV 29] belongs to the "perylene based organic pigments" category... According to the category approach, missing toxicity endpoints can be addressed with data available for other category members...
>
> Inhalation toxicity
>
> Regarding inhalation, ***only unreliable data is available for the test article.*** Two inhalation risk tests (BASF 77/360, 1978 and BASF XXV-454, 1976)... were performed with the test article... In the first test...[a]verage concentration of the test article in the atmosphere was calculated at 0.31 mg/l... In the second... [a]verage concentration of substance in the atmosphere as stated in the report was 14.74 mg/l. ***However, since this test design is insufficient for non-volatile substances, these tests are disregarded...***
>
> Reliable data is available for other category members... Except for one study ***with a single case of mortality*** all animals survived the procedures. ***The observed clinical signs included accelerated respiration, pulmonary respiration sounds***, squatting posture, piloerection, flight behavior and

[1] USEPA (2018). *Problem Formulation of the Risk Evaluation for C.I. Pigment Violet 29 (Anthra[2,1,9-def:6,5,10-d'e'f']diisoquinoline- 1,3,8,10(2H,9H)-tetrone), CASRN: 81-33-4.* EPA Document# 740-R1-7021: Office of Chemical Safety and Pollution Prevention.

[2] https://echa.europa.eu/registration-dossier/-/registered-dossier/10330/7/3/1 (accessed 1/3/2019)

> smeared fur...
>
> ...The data obtained with the category members is used to define an LC_{50} value in rats for the test article after inhalation of above 5000 mg/m^3. [Emphasis added]

Since EPA relies heavily on ECHA for studies of PV 29, EPA owes the public an explanation as to why it differs with the European agency as to which studies to use. According to Appendix D (p.41), EPA relied on a pair of inhalation studies (BASF, 1978a and BASF, 1975a) in which the exposure concentrations were 0.31 mg/l and 14.74 mg/l. As indicated above, ECHA declined to rely on these studies because "this test design is insufficient for non-volatile substances." EPA chose to ignore tests of related perylene based organic pigments that ECHA relied on. In one of these studies, unlike in those that EPA relied on, one of the animals died. In addition, animals experienced respiratory difficulty at 5.2 mg/l, which appears to be the only nonzero exposure level in this study. It is possible that such respiratory effects may occur well below that concentration, but this does not appear to have been tested in animals or studied in humans. It is scientifically unsound for EPA to make a finding of "no unreasonable risk" on such limited data and to offer no explanation as to why it has made different choices from ECHA as to which studies to accept.

EPA's Risk Analysis Relies on Scientifically Unacceptable Exposure Information

EPA states that it identified no risks associated with this substance on the basis of a screening-level analysis. To do this, EPA compared a No Observed Adverse Effect Level (NOAEL) in Wistar rats of 1000 mg/kg/day taken from a reproductive study[3] to what it describes as a worst-case exposure scenario for workers at a manufacturing site operating without personal protective equipment (PPE). EPA finds that its "worst-case" exposure is almost 15,000 times less than the dose resulting from the NOAEL. This analysis is fundamentally flawed for two reasons. First, as indicated above, in the absence of repeated dose studies, it is impossible to know whether 1000 mg/kg/day is a true NOAEL. It is possible that the true NOAEL is an order of magnitude lower or more. Until the studies are done, it is premature to make a finding of "no unreasonable risk."

Second, the data on which the "worst-case exposure scenario" is based are even less reliable. EPA states "The sole manufacturer of C.I. Pigment Violet 29 reported an approximate maximum workplace air concentration of 0.5 mg/m^3 would be expected over a 12-hour shift (Mott, 2017a). It is not clear whether the monitoring data were for C.I. Pigment Violet 29 or for total dust. If the data were for total dust, the actual air concentration of C.I. Pigment Violet 29 is likely to be lower than 0.5 mg/m^3 (Mott, 2017a)." EPA admits that it does not know whether the monitoring data were for total dust or for the target material. Moreover, the citation "Mott, 2017a," is as follows: "Personal communication between Dr. Robert C. Mott (Sun Chemical Corporation) and Alie Muneer (EPA) regarding exposure questions [Personal Communication]." EPA

[3] Stark, D; Treumann, S; van Ravenzwaay, B (2013). *Reproduction/developmental toxicity screening test in Wistar rats oral administration (gavage).* Report Number 80R0223/11C162. Germany: BASF SE.

bases its "worst-case exposure scenario" solely on a personal communication, relying on no actual data to conclude that this is the highest level to which workers could possibly be exposed.

In the profession of Industrial Hygiene, there are well-developed criteria for the use of exposure data in risk assessment. Much more is required than a single number. While there is not complete consensus as to the minimum number of samples necessary to identify an approximate maximum concentration, it is at least 12 and it may be 20 or more.[4] Despite this, EPA has simply reported a single number based on a personal communication. There is no indication that EPA has seen the sampling data, knows what they are, knows how many samples have been taken, or knows anything else about the data. Moreover, the sampling data should be available for public review so that commenters can provide their own interpretations to the docket. The public should not have to rely on the judgment of the manufacturer and the Agency that this is indeed the maximum exposure level.

In Industrial Hygiene, for data to be considered moderate quality, the following information must be available about the context in which the sampling was done[5]:

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[4] European Chemicals Bureau (1996). *Technical Guidance document in support of Commission Directive 93/67/EEC on risk assessment for new notified substances and Commission Regulation (EC) 1488/94 on risk assessment for existing chemicals.* Ispra: European Chemicals Bureau.
European Committee on Standardization (CEN, 1995). Workplace Atmospheres. Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy. EN689, Brussels.
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Tielemans E, Marquart H, De Cock J, Groenewold M, & Van Hemmen J. (2002). A proposal for evaluation of exposure data. *Annals of Occupational Hygiene*, 46(3), 287-297.

[5] Rajan, B., Alesbury, R., Carton, B., Gerin, M., Litske, H., Marquart, H., Olsen , E., Scheffers, T., Stamm, R. & Woldbaek, T. (1997). European proposal for core information for the storage and exchange of workplace exposure measurements on chemical agents. Applied Occupational and Environmental Hygiene, 12(1), 31-39.
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- The names of the chemical agents sampled
- The economic activity and size of the premises
- The processes that were sampled
- The occupations and tasks of the workers sampled
- The exposure control measures used
- The measurement strategy
- The dates of the samples
- The devices used to do the sampling (e.g. whether the devices were instant read or required lab analysis)
- Whether the samples were breathing zone or environmental samples (should be breathing zone for risk assessment)
- Duration of sampling (instantaneous, 15 min short term exposure limit sample, 8-hour shift, 12-hour shift, etc.)
- Analytical methods used
- Concentration measured for each sample (not just a report of the "highest")
- Units of measurement
- Sample Status

For data to be considered high quality, all of the above information would have to be available and the following data would need to be available as well[5]:

- Name and Address of premises
- Departments and work areas that were sampled
- The names and/or identifiers of the products containing the chemical agents sampled
- Exposure patterns
- RPE used
- Confinement
- Sample ID for each sample
- Exact sampling times
- Duration of exposure (Is it the same as the duration of sampling? Is it uniform throughout the shift? Are there periods of the shift with minimal or no exposure? Are certain tasks associated with peak exposures?

The Mott communication as reported by EPA fails to meet the minimal requirements for poor quality data, which are as follows[6]:

- Occupations and tasks of the workers sampled
- Name of the chemical agent sampled (EPA doesn't even know whether it is PV 29 or total dust)
- The year in which each sample was taken (precise dates would be better)
- Whether the samples were breathing zone or environmental samples (should be breathing zone for risk assessment)
- Duration of sampling (instantaneous, 15 min short term exposure limit sample, 8-hour shift, 12-hour shift, etc.)
- Concentration measured for each sample (not just a report of the "highest")
- Units of measurement
- Sample Status

Since the Mott communication fails to meet the criteria for poor quality, it would have to be classified as *unacceptable*[6]. It cannot be used to support a finding of "no unreasonable risk."

EPA Has No Evidence that Downstream Workers Will Have Lower Exposures

EPA makes a blanket assertion that all other exposures "are likely to be less than these worst-case scenarios." EPA bases this conclusion on several arguments. First, EPA argues "Oral ingestion is not a relevant pathway for workers manufacturing C.I. Pigment Violet 29 since there is no foreseeable route of exposure. Standard workplace practices prohibit eating and smoking in manufacturing facilities." This blanket rejection of the oral route of exposure is simply not supported by science. It has been estimated that approximately one in six workers may be involved in tasks in which inadvertent ingestion exposure could contribute to their total body burden[7].

EPA goes on to say "[O]ccupational exposures from... downstream users are likely to be limited due to the expected use of PPE (per Safety Data Sheet for C.I. Pigment Violet 29)..." In support of this assertion EPA quotes the manufacturers' safety data sheet (SDS), which states "Personal protective equipment (PPE) includes safety glasses with side-shields, dust goggle under certain circumstances, chemical resistant impervious gloves, and particulate respirators if needed..." There are several problems with this. First the instructions in the SDS are inadequate. The downstream user is not informed under what circumstances a dust goggle may be needed, nor is the user informed as to what kind of glove will be protective or when a particulate respirator is "needed." This means that, even in the best case, where every downstream user makes an earnest effort to provide the correct PPE, they do not have enough information to know what the correct PPE is.

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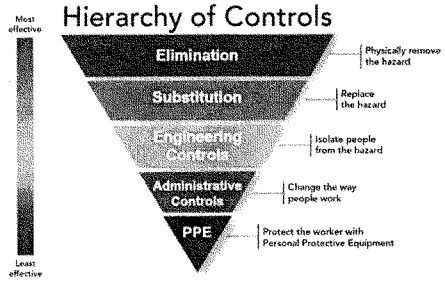
[6] *ibid.*

[7] Cherrie, J. W., Semple, S., Christopher, Y., Saleem, A., Hughson, G. W., & Philips, A. (2006). How important is inadvertent ingestion of hazardous substances at work? The Annals of occupational hygiene, 50(7), 693-704.

In relying on an assumption of universal voluntary[8] use of PPE to make its finding of "no unreasonable risk," EPA ignores the hierarchy of controls entirely. The hierarchy is a core component of standards issued by the U.S. Department of Labor – Occupational Safety and Health Administration (USDOL – OSHA). The hierarchy requires employers to eliminate, prevent and/or control hazards based upon the following preferred order of controls:

A) First: Elimination;
B) Then: Substitution of less hazardous materials, processes, operations or equipment;
C) Then: Engineering controls;
D) Then: Administrative controls; and
E) As a last resort: Personal Protective Equipment ("PPE")[9].

OSHA has relied upon the hierarchy of controls in every health standard it has issued[10]. the Centers for Disease Control & Prevention, National Institute for Occupational Safety & Health (CDC-NIOSH) depicts the hierarchy of controls with this graphic, which shows the significantly increased effectiveness of controls other than PPE[11]:



[8] Since EPA does not propose in the document to require PPE, it is must be relying on universal voluntary PPE use.
[9] Manuele FA (2006). ANSI/AIHA Z10-2005: The New Benchmark for Safety Management Systems. *Professional Safety* 25:30. http://www.coshnetwork.org/sites/default/files/Z10%20New%20Benchmark%20for%20Health%20and%20Safety%20Systems%20by%20Fred%20Manuele.pdf
[10] Cf. 29 C.F.R. § 1926.55 (to prevent employee exposure to inhalation, ingestion, skin absorption or contact with substances above safe levels, "engineering controls must first be implemented whenever feasible; when such controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used....."); 29 C.F.R. § 1910.134(a)(1) (to control occupational disease due to contaminated air, "the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used"); 29 C.F.R. § 1910.1025(e) (where employees are exposed to lead over permissible levels, "the employer shall implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead").
[11] Hierarchy of Controls, NIOSH (last updated July 18, 2016), https://www.cdc.gov/niosh/topics/hierarchy/.

EPA's finding of "no unreasonable risk" rests on the assumption that all employers will successfully control exposure by voluntarily applying the least effect exposure control method, namely PPE. From this EPA concludes that no exposures in downstream users will exceed those in manufacturing. This is not scientifically justifiable.

Sampling of repair technicians engaged in orbital sanding of automobile paint[12] has found total dust concentrations as high as 12 mg/m^3. Since it is unknown whether or not the samples reported in the Mott communication were total dust, these downstream workers may have exposures up to 24 times as high as the manufacturing workers. If we assume that the Mott communication referred to PV 29 only, these downstream exposures could exceed those in manufacturing if the concentration of PV 29 in the paint exceeds 4.2%. EPA has no valid basis for concluding that downstream exposures will not exceed manufacturing exposures.

Conclusion

EPA proposes to make a risk determination that "C.I. Pigment Violet 29 does not present an unreasonable risk of injury to human health or the environment..." If finalized as proposed, this risk determination would effectively put an end to both federal and state regulation of this substance.

EPA's proposed finding cannot be justified scientifically for the following reasons:

1. There are no chronic exposure studies of PV 29. Such studies are crucial to the research of many local and systemic endpoints, such as cancer and target organ toxicity. This substance has not been adequately examined scientifically. It would be scientifically unsound to issue a "no unreasonable risk" determination before such studies have been done.
2. The acute inhalation studies that EPA relies on to find that "Low hazard was reported" were considered by ECHA to be "insufficient for non-volatile substances." EPA ignored studies of related substances that ECHA concluded were applicable to PV 29. In these studies, animals exhibited clinical signs that included accelerated respiration and pulmonary respiration sounds. One of the test animals died.

3. EPA relies on a single personal communication for its occupational exposure data. This does not meet the scientific standards of industrial hygiene.

4. EPA asserts without evidence that downstream workers will have lower exposure than manufacturing workers. It relies on the assumption that, despite inadequate guidance in the SDS, all downstream employers will successfully protect their employees using the least effective method, namely personal protective equipment.

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[12] Enander, R. T., Cohen, H. J., Gute, D. M., Brown, L. C., Desmaris, A. M. C., & Missaghian, R. (2004). Lead and methylene chloride exposures among automotive repair technicians. *Journal of Occupational and Environmental Hygiene*, 1(2), 119-125.

There is no scientific basis for EPA's proposed "no unreasonable risk" finding. EPA musts withdraw its draft risk evaluation, commit to the data collection and analysis that is needed to fully evaluate PV 29, and re-issue a revised risk evaluation, along with all of the underlying health and safety studies, for public review and comment.

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Comments of the International Union, UAW

on

Accidental Release Prevention Requirements:
Risk Management Programs Under the Clean Air Act, Proposed Rule

(83 Fed. Reg. 24, 850; May 30, 2018)
Docket No. EPA-HQ-OEM-2015-0725

Submitted by

Brett Fox
Director of Health and Safety Department
International Union, United Automobile, Aerospace, and Agricultural Implement Workers of America, UAW

Background

On May 30, 2018, the Environmental Protection Agency (EPA) published a proposed rule entitled "Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act," (83 Fed. Reg. 24, 850). This rule would rescind or weaken almost all the chemical disaster prevention and mitigation measures previously adopted by the agency in its January 2017 final rule, "Accidental Release Prevention Requirements: Risk Management Programs Under the Clean Air Act," 82 Fed. Reg. 4594 (Jan. 13, 2017).

UAW Opposes Proposed Rule

The International Union, UAW, represents about one million active and retired members in the automobile, aerospace and agricultural industries. A number of UAW members work in food manufacturing, paint and chemical plants which are often facilities that are required to file EPA risk management plans (RMPs). Among these are a chemical manufacturer in Adrian, MI, and a wastewater facility in Detroit, both of which use chlorine, as well as a brewery in Trenton, OH which uses anhydrous ammonia. Many of our members live and work in the vulnerability zone of the Detroit wastewater facility, which includes over 2 million people. We oppose the proposed rule, which would repeal many protections against chemical disasters and weaken many others. In doing so it would endanger the lives of those who work in and live near RMP covered facilities, including UAW members and retirees. We call on EPA to implement the 2017 Chemical Disaster Rule without further delay or weakening and to drop its proposed rule.

The UAW opposes this proposed rule. Among the provisions that the agency has proposed to rescind that raise concerns are:

- A requirement for safer technologies and alternatives assessment (STAA), applicable to facilities in the refining, chemical manufacturing, or pulp and paper milling industries (40 C.F.R. § 68.67(c)(8); 83 Fed. Reg. at 24,857-58)
- Expanded safety training requirements that include supervisors and all others involved in operation of process. (40 C.F.R. §§ 68.54 and 68.71; 83 Fed. Reg. at 24,857-58.)
- A requirement to keep process safety information up to date. (40 C.F.R. § 68.65(a); 83 Fed. Reg. at 24,857-58.)
- A requirement to make certain information available directly to interested community members. (40 C.F.R. § 68.210(b)-(d); 83 Fed. Reg. at 24,859.)
- A third-party audit requirement (40 C.F.R. §§ 68.59, 68.80; 83 Fed. Reg. at 24,857-58)
- Several provisions related to investigations including requirements to:
    - Investigate even those cases in which the affected process was decommissioned or destroyed. (40 C.F.R. §§ 68.60(a)(1), 68.81(a)(1); 83 Fed. Reg. at 24,857-58.)

- Investigate "near misses" that could reasonably have led to release of a listed chemical. (40 C.F.R. §§ 68.60(a)(2), 68.81(a)(2); 83 Fed. Reg. at 24,857-58.)
- Conduct a "root cause analysis" as part of every investigation. (40 C.F.R. § 68.60(d)(7), 68.81(d)(7); 83 Fed. Reg. at 24,857-58.)
- Include at least one person knowledgeable about the process in each investigation; Complete each investigation within 12-months; Produce a report of findings and a schedule for addressing any recommendations. (40 C.F.R. §§ 68.60(c)-(d), 68.81(d); 83 Fed. Reg. at 24,857-58.)
- Consider findings from incident investigations in the hazard review and analysis processes. (40 C.F.R. § 68.50(a)(2), 68.67(c)(2); 83 Fed. Reg. at 24,857-58.)

We also oppose EPA's proposals to delay compliance dates for provisions that are not repealed.

Flaws in EPA's Analysis

EPA justifies its proposal by stating:

> Considering the low and declining accident rate at RMP facilities under the existing RMP rule, the Agency believes it is likely that the costs associated with the prevention program provisions of the RMP Amendments exceed their benefits unless significant non-monetized benefits are assumed. Thus, we recommend rescinding them in accordance with the direction reflected in E.O. 13777. (83 Federal Register 24873)

In the first instance, the UAW does not believe that the Clean Air Act permits EPA to rescind the chemical disaster regulations based on cost. EPA does not cite an authority to consider cost at all. We urge the agency to use a more rigorous form of analysis with quantitative results that are transparent to all stakeholders.

The Agency's assertion that costs exceed benefits is based on what it describes as a "low and declining accident rate." EPA's assertion that the rate is "low and declining" is based on exhibit 3-7 on p.34 of the Reconsideration RIA[1] (reproduced above). Unfortunately, Exhibit 3-7 shows no rates at all, but rather shows the calendar year and the number of impact

Exhibit 3-7: RMP Reportable (Impact) Accidents by Year, 2004 – 2016

Year	Impact Accidents
2004	197
2005	152
2006	140
2007	204
2008	168
2009	149
2010	128
2011	138
2012	118
2013	123
2014	128*
2015	113*
2016	99*
Total (2004 – 2013)	1,517
Total (2005 – 2014)	1,448
Total (2006 – 2015)	1,409
Total (2007 – 2016)	1,368
Average/Year (2004 – 2013)	152
Average/Year (2005 – 2014)	145
Average/Year (2006 – 2015)	141
Average/Year (2007 – 2016)	137

*May increase after the 2019 RMP reporting wave occurs.

[1] EPA April 2018. *Regulatory Impact Analysis - Reconsideration of the 2017 Amendments to the Accidental Release*

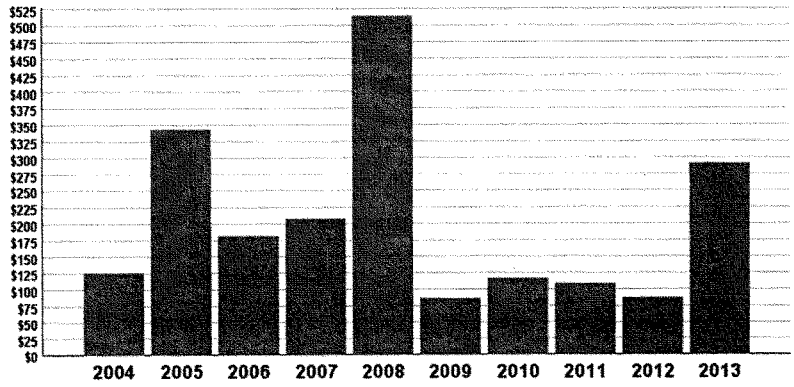
accidents that occurred in that year, as well as some totals and averages. The accident rate is the number of accidents that occurred in a year divided by the number of facilities that could have had an accident during the year. Nowhere in the RIA does EPA appear to have calculated rates.

It is important to look at rates and not just numbers. Around 2008, the economy took a turn for the worse. It is possible that a significant number of facilities closed and did not re-open. If this is what happened, the 138 accidents in 2011 might represent *a significantly higher rate* than the 140 accidents in 2006. We cannot know whether or not that is the case based only on the data that the agency has presented. The burden of proof is on the Agency to substantiate its assertion that that the rate is declining.

Property Damage, Injuries, Illnesses, Evacuations, Shelter and Deaths Tell a Different Story

Chart 1

Total on- and off-site Property Damage (in millions of dollars) due to Reportable RMP Events by Year



The number, or even the rate of RMP-reportable events, may not be the most important statistic to examine. If, instead, we use the data provided by EPA in the docket[2] to look at the total on- and off-site property damage[3] done by RMP-reportable events we see in

[2] EPA. February 2016. *Risk Management Plan (RMP) Facility Accident Data, 2004-2013.* Office of Land and Emergency Management, US Environmental Protection Agency, Washington, DC. Docket ID: EPA-HQ-OEM-2015-0725-0002.

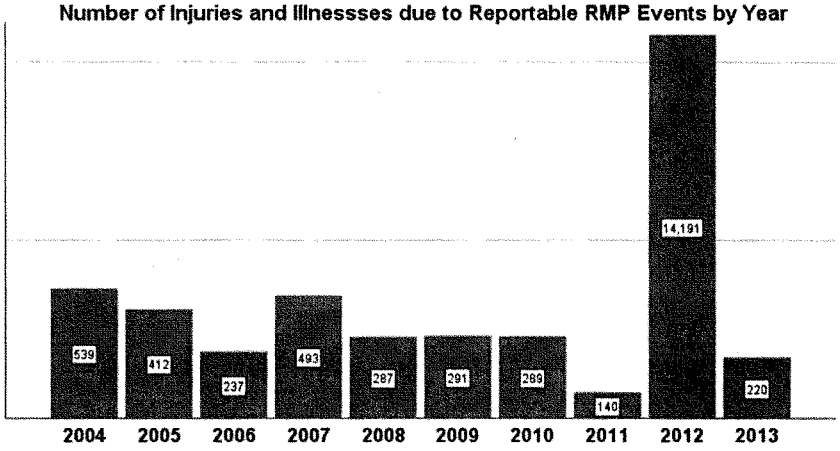
[3] This is calculated by adding Onsite Property Damage (Column AD in the above cited spreadsheet) to Offsite Property Damage (Column AJ)

Chart 1 (above) that 2013 was the most expensive year since 2008. RMP-reportable events did almost $ 3 hundred million worth of damage in 2013[4].

Another informative statistic, called "injuries and illnesses" can be calculated by adding up on-site and off-site injuries, hospitalizations and outpatient medical care[5]. We can see that 2012 had more than 10 times as many as injuries and illnesses as any other year going back to 2004. As Chart 2 indicates, there were over 14,000 in 2012 and fewer than 500 in any other year between 2004 and 2013.

Chart 2

Number of Injuries and Illnessses due to Reportable RMP Events by Year



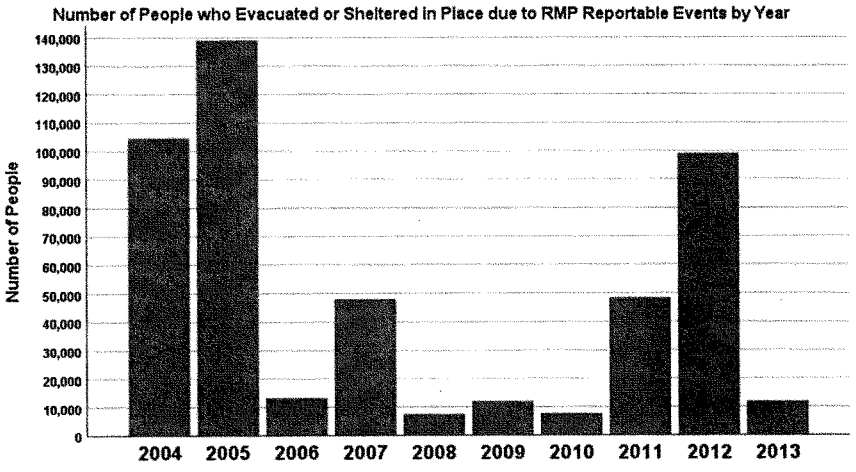
Of the 14,191 reported injuries and illnesses associated with RMP-reportable events in 2012, 14,003 resulted from a pipe rupture that caused a fire by releasing flammable gas at the Chevron refinery in Richmond, California on August 6, 2012. The associated medical conditions included breathing problems, chest pain, shortness of breath, sore throat, and headaches. These data illustrate the difficulty of identifying trends when one is dealing with low-probability/high-consequence events. Without the Chevron Richmond event, there might have been mild declining trend in injuries and illnesses, but it is difficult to attribute importance to a trend when a single event can destroy it. Unless hazards are eliminated, there is always the possibility that such a single event can occur.

[4] EPA indicates that 2013 is the most recent year for which complete data are available.

[5] Columns from Docket ID EPA-HQ-OEM-2015-0725-0002 added to make this calculation are: Injuries - Workers/Contractors (AA), Injuries - Public responders (AB), Injuries – Public (AC), Offsite Hospitalizations (AF), and Offsite - Other Medical Treatments (AG).

A third useful statistic can be calculated by adding the number of people who evacuated to the number of people who sheltered in place[6]. Chart 3 shows that 2012 had the highest number since 2005. Almost 100,000 people had to evacuate or to shelter in place due to RMP reportable events in 2012. In this case, two events were responsible for 98,000 of the 99,000 plus people who had to evacuate or shelter that year. One was the Chevron Richmond, CA refinery event described above. The second was a gas release from the Blanchard Refining Company in Texas City, TX on March 27, 2012.

Chart 3



This again illustrates that there is not a declining trend and that the picture can be changed significantly by one or two major events. The only solution is hazard elimination.

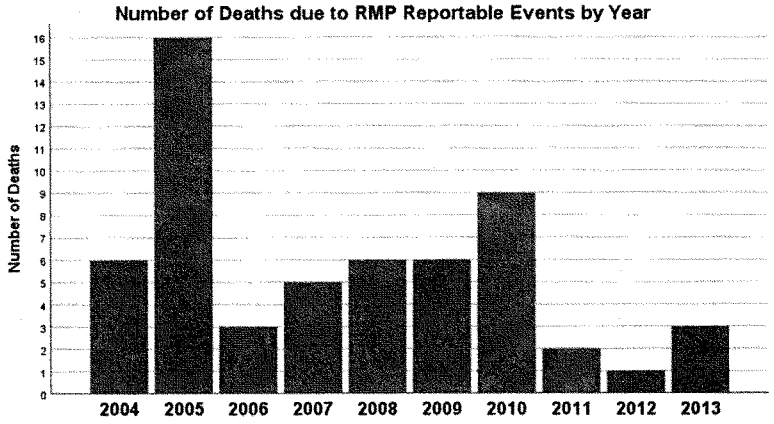
The number of deaths is a potentially useful statistic as well[7]. Fortunately, the number of deaths to due RMP-reportable events is relatively small. This means that there may not be statistical significance to any time-related trend in deaths. Still, the 57 deaths due to RMP events that occurred between 2004 and 2013 are 57 too many. There is no declining trend. While it is good news that since 2005, the number of deaths due to RMP have not surpassed 16, Chart 4 shows a steady increase from 2006-2010 and 2013 saw more deaths than 2011 and 2012.

[6] This is simply the sum of Offsite Evacuated (AH) with Offsite Sheltered in Place (AI).

[7] This statistic sums Onsite Deaths - Workers/Contractors (X), Onsite Deaths - Public responders (Y), Onsite Deaths – Public (Z), and Offsite Deaths (AE)

Chart 4

Number of Deaths due to RMP Reportable Events by Year



Not only has EPA incorrectly asserted a "low and declining accident rate," despite having declined to calculate rates, but EPA has also cherry-picked the numbers it did present. The Agency showed the number of "accidents" which appeared to support its case. It did not show property damage, injuries and illnesses, deaths or people who evacuated or sheltered in place. The Agency has failed to meet its burden of proof.

STAA vs. An "Enforcement-Led" Approach

EPA proposes to rescind a requirement in § 68.67(c)(8) for each facility with Program 3 regulated processes that is covered by NAICS[8] code 322 (paper manufacturing), 324 (petroleum and coal products manufacturing), or 325 (chemical manufacturing) to conduct a safer technology and alternatives analysis (STAA) that addressing measures applicable to eliminating or reducing risk from process hazards. Facilities are directed to consider the following in order of preference: inherently safer technologies, passive measures, active measures and procedural measures. They are directed to evaluate the practicability of any inherently safer technologies and designs considered. EPA proposes to replace this requirement with an "enforcement-led" approach in which facility owners and operators would enter into consent agreements involving implementation of safer alternatives *after* a disaster has taken place.

EPA supports its proposal by arguing that the data as analyzed by the American Chemistry Council (ACC) demonstrate

[8] North American Industrial Classification System

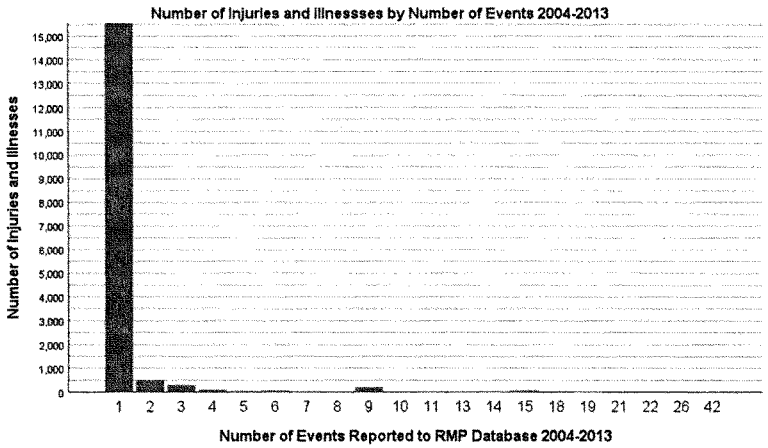
> ...that accidents, and especially patterns of multiple accidents, are concentrated in very few facilities. Of the approximately 1500 reportable accidents in EPA's RMP database from the years 2004 to 2013, only 8% of the 12,500 facilities subject to the RMP rule reported any accidental releases, while the less than 2% of facilities that reported multiple releases in that time frame were responsible for nearly half (48%) of reportable accidents from all types of facilities. (83 Federal Register 24872)

EPA further states:

> Several commenters during the rulemaking asked that EPA emphasize enforcement rather than amend the RMP rule. The data (as analyzed by ACC in its petition) tend to support the reasonableness of an enforcement-led approach to strengthening accident prevention that focuses on problematic facilities rather than broader regulatory mandates...
>
> Given the small numbers of problematic facilities, the reasonableness of an enforcement-led approach to the prevention programs under the RMP rule in lieu of the RMP Amendments leads us to believe that the prevention program provisions in the RMP Amendments place an unnecessary and undue burden on regulated entities. In lieu of broadly imposing STAA in particular on broad sectors, an enforcement-led approach can retain much benefit of the RMP Amendments at a fraction of the cost. (83 Federal Register 24872-3).

A closer look at the data shows that they do not support the arguments made by ACC and EPA. Of all the injuries and illnesses reported to the RMP database 2004-2013, 15,654, approximately 92%, occurred at facilities that reported *one event* during that time period (Chart 5). Of the 57 deaths reported to the database, 30 (53%) occurred at facilities that reported exactly one event. This means that any enforcement measure that does not take place until after the first event has occurred is too late to prevent the overwhelming majority of injuries and illnesses and the majority of the deaths. In addition, more than 128 thousand people evacuated or sheltered in place, due to events at facilities that had exactly one event. This is more than one quarter of the total for the years 2004-2013. $400 million worth of property damage resulted from such events, over 19% of the total. None of this is preventable by an enforcement-led approach that targets facilities only after a disaster has occurred.

Chart 5



In contrast, as can be seen in the table below, during the period 2004-2013, more than 90% those who had to evacuate or shelter in place had to do so due to events at Program Level 3 facilities in NAICS codes 322, 324 and 325. These facilities were associated with about 90%, of the injuries and illnesses 84% of the property damage, and almost three-quarters of the deaths. Whereas targeting facilities for action only *after* an event occurs would miss more than 90% of the injuries and illnesses and over half the deaths, targeting Program Level 3 facilities in these NAICS codes would capture the vast majority of impacts.

Impact of Events at STAA-Covered Facilities and Other Facilities 2004-2013			
	STAA	Other	Percent of Total due to Events at STAA-Covered Facilities
Evacuation/Shelter	445,525	46,729	**91%**
Injuries/Illnesses	15,361	1,738	**90%**
Property Damage (millions of dollars)	$1,728	$339	**84%**
Deaths	42	15	**74%**

Because of this, we believe that it would be ill-advised to rescind the STAA provisions of the 2017 RMP rule and replace them with enforcement that occurs after one or more events have taken place.

Trigger for Third-Party Audits and Root-Cause Analysis

EPA made the following request for public comment:

> While EPA believes an enforcement-led approach is preferable to a uniform regulatory standard for third party audits and root cause analyses, the Agency requests public comment on whether a third-party audit or root-cause analysis should be required under certain well-defined regulatory criteria. For third party audits, such criteria might include requiring audits following multiple RMP-reportable accidents... Although it is not our intent at this time to adopt such provisions, we invite parties to suggest appropriate regulatory criteria for third party audits and root-cause analyses... Should third party audits only be mandated for facilities with multiple incidents?

The UAW opposes any rescission of the third-party audit and root-cause analysis provisions, which are related to investigations that occur after an RMP-reportable event. We are strongly opposed to waiting until after a second event has occurred before these requirements would be put in place. During the period 2004-2013, *second* RMP-reportable events led almost 80,000 people to evacuate or shelter-in-place, and resulted in almost $690 million in property damage, 386 injuries and illnesses and 6 deaths. None of this damage can be prevented by an audit or root-cause analysis if it is not conducted after the first event.

Conclusion

The UAW opposes the proposed rule which would repeal many protections against chemical disasters and weaken many others. In doing so it would endanger the lives of those who work in and live near RMP covered facilities, including UAW members and retirees. We urge the EPA to implement the 2017 Chemical Disaster Rule without further delay or weakening and to drop its proposed rule. We oppose all of EPA's proposed rescissions and seek to retain all of the provisions of the 2017 RMP rule including STAA, safety training, maintenance and sharing of information, third-party audits, and all the provisions related to investigations. We oppose proposals to delay compliance dates as well.

EPA asserted that there is a "low and declining accident rate at RMP facilities under the existing RMP rule," but failed to calculate or report any rates. Other relevant statistics do not show a decline. 2013, the most recent year for which complete data are available saw more property damage due to RMP events than any year since 2008. 2012 saw more injuries and illnesses than any other year between 2004 and 2013. It also saw more people evacuating or sheltering in place than any year since 2005.

EPA argued that an enforcement-led approach, based on targeting facilities that have already had one or more RMP-reportable events can be just as effective as the provisions of the 2017 rule that it proposes to rescind. The data show that this assertion is simply false. Between 2004 and 2013 more than 15,000 injuries and illnesses, over

90% of the total occurred at facilities that reported exactly one event. None of these could have been prevented by an enforcement-led approach *triggered after the first event*. In contrast, RMP-reportable events at Program Level 3 facilities in NAICS codes 322, 324 and 325 were associated with impacts ranging from 74% of deaths to 91% of people who had to evacuate or shelter in place. Eliminating regulatory prevention measures aimed at these facilities, such as STAA, makes it difficult or impossible to prevent these impacts.

Finally, EPA asked whether third party audits and root-cause analysis should be limited to facilities with multiple events. We believe that audits should not be limited in this manner. During the period 2004-2013, *second* RMP-reportable events led almost 80,000 people to evacuate or shelter-in-place, and resulted in almost $690 million in property damage, 386 injuries and illnesses and 6 deaths. None of this damage can be prevented by an audit or root-cause analysis if it is not conducted after the first event.

August 23, 2018

The Honorable Sonny Perdue
Secretary
U.S. Department of Agriculture
1400 Independence Avenue, SW
Washington, DC 20250

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Secretary Perdue and Acting Administrator Wheeler:

As organizations representing tens of thousands of American farmers and others who depend upon chlorpyrifos for pest management, we are deeply concerned about the recent decision of the U.S. Court of Appeals for the Ninth Circuit ordering EPA to revoke tolerances and registrations for this critical pesticide. This decision is unprecedented; no court has previously ordered EPA both to cancel uses and revoke tolerances for a pesticide. Its significance goes beyond just chlorpyrifos and threatens the established regulatory process for all crop protection tools.

Chlorpyrifos is used on 50 crops in 45 states, and has played a key role in pest management efforts in the U.S. and worldwide for over 50 years. Pesticides such as chlorpyrifos provide critical risk management tools to farmers and others by helping improve food production, protect health and safety, and ensure a vital and productive supply of food and fiber to our nation and world markets. For many invasive pests, growers face limited or no viable alternatives, and when an outbreak of a new pest occurs, users look to chlorpyrifos as a proven first-line of defense.

While the Court stated that EPA has not made a finding that chlorpyrifos tolerances satisfy the safety standard under the Federal Food, Drug, and Cosmetic Act ("FFDCA"), and has made conclusive scientific findings that chlorpyrifos is unsafe at the present regulatory standard, in fact the Agency has not changed its 2006 final determination done pursuant to statutorily-mandated reregistration that current chlorpyrifos uses meet the FFDCA's safety standard. The only EPA materials raising issues about that determination are preliminary, non-binding assessments made during the ongoing registration review of chlorpyrifos that are not final "findings." Moreover, these non-final assessments were based in large part on an epidemiology study that has been consistently criticized as unreliable for purposes of regulatory decision-making by EPA Scientific Advisory Panels, the U.S. Department of Agriculture, and many other interested stakeholders.

Further, the only legal avenue for EPA to "modify or revoke a tolerance" is to undertake the administrative process delegated to the Agency by Congress. That process has not been completed, and the Court cannot substitute its judgment for EPA and tell EPA the scientific conclusion it must reach. Finally, EPA's 2017 Order denying the administrative Petition to revoke tolerances, made after the Agency's consideration of relevant science-based comments from USDA and other interested stakeholders, expressed confidence that the current regulatory

standard is protective of human health. Two intensive reviews of chlorpyrifos completed in 2017 by the European Food Safety Authority and the government of Australia reached a similar conclusion.

The current EPA safety standard for chlorpyrifos properly rests on five decades of experience in use, health surveillance of manufacturing workers and applicators, and over 4,000 studies and reports that have examined the product in terms of health, safety and the environment.

Revocation of tolerances and cancellation of chlorpyrifos registrations would have a significant negative impact on growers and users in the United States and globally through effects on trade that need to be properly assessed. By eliminating through judicial action the science-based analysis and other steps that EPA must take under the FFDCA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Court would undercut the future ability of growers and users to employ essential risk protection tools. Further, by ordering EPA to rush into registration cancellation, the Court would force EPA to violate the longstanding procedural safeguards and other requirements provided by Congress under those statutes, robbing American growers, other users, and the registrant of their due process and other rights.

Based on the preceding, we respectfully urge EPA to petition for a rehearing en banc of this decision with the Ninth Circuit Court.

Sincerely,

Agricultural Retailers Association
Almond Alliance of California
American Farm Bureau Federation
AmericanHort
American Seed Trade Association
American Society of Sugar Beet Technologists
American Soybean Association
American Sugarbeet Growers Association
Beet Sugar Development Foundation
California Alfalfa & Forage Association
California Citrus Mutual
California Citrus Quality Council
California Cotton Ginners & Growers Association
California Dried Plum Board
California Fresh Fruit Association
California Specialty Crops Council
California Walnut Commission
Chemical Industry Council of Illinois
Cherry Marketing Institute
Corteva Agriscience™, Agriculture Division of DowDuPont™

Cranberry Institute
CropLife America
Delaware-Maryland Agribusiness Association
Delta Council
Florida Citrus Mutual
Golf Course Superintendents Association of America
Minnesota Crop Production Retailers
National Agricultural Aviation Association
National Association of Wheat Growers
National Corn Growers Association
National Cotton Council
National Council of Farmer Cooperatives
National Onion Association
National Sorghum Producers
New Jersey Farm Bureau
New Jersey Green Industry Council
New York State Chemistry Council
Northwest Horticultural Council
Oregonians for Food & Shelter
RISE – Responsible Industry for a Sound Environment
Schertz Aerial Service, Inc.
Society of American Florists
Texas Citrus Mutual
Texas Sorghum Producers
United Fresh Produce Association
U.S. Apple Association
US Beet Sugar Association
USA Dry Pea & Lentil Council
Washington Friends of Farms & Forests
Washington State Potato Commission
Western Agricultural Processors Association
Western Growers
Western Plant Health Association

Cc: Senate Agriculture Committee Chairman Pat Roberts
Senate Agriculture Committee Ranking Member Debbie Stabenow
House Agriculture Committee Chairman Michael Conaway
House Agriculture Committee Ranking Member Collin Peterson
The Honorable Jeffrey Wood, Acting Assistant Attorney General, Environment and Natural Resources Division, U.S. Department of Justice

CHLORPYRIFOS IN AGRICULTURE

EPA is considering taking this tool from growers. YOUR SUPPORT IS CRITICAL.

Chlorpyrifos is a critical tool for growers of over 50 different types of crops in the United States. Farmers rely on chlorpyrifos because of its efficacy, low cost, tank mix compatibility, ease of implementation into existing Integrated Pest Management and Integrated Resistance Management programs, and minimal impact on beneficial insects. For many important pests, growers face limited or no viable alternatives to chlorpyrifos. When an outbreak of a new pest occurs, growers look to chlorpyrifos as a proven first-line of defense.

Background on Chlorpyrifos

Chlorpyrifos is one of the most widely used active ingredients in insecticides in the world. Since it was first registered in the United States in 1965, chlorpyrifos has played a key role in pest management efforts in the United States and around the world. Today, chlorpyrifos is registered in almost 100 countries worldwide for use on more than 50 different crops against damage caused by a wide range of insect pests. In 2007, the Natural Resources Defense Council (NRDC) and Pesticide Action Network North America (PANNA) petitioned the EPA to revoke all tolerances and cancel all registrations for chlorpyrifos. Because the EPA was ordered to respond to the Ninth Circuit Court of Appeals on the petition before their evaluations of chlorpyrifos were completed, the EPA had not yet fully evaluated several factors in its analysis of chlorpyrifos and risks withdrawing an important insecticide when issuing the proposal to revoke tolerances. EPA just announced that it is seeking public comment on a Notice of Data Availability (NODA) that contains the proposed risk assessments that the Agency may use in support of a decision to revoke all tolerances. The NODA is not EPA's final decision, but the agency must make a final decision by March 31, 2017. The public comment period for this NODA will likely be the last opportunity for stakeholders to weigh in on the cost-benefit analysis by expressing the critical need for chlorpyrifos, and to call for the EPA to rely on sound and transparent sciences and a reliable regulatory process.

"Chlorpyrifos is an extremely valuable tool for farmers due to its efficacy, broad-spectrum activity against multiple pests and its fit with conservation biological control in crops. Revocation of all food tolerances for chlorpyrifos will have a significantly negative impact on the production capabilities and economic stability of producers of many human and animal food crops."
EPA-HQ-OPP-2015-0653

U.S. Department of Agriculture

To voice your support for chlorpyrifos to EPA, go to: www.chlorpyrifos.com/petition/agriculture by January 17, 2017.

Economic Importance of Agriculture

The agricultural industry's impact on today's economy is substantial. According to the United States Department of Agriculture's Economic Research Service, in 2014 the agriculture industry contributed $985 billion to U.S. Gross Domestic Product (GDP), which accounted for almost 6% of the country's GDP. Agricultural products are responsible for about 10% of the country's total exports, and today, about 20% of all agricultural goods produced are exported to foreign markets at a value of over $140 billion. The agriculture industry also plays an important role in employment across the United States. In fact, over 9% of total U.S. employment is related to agriculture.

Importance of Chlorpyrifos in Agriculture

Chlorpyrifos contributes significantly to the control of insect pests in a wide range of crops including cereal, oil, forage, fruit, nut, and vegetable crops. It is often the first product used to attempt control of a new or unknown insect pests because of its broad spectrum control, fast knock down, and strong support database on health and ecological safety, efficacy, and management and use information.

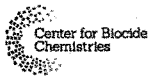
Chlorpyrifos is an insecticide active on foliar-feeding and soil-dwelling insect pests primarily by contact. It has demonstrated short residual activity on plant foliage making it safe on crops, while also providing growers more application and timing flexibility.

Chlorpyrifos has been an integral component of insect pest management programs for decades due to its efficacy, cost, tank mix compatibility, and ease of implementation into existing Integrated Pest Management and Integrated Resistance Management programs which are the critical components of sustainable insect management programs. The availability of chlorpyrifos allows growers to rotate between different insecticide modes of action, which helps delay resistance development in all insecticides. Resistance development to other insecticides would proceed at an accelerated rate in the absence of chlorpyrifos.

In some instances, the loss of chlorpyrifos would result in increased insecticide use where it was replaced by an insecticide with a narrower spectrum of control. Additional insecticide applications may be required to control multiple pests if the alternative insecticide did not control all insect pests present, or damaged the natural beneficial population resulting in flaring of certain insect pest populations.

Few insecticide alternatives are available for the control of certain insect pests, especially for minor or new pests, or for use in small acreage crops. Chlorpyrifos is significantly less disruptive to beneficial populations than alternative chemistries and, when used as part of an Integrated Pest Management program, it has a short-term impact on natural enemy populations.

Dow AgroSciences



For Immediate Release

March 12, 2019

Contact: Ethan Mathews
Phone: 202-872-3841
Email: emathews@croplifeamerica.org

PRIA Coalition Commends Congress for Passage of PRIA IV

WASHINGTON, D.C. – Members of the Pesticide Registration Improvement Act (PRIA) Coalition applaud President Trump and leaders of the 116th Congress for passing a bipartisan, long-term PRIA reauthorization that will strengthen and improve pesticide registration through 2023. House and Senate leadership, Congressional appropriators and authorizing committees (House and Senate Ag, and House Energy and Commerce) have worked diligently over the past two years to preserve the benefits and process improvements first realized with PRIA's original enactment in 2004. The bill was signed by President Trump on Friday, March 8, 2019 and the U.S. Environmental Protection Agency (EPA) plans to implement the law quickly.

The new law provides important resources to EPA to evaluate and register new pesticide products in a timely manner and review existing products to ensure that they meet today's scientific standards. As part of the registration and registration review processes, EPA assesses the benefits of the product and the hazards to human health and the environment that may be posed by the pesticide to ensure that it will not have unreasonable adverse effects on humans, the environment and non-target species, including endangered species.

Under the law, the pesticide industry will pay more than $45 million in pesticide registration and maintenance fees annually through 2023, which will supplement federal appropriations, provide resources for EPA's registration and registration review efforts, create a more predictable and timely pesticide evaluation process, and fund worker protection training activities. PRIA 4 will also preserve important protections for pesticide applicators and farmworkers using pesticides through 2021.

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Safer Chemicals Healthy Families

March 12, 2019

Honorable Paul Tonko, Chair
Honorable John Shimkus, Ranking Member
Environment and Climate Change Subcommittee
Energy and Commerce Committee

Honorable Frank Pallone, Chair
Honorable Greg Walden, Ranking Member
Energy and Commerce Committee
US House of Representatives

Re: EPA Fails to Protect Workers from Methylene Chloride Paint Removers under TSCA

As the Committee considers the effectiveness of worker protections under the Toxic Substances Control Act (TSCA), the undersigned groups wish to highlight EPA's egregious failure to safeguard workers from dangerous paint removers containing methylene chloride (MC).

We understand that EPA will soon finalize a rule under TSCA section 6(a) that will limit only consumer uses of MC paint removers and allow commercial uses of these products to continue without restriction. This will leave tens of thousands of workers at risk of death and serious health effects and violate EPA's obligations under TSCA. Furthermore, the failure to limit commercial use will continue to endanger consumers who will still be able to access commercially available products.

In January 2017, EPA proposed to ban the manufacture and sale of MC paint removal products for both commercial and consumer uses. The proposal concluded that both types of use present an unreasonable risk of injury to human health. Inhaling MC fumes causes carbon monoxide to build up rapidly in the blood, leading to heart failure, loss of consciousness, coma, and death. EPA's proposed rule attributed forty-nine deaths to MC since 1976, including several involving workers engaged in commercial uses.

Following publication of the proposed rule, at least four more deaths from MC exposure have occurred. The decedents include Kevin Hartley, a 21-year-old employee of a contractor, who died of MC exposure in April 2017 while refinishing a bathtub, and Drew Wynne, a 31-year-old who died in October 2017 while stripping the floor of a refrigerator in his small business.

Based on EPA's comprehensive 2014 risk assessment, the proposed rule concluded that "workplaces are estimated to present exposure levels between 100 times to greater than and 1,000 times more than those that are of concern." As EPA emphasized, "[n]ot only workers, but also occupational bystanders, or workers engaged in tasks other than paint and coating removal, would be at acute risk for central nervous system effects." We are also concerned that even low-level or short-term exposures to women during pregnancy may cause harm. EPA's IRIS assessment identifies a potential elevated risk of miscarriages and reproductive risks to occupationally exposed women and men.

EPA's proposal concluded that labels, warnings and use instructions would not provide effective protection to workers and that use of respirators would not eliminate significant risks. It also decided

against limiting the proposed rule to consumer uses because "paint and coating removal products containing methylene chloride frequently are available in the same distribution channels to consumers and professional users" and "cannot be straightforwardly restricted to a single type of project or user."

Appearing at a Senate subcommittee hearing in March 2018, former Administrator Scott Pruitt testified that "I recently met with individuals impacted by methylene chloride and made the decision to proceed with that [ban] by forwarding it to OMB." Mr. Pruitt said that "We have forwarded to OMB recently a proposed rule prohibiting consumer and commercial paint stripping uses for methylene chloride, following through on EPA's January 2017 proposal that methylene chloride be banned from products." EPA's current path is a betrayal of that commitment.

EPA should revise the draft final rule so that both commercial and consumer uses of MC paint removers are banned under TSCA. Failure to do so would be a patent abdication of EPA's public health protection responsibilities under the law.

Respectfully submitted,

Liz Hitchcock
Acting Director
Safer Chemicals Healthy Families

Pamela Miller
Executive Director
Alaska Community Action on Toxics

Veri di Suvero
Director
Alaska Public Interest Research Group

Katie Huffling
Executive Director
Alliance of Nurses for Healthy Environments

Linda Reinstein
President
Asbestos Disease Awareness Organization

Karuna Jaggar
Executive Director
Breast Cancer Action

Janet Nudelman
Director of Program and Policy
Breast Cancer Prevention Partners

Ansje Miller
Director of Policy and Partnerships
Center for Environmental Health

Kathleen A. Curtis, LPN
Executive Director
Clean and Healthy New York

Mark S. Rossi, PhD
Executive Director
Clean Production Action

Lynn Thorp
National Campaigns Director
Clean Water Action

Rebecca Meuninck
Deputy Director
Ecology Center

Michael Belliveau
Executive Director
Environmental Health Strategy Center

Melanie Benesh
Legislative Attorney
Environmental Working Group

Rachel Gibson, JD, MPP
Director, Safer Chemicals
Health Care Without Harm

Deanna White
Director
Healthy Legacy Coalition

Madeleine Foote
Legislative Representative
League of Conservation Voters

Beth McGaw
President
Learning Disabilities Association of America

Diana Zuckerman, PhD
President
National Center for Health Research

Jennifer Sass, Ph.D.
Senior Scientist
Natural Resources Defense Council

Jen Coleman
Health Outreach and Communications Director
Oregon Environmental Council

Sarah Doll
Executive Director
Safer States

Ted Schettler MD, MPH
Science Director
Science and Environmental Health Network

Laurie Valeriano
Executive Director
Toxic-Free Future

Kara Cook
Toxics Director
U.S. PIRG

Lauren Hierl
Executive Director
Vermont Conservation Voters

Paul Burns
Executive Director
Vermont Public Interest Research Group

Michelle Naccarati-Chapkis
Executive Director
Women for a Healthy Environment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 12 2019

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

The Honorable Paul Tonko
Chairman
Environment & Climate Change Subcommittee
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

The Honorable John Shimkus
Ranking Member
Environment & Climate Change Subcommittee
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Tonko and Ranking Member Shimkus,

I am writing in consideration of the March 13, 2019, Subcommittee hearing entitled *Mismanaging Chemical Risks: EPA's Failure to Protect Workers*. Protecting workers is of the utmost importance to EPA and is a key component of our Agency's mission to protect public health and the environment. This letter provides highlights and examples of the Agency's considerations when assessing the safety and protection of workers under our pesticides and chemicals programs.

You both were instrumental in achieving passage of the *Frank R. Lautenberg Chemical Safety for the 21st Century Act (Act)*, which amended the Toxic Substances Control Act (TSCA). As you know, EPA's implementation of the Act provides meaningful opportunities for the Agency to take proactive steps to protect workers. The Act requires EPA to determine whether a chemical substance presents or may present an unreasonable risk to "a potentially exposed or susceptible subpopulation identified as relevant to the risk evaluation" by the Agency. Those populations include workers. Therefore, considering worker protection is an important element of implementing TSCA for existing as well as new chemical substances and EPA takes that work seriously. I am pleased to offer in this letter several examples of how we are achieving this important outcome.

For the first ten existing chemicals undergoing risk evaluation under section 6 of TSCA, EPA is considering both workers directly involved with the chemicals and occupational non-users – that is, workers who do not directly handle the chemical but who perform work in an area where the

chemical is used. When conducting assessments for workers and occupational non-users, EPA is considering data, when available, from federal partners such as the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH). In the problem formulation documents EPA issued on the first ten chemicals, worker exposure is an important consideration for many of the chemicals. Hence, every problem formulation document includes an occupational exposure section that describes the worker activities, exposure pathways, and routes of exposure that EPA intends to assess, which is specific for each chemical.

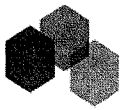
As EPA evaluates new chemicals under section 5 of TSCA before they enter the market, we explicitly consider exposures and potential risks to workers. In new chemical assessments, we consider the intended conditions of use to be the circumstances around manufacture, processing, distribution in commerce, use, or disposal as stated by the submitter in the original or amended submission. EPA also considers reasonably foreseen conditions of use identified by the Agency in its expert evaluation. EPA's identification of conditions of use includes the expectation of compliance with federal and state laws, such as worker protection standards or disposal restrictions, unless case-specific facts indicate otherwise. For example – both prior to and since the recent amendments of TSCA – EPA's review considers engineering controls and use of personal protective equipment (PPE) in the workplace as described in the submitter's premanufacture notice (PMN). EPA also developed a predictive tool, ChemSTEER (Chemical Screening Tool for Exposures and Environmental Releases), specifically to estimate occupational exposures to a new chemical substance, which is publicly available on the EPA website (https://www.epa.gov/tsca-screening-tools/chemsteer-chemical-screening-tool-exposures-and-environmental-releases).

In addition to the significant opportunities presented in the Act to protect workers, it is important to note that our office also has responsibility for pesticide review and registration. Just last week, President Trump signed into law the *Pesticide Registration Improvement Extension Act of 2018 (PRIA 4)*. PRIA 4's passage was supported by farmers and ranchers, environmental justice and worker protection organizations, and a broad array of manufacturers, many of which participated in a PRIA Coalition – including the United Farm Workers. PRIA 4 provides important additional resources to EPA to help ensure that training and educational materials are available to help workers protect themselves from pesticide exposures.

Across its chemicals-related programs, EPA is committed to evaluating chemicals to determine whether they present risks to workers and if they do, to address those risks. We appreciate the support and interest of the Subcommittee and welcome the opportunity to have further dialogue with you on this important issue.

Sincerely,

Alexandra Dapolito Dunn
Assistant Administrator



TSCA
NEW CHEMICALS
COALITION

Via E-mail

Chairman Paul D. Tonko
Ranking Member John Shimkus
U.S. House of Representatives
House Committee on Energy and Commerce
Subcommittee on Environment and Climate Change
2125 Rayburn House Office Building
Washington, D.C. 20515

Re: Hearing on "Mismanaging Chemical Risks: EPA's Failure to Protect Workers"

Dear Chairman Tonko and Ranking Member Shimkus:

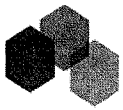
The Toxic Substances Control Act (TSCA) New Chemicals Coalition (NCC) submits this letter in anticipation of the March 13, 2019, hearing on the U.S. Environmental Protection Agency (EPA) role in protecting workers from chemical risks, as announced by the U.S. House Committee on Energy and Commerce's Subcommittee on Environment and Climate Change. The TSCA NCC is a group of representatives from over 20 companies that have come together to identify new chemical notification issues under amended TSCA and to work collaboratively with EPA and other stakeholders to address them. We thank you for the opportunity to make its members aware of some of the issues and concerns we have encountered under the revised TSCA Section 5 notification and review process.

TSCA NCC members have met with EPA and congressional staff on several occasions. Coalition members have also participated in public fora organized by EPA to discuss these and other aspects of the new chemical review process, and to express the Coalition's willingness to continue working with EPA to strengthen the Section 5 program and improve its timely completion of scientifically and legally supportable determinations and regulatory actions.

OSHA Regulates Workplace Safety

TSCA NCC members have worked with EPA to address many issues with the new Section 5 process. We note two key issues here. One key area of concern to TSCA NCC member companies, and a focus of this hearing, involves worker protection issues related to TSCA new chemicals. The Coalition recognizes that workers are included among the subpopulations specified in the definition of "potentially exposed or susceptible subpopulation" in amended TSCA[1] and that Section 5(f)(5) requires that EPA "shall consult" with the U.S. Occupational Safety and Health Administration (OSHA) prior to prohibiting or restricting a new

[1] TSCA Section 3(12).

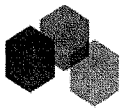


chemical. It is TSCA NCC's view that EPA's approach to assessing and managing new chemicals under Section 5 must be done in a way that adequately recognizes the significance and effect of OSHA's statutory authorities and regulations, its guidance and enforcement mechanisms, and its overarching regulatory scheme in the workplace. We believe this is entirely consistent with the purposes of Section 5(f)(5). As discussed in detail in a letter and position statement provided by TSCA NCC to EPA which we append for your convenience, EPA's approach to new chemicals under TSCA must be implemented in a way that recognizes key OSHA statutory authorities, regulatory requirements, and enforcement mechanisms, including:

- OSHA's detailed regulation for use of Personal Protective Equipment (PPE) when needed to further limit exposure beyond that afforded by OSHA's preferred approach of engineering and process controls. Relevant to the situation with new chemicals, the OSHA regulatory standard requires use of gloves that are impervious to the substance under the conditions of use, eye protection, and respiratory protection for employees where such protection is otherwise necessary to protect employee health.

- The General Duty clause of the Occupational Safety and Health Act (OSH Act) that, among other provisions, requires every employer to furnish to each of its employees a workplace free from recognized hazards that cause, or are likely to cause, death or serious physical harm. The "likely to cause" aspect of the General Duty requirement is particularly relevant to new chemicals, given the limited information that is often available.

EPA has an obligation to review and make Section 5(a)(3) determinations that include consideration of worker exposure issues and, when required, to regulate new chemicals under TSCA Section 5(e) "to the extent necessary to protect against an unreasonable risk." TSCA NCC believes that in taking such regulatory actions, EPA must evaluate the adequacy of the existing OSHA statutory and regulatory elements and adopt additional restrictions or prohibitions only when needed to protect against unreasonable risks not otherwise addressed by OSHA. Accordingly, TSCA NCC believes that the proper role for EPA should be to provide written hazard identification and risk assessment information to the new chemical notifier and to OSHA to make these parties fully aware of EPA's assessment and its identified occupational concerns and precautions, if any. Once informed of EPA's assessment, the notifier/employer will be aware of and be known by OSHA to have in its possession information that must be considered in the context of engineering and process controls and in selecting respiratory protection and other PPE needed to comply with OSHA's broadly applicable regulations and with the General Duty clause requirement that employers provide a safe working environment.



TSCA NCC was challenged by EPA's Office of Pollution Prevention and Toxics (OPPT) management to demonstrate that appropriate PPE are routinely used in the workplace. TSCA NCC research found a database of violations issued by OSHA dating back to the 1970s. The database included 12 million records of OSHA violations. Less than one percent of violations related to lack of eye protection, lack of general dermal protection, and lack of glove use (or inappropriate glove use), despite the fact that these violations are relatively easy to observe.

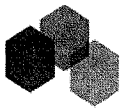
Once appropriately informed of EPA's concerns, any downstream employer having a commercial relationship to the premanufacture notification (PMN) notifier must be made aware of and must consider the full hazard assessment (including hazards identified by EPA) and respond appropriately to meet the obligation to protect workers and provide for a safe workplace. The fact that OSHA has also been informed of EPA's concerns puts to rest any questions about the level of information and the hazard, exposure, and risk assessments that the notifier and affiliated employers have access to, and establishes a factual written record that can be considered during any OSHA inspections or enforcement actions. For these reasons, TSCA NCC believes that for many, if not most, new chemicals for which EPA has identified workplace concerns, once EPA has informed OSHA and the notifier of its occupational risk assessment and the notifier has made conforming revisions to the Safety Data Sheet, unreasonable risk to workers is, accordingly, "not likely" and not "reasonably foreseeable."

By acknowledging the efficacy of worker protection measures under OSHA, EPA ensures worker safety, does not add unnecessarily to its own workload, and reduces the "new chemical bias" in which new chemicals often face regulatory burdens that do not apply to existing, incumbent substances.

U.S. Innovation Hindered by Delays and Uncertainty That Still Exist in New Chemicals Program

This point is important to TSCA NCC's second major concern, which is the significant delays in the Section 5 review process. Protracted delays are adversely impacting the commercialization of new chemicals developed by TSCA NCC companies that, in most cases, are safer and greener alternatives to existing chemicals on the market. According to the information posted by EPA,[2] as of February 26, 2019, over 43 percent of the over 1200 valid

[2] EPA, *Statistics for the New Chemicals Review Program under TSCA*, available at https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/statistics-new-chemicals-review#stats. For this analysis, "Total PMNs" (the sum of PMNs completed and PMNs under review) is distinguished from "Total Cases" stated on the website as "Total Cases" includes exemption notices.



TSCA
NEW CHEMICALS
COALITION

PMNs reviewed under amended TSCA still await a final determination and for EPA to take any necessary actions (*e.g.*, issuing a consent order under Section 5(e)). Completion of this step by EPA is required before the notifier can legally commence manufacture and commercialization of the new chemical.[3] In addition, it is unknown how many of the 226 cases withdrawn were a result of submitters "giving up" on the process due to the delays encountered, but is reasonable to assume that many were.

The delays encountered by TSCA NCC members ranged from many months to years beyond the initial 90-day review period. Some difficulty was to be expected in implementing amended Section 5 with its surprisingly extensive changes (certainly compared to those in the bill passed by the House (H.R. 2576, 114th Congress, June 23, 2015) that did not amend Section 5 at all). Other delays have resulted from EPA decisions (including "resetting" the 90-day clock on all cases that were pending on June 22, 2016) -- a decision that does not seem to be permitted in the statute. The delays experienced by TSCA NCC members, however, have proved hugely disruptive to the development and commercialization of new chemicals that were designed and developed in many cases as safer and greener alternatives to the currently used existing chemicals. While EPA has taken steps to improve its completion rates, the scale of this backlog of unfinished new chemical reviews is of great concern to TSCA NCC members. Even now that OPPT has largely settled on a set of policies that permit more consistent and timely decisions, the underlying risk assessments are often flawed because information that was included in a PMN was ignored or because of outright errors in EPA's assessments. TSCA NCC and its member companies have brought such issues and concerns directly to EPA. Reworking such assessments only adds to EPA's workload and to the backlog of and the delays seen in case reviews.

TSCA NCC companies are committed to doing business in the U.S. in ways that foster economic health and deliver environmental benefits to society. As a consequence of increasing concerns due to the delays and difficulties encountered in introducing new chemicals in the U.S., however, some TSCA NCC member companies have decided to introduce and commercialize the technologic and other benefits of new chemicals elsewhere in the world. This situation, relating to one company, was outlined in the recent report by the Government Accountability Office (GAO) on TSCA implementation, among other topics.[4] It is important to

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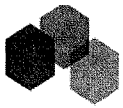
[3] TSCA Section 5(a)(4).

[4] GAO, Chemical Assessments: Status of EPA's Efforts to Produce Assessments and Implement the Toxic Substances Control Act, at page 38 (March 4, 2019), available at https://www.gao.gov/products/GAO-19-270?utm_campaign=usgao_email&utm_content=topic_naturalresources&utm_medium=email&utm_source=govdelivery.



note that the circumstance in the GAO report involved a company opting to commercialize in the European Union, which requires a substantial investment for dossier preparation; the company did not look to commercialize in a country that had more relaxed standards than the U.S.

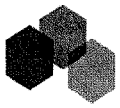
To be clear, the issue of delays in EPA's review process in many cases is directly related to worker protection from chemicals. Today's new chemical innovators are focused on finding safer, greener replacement chemicals. While new chemicals may not be risk-free (nor does the law require them to be), they could be relatively or even significantly safer/less risky than the incumbent, existing chemicals to which workers are exposed, but this factor seems to be getting short shrift in EPA's reviews.

We appreciate this opportunity to share our views with this Subcommittee. If you have any questions, please let me know.

Respectfully submitted,

Kathleen M. Roberts

Attachment



TSCA
NEW CHEMICALS
COALITION

December 1, 2017

Via E-Mail

Jeffery Morris, Ph.D.
Director, Office of Pollution Prevention and Toxics
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
1300 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Dear Jeff:

This letter is submitted on behalf of the Toxic Substances Control Act (TSCA) New Chemicals Coalition (NCC), a group of representatives from over 20 companies that have come together to identify new chemical notification issues under the amended Toxic Substances Control Act (TSCA) and to work collaboratively with you and your team to address them. Thank you for the opportunity to meet on November 16; we appreciate the discussion that we had.

One of the topics that we raised concerned the mandated consultation process with the U.S. Occupational Safety and Health Administration (OSHA) at TSCA Section 5(f)(5), and the significance of restrictions included in the Safety Data Sheets (SDS) on new chemicals. As we discussed, the TSCA NCC believes that the U.S. Environmental Protection Agency (EPA) needs to implement an appropriately robust and ongoing consultation process with OSHA "prior to adopting any prohibition or other restriction" per TSCA Section 5(f)(5) that addresses occupational exposure issues. We believe that such a procedure is needed to ensure that EPA's adoption of restrictions fully considers and avoids conflicts with OSHA's established regulatory programs in addressing and mitigating worker exposure risks to new chemical substances, a result Congress seemed to intend in amending TSCA.

Picking up on a point raised in our meeting, we note for your information that EPA's *Instruction Manual for Reporting under the TSCA § 5 New Chemicals Program*,[1] requires that the notification include, among others:

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[1] Available at https://www.epa.gov/sites/production/files/2015-06/documents/instruction_manual_2015_5-26-2015.pdf.

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- A description of each specific worker activity during which workers may be exposed to the new chemical substance. Activities must be described even if workers wear protective equipment. The SDSs indicating recommended protective equipment should be submitted as part of Hazard Information in Part I, Section C, subsection 3 of the notice form.
- Information on the specific types of protective equipment and engineering controls that will be employed to protect the worker from potential exposure to the new chemical substance (*i.e.*, type of gloves, type of goggles, National Institute for Occupational Safety and Health (NIOSH)-certified 21c respirator, NIOSH-certified 19c respirator, closed containment system, nitrogen blanket, and related measures).
- Information on the physical form of the new chemical, the maximum number of workers exposed, and the maximum duration of exposure in hours/day and days/year.

The information elements noted above are not developed strictly for EPA review purposes. These information elements are required under OSHA which, as further articulated in the attached paper, has broad authority to regulate workplace exposures. Based on these reporting requirements for new chemical reviews, EPA staff will have access to available understanding concerning occupational exposures to the new chemical and the engineering controls or personal protective equipment (PPE) that the notifier believes is needed to protect workers, and on which the notifier will be regulated under OSHA.

As discussed in more depth in the attached paper, the TSCA NCC does not believe that EPA's approach under TSCA adequately appreciates and recognizes the significance and effect of OSHA's statutory authorities and extensive regulatory scheme, as well as its enforcement mechanisms, governing workplace chemical exposures, including to new chemicals. These include:

- OSHA's detailed regulations for use of PPE when needed to further limit exposures beyond that afforded by OSHA's preferred approach of engineering and process controls. The regulatory standard, for example, requires use of respiratory protection to protect employees from exposure to air contaminants

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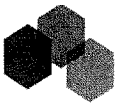

above an exposure limit, or where such protection is otherwise necessary to protect employee health. The standard places a range of OSHA enforced responsibilities on employers, requiring that a written program of respiratory protection must be in place including procedures for respirator selection, use, fit, testing, and so forth, training in use and hazards, and medical evaluations of employees who use such PPE.

- The General Duty clause of the Occupational Safety and Health (OSH) Act that, among other provisions, requires every employer to furnish to each of its employees a workplace free from recognized hazards that cause, or are likely to cause, death or serious physical harm. The "likely to cause" aspect of the General Duty requirement is, as you recognize, particularly relevant to new chemicals given the limited information that is often available.

We believe that Congress did not intend to alter the scope of the effect of these OSHA requirements in amending TSCA. It, however, recognized the issue of overlapping authority concerning workplace regulation of new chemicals. For this reason, while additional authority was provided to EPA in making determinations and taking required actions, Congress included the OSHA consultation provision at Section 5(f)(5) to ensure that EPA's regulation of new chemicals did not create or result in conflicts with requirements implemented by OSHA.

Although EPA has an obligation to review and make determinations regarding worker exposure issues and to formulate and adopt TSCA Section 5(e) actions that include measures to protect workers, this duty applies "to the extent necessary to protect against an unreasonable risk." When this duty is juxtaposed with the mandatory consultation requirement, it is clear that EPA is required to evaluate the adequacy of the existing OSHA regulatory scheme and to adopt additional restrictions or prohibitions only when needed to protect against unreasonable risks not otherwise addressed.

Accordingly, the proper role for EPA should be to provide hazard identification and risk assessment information to the new chemical notifier and to OSHA to make these parties fully aware of EPA's assessment and its identified occupational concerns, if any. Once informed of EPA's assessment, the employer will be known to have information that must be considered in selecting respiratory protection and other PPE needed to comply with OSHA's broadly applicable regulations and with the General Duty clause requirement that employers provide a safe working environment. By the same token, once OSHA has been informed of EPA's

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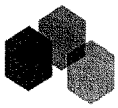

assessment, it will be in a position to enforce its regulations and to ensure that the General Duty clause requirements are being satisfied.

For these reasons, and others elaborated in the attachment, the TSCA NCC believes that EPA should disfavor issuing TSCA Section 5(e) orders that mandate use of particular PPE or other workplace-specific measures to mitigate occupational exposure. Instead, the TSCA NCC recommends the following approach if EPA identifies a workplace-specific risk concern:

1. EPA should consult with OSHA on the workplace risk concern.

2. EPA should inform the notifier of its assessment and concerns.

3. After the OSHA consultation and notifier communications are completed, EPA should no longer engage but instead rely on the employer's responsibilities mandated by OSHA, as well as OSHA's established expertise and robust existing regulatory program, to ensure worker protection.

Failure to follow a procedure as outlined above risks creating disputes over whether EPA's action preempted or created conflicts with OSHA's general authority and its regulations.

The TSCA NCC recognizes that the approach being advocated is at odds with EPA's longstanding practice in assessing and regulating new chemicals. Nonetheless, for the reasons provided above and elaborated in the attachment, TSCA NCC believes that EPA's prior and current approach is mistaken in that it does not give due recognition to OSHA's authorities and regulations and their role in ensuring a workplace free from recognized or potential occupational hazards. We believe that a modification in EPA's approach is necessary, given the changes in amended TSCA, including the OSHA consultation requirement. While EPA may have believed that, whenever an OSHA Permissible Exposure Limit (PEL) (or similar enforceable limit) is not in place, there is no enforceable requirement for companies to protect their workers from new chemical exposures, this belief is mistaken; and, as explained in this communication, does not have a basis in law or policy. Quite to the contrary, once EPA has informed the notifier and OSHA of its hazard and risk assessments, it has had the effect of triggering and setting in motion the existing regulatory requirements on employers to protect workers from recognized or likely occupational harms. Thus, any belief by EPA that, in the

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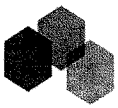

absence of a TSCA Section 5(e) or Significant New Use Rule (SNUR) requirement to protect workers, it cannot ensure the presence of an enforceable regime of workplace protections is in fact a mistaken and erroneous belief.

Put another way, EPA's current practice under amended TSCA to equate any potential health hazard to represent an unreasonable and unmanaged risk to potentially exposed workers represents a misreading of the broadly applicable and pervasive regime that is implemented and enforced based on the OSH Act and OSHA's regulations and policies. On the contrary, once appropriately informed of EPA's concerns, any employer having a commercial relationship to the notifier must be made aware of and must consider EPA's assessment conclusions and respond appropriately to meet their obligation to protect workers and provide for a safe workplace. Furthermore, the fact that OSHA has also been informed of EPA's concerns puts to rest any questions about the level of information and the hazard, exposure, and risk assessments that the notifier and affiliated employers have access to, and establishes a factual written record that can be considered during any OSHA inspections or enforcement actions.

The TSCA NCC believes that for many, if not most, new chemicals for which EPA has proposed workplace restrictions under new TSCA, once EPA has informed OSHA and the notifier of its occupational risk assessment, that will be sufficient to ensure adequate workplace protection and to make any unreasonable risk to workers "not likely." Having made such a determination regarding occupational risks, EPA should proceed to meet its obligations to assess and determine other exposure risks, such as to the environment and general population, and to take the steps required depending on the final determination. Such a change in EPA's approach would avoid the issues associated with overlapping authority and imposing duplicative, if not conflicting, requirements for workplace exposures while also allowing EPA to focus its regulatory resources on other potential risks that are not subject to the overarching and comprehensive requirements that otherwise apply in the workplace.

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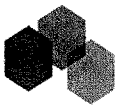

TSCA
NEW CHEMICALS
COALITION

We hope you find these comments helpful. We would be pleased to discuss them with you and your staff in more detail prior to the **December 6, 2017**, public workshop if that is of interest.

Sincerely,

Kathleen M. Roberts

Attachment
cc: Nancy B. Beck, Ph.D., DABT (w/attachment) (via e-mail)
Kevin W. McLean, Esquire (w/attachment) (via e-mail)
Brian P. Grant, Esquire (w/attachment) (via e-mail)

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U.S. House Energy & Commerce Committee
Environment & Climate Change Subcommittee
2322 Rayburn House Office Building
Attn: Committee Contacts Jackie Cohen & Adam Fischer

March 13, 2019

via email

Hearing on Mismanaging Chemical Risks: EPA's Failure to Protect Workers

Dear subcommittee members;

Thank you for looking into this matter of EPA's systemic mismanagement of chemical risks to workers. I am submitting for the record related worker health impacts from dispersant use in oil spill response, especially as it pertains to EPA's failure to maintain an updated, science-based National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

My name is Dr. Riki Ott and I have personally witnessed the tragic human health consequences of our shamefully outdated oil spill response activities on first responders and the general public in our nation's largest oil disasters: the *Exxon Valdez* oil spill (EVOS) in Prince William Sound, Alaska, in 1989 and the 2010 BP Deepwater Horizon (BP DWH) disaster in the Gulf of Mexico. I have testified before congressional committees multiple times following the EVOS disaster, authored two books about the health consequences to humans and marine life, and been one of the driving forces to update the NCP for the past quarter century.

My remarks will be brief, as I will incorporate by reference key testimony from past efforts to protect oil spill response workers and hold EPA accountable to its legally-mandated duty to update the NCP in a time fashion, consistent with best available science.

Chronology of Evidence of Harm to Oil Spill Responders

1989–2004

> *"I thought I had the Valdez Crud in 1989. I didn't think I'd have it for 13 years."*
> ~ Participant in 2001 health survey of *Exxon Valdez* oil spill workers conducted by Alaska Community Action on Toxics & Alaska Forum for Environmental Responsibility

In my book, *Sound Truth and Corporate Myths*, I used Exxon's own data and medical records (obtained before court records were sealed until 2024) and Alaska Dept. of Labor Occupational Injury and Illness data on *Exxon Valdez* workers to document short- and long-term human health effects of this disaster, along with two independent health surveys conducted 13 years after the event. I estimated about one-third of the workforce or between 2,000 to 3,500 workers likely suffered debilitating, chronic work-related chemical illnesses. These illnesses should have been preventable with proper training to recognize risks, prompt accurate diagnose and treatment, adequate Personal Protective

Gear for the risks encountered – all of which should be elements of a Worker Safety Program and training, authorized under the National Contingency Plan.

2002–
The weight-of-evidence amassed in *Sound Truth* subsequently triggered longitudinal studies on human health effects from the 2002 *Prestige* oil spill in Spain and from the 2007 *Hebei Spirit* oil spill in South Korea. These studies on oil spill response workers, including volunteers and children, and the affected populace, including mothers and their children, are an impressive collection of peer-reviewed papers that document long-term, generational harms on humans from oil exposure.

2010–

> *"**Learn to Recognize the Symptoms of Toxic Poisoning**: Be prepared to seek medical assistance if you have any of the following symptoms: difficulty breathing; irritation of the eyes, skin, throat, or respiratory tract; changes in skin color; headache or blurred vision; dizziness, clumsiness or lack of coordination; cramps or diarrhea."* ~ Air Force Emergency Management, **2006** pocket guide for oil and hazardous substance disasters

I spent one year in Gulf Coast communities following the 2010 BP DWH oil disaster to coach local residents what to expect to inform their actions, based on what I had learned from the *Exxon Valdez* oil spill 21 years earlier. I returned for up to 4 months per year through 2017 to document human health effects and to increase scientific understanding of chemical illnesses to inform action. My efforts contributed to the inclusion of a number of work-related chemical illnesses being listed as compensable in the 2012 BP medical benefits class action settlement agreement (Table 8); this was the first time such illnesses were recognized and listed.

There really was no excuse for the still-ongoing human health tragedy in the wake of this disaster. Responders were not informed of the known risk of chemical exposure, the known symptoms of overexposure, the known diagnosis and treatments, and were not given Personal Protective Equipment commensurate with the risk. Instead, workers were consistently warned by BP trainers not to wear respirators or their jobs would be terminated.

Unprecedented aerial spraying and subsurface release of toxic Corexit dispersants over 2–3 months – use far beyond what was envisioned in the NCP, exacerbated the human tragedy by facilitating movement of oil across membranes and into bodies of humans and marine life. Three major, ongoing chronological studies on BP responders and/or coastal residents reported short- and long-term work-related chemical-illnesses; among these is in the Coast Guard cohort study. Once again, these illnesses should have been preventable with proper training to recognize risks, prompt accurate diagnose and treatment, adequate Personal Protective Equipment for the risks encountered, and strict controls on amount, duration, and use of toxic chemical dispersants.

Why are oil spill response workers put in harm's way? Why are known toxic chemicals that do more harm than good allowed to this day in oil spill response? Among the many reasons is EPA's failure to update the nation's emergency oil spill response plan in a timely and science-based fashion.

Chronology of evidence of EPA's chronic failure to update the NCP

In **1994**, the NCP was amended through an EPA rulemaking process to implement the Oil Pollution Act of 1990, the amended CWA, and Executive Order 12777. Specifically, EPA made Area Committees responsible for developing Area Contingency Plans (ACPs), including preauthorization plans for expedited decisions regarding use of products, namely dispersants. 40 CFR §300.105 Subpart B.

In **1995**, through Delegation No. 2-91 (Sept. 29, 1995), EPA "initially designated thirteen geographic areas already covered by Regional Response Teams and the Regional Response Teams as the initial Area Committees, thus circumventing the purpose of OPA90 to mandate local participation in developing local (area) oil spill prevention and response plans. In so-doing, EPA manufactured a need to create a fourth level of spill response organization to develop "sub-area" or "geographic" plans for local areas. However, this fourth level conveniently has no formal authority and is not part of the organizational structure of the NCP. So, EPA's creation actually disempowers and disengages local citizens from the planning process and allows state-level planners to usurp the authority, granted by statute, to local agencies and citizens.

Fast forward to the BP DWH disaster in **2010**.

In **2011**, U.S. EPA Office of the Inspector General issued its report "*Revisions Needed to National Contingency Plan Based on [BP] Deepwater Horizon Oil Spill*" (Report No. 11-P-0534). This in part revitalized the NCP rulemaking process that had languished since 2001.

In **2013**, EPA/OIG wrote a review of EPA's contingency planning efforts, entitled, "EPA could improve contingency planning for oil and hazardous substance response." In it, EPA/OIG criticized EPA for having created an additional level of planning beyond that required by OPA90: "EPA's contingency planning structure has exceeded the three levels of plans established by the OPA and outlined by the NCP." [1]

EPA/OIG notes that this fourth level creates confusion and, by effectively eliminating the Area Committees and their local knowledge, the Regional Contingency Plans fall short – leading like cascading dominos to a National C-Plan that is woefully inadequate to protect

[1] U.S. EPA, Office of the Inspector General, 2013, *EPA Could Improve Contingency Planning for Oil and Hazardous Substance Response*, Report No. 13-P-0152, Feb. 15, 2013. http://www.epa.gov/oig/reports/2013/20130215-13-P-0152.pdf

first responders, the public, and the environment. Local people (generally) understand the risks and want more protective measures and much less use of dispersants. EPA directly eliminated this voice and evaded statutory directives in creating this fourth level of planning.

In **2015**, EPA finally opened a rulemaking on Subpart J of the NCP, the part that deals with use of dispersants and other products during oil spill response. Over 600 unique comments were recorded, possibly a record in the NCP rulemaking history, and the local voices wanted more protection and less toxic chemicals. Unfortunately, the rulemaking was not finalized before the change in administrations.

Still in **2019**, this rulemaking remains in limbo, thus preserving outdated, dangerous regulations and essentially guaranteeing that oil spill workers and the public will be sickened en masse during the next major oil disaster.

Will you let this occur on your watch?

In sum, EPA has not kept oil spill disaster prevention and response planning current with either its statutory mandate or the emerging risks to people and the environment from conventional oil, unconventional oil and gas, and toxic chemical dispersants used in oil spill response. Planners who fail to account for the true hazardous nature of oil and dispersants will not adequately prepare to minimize harm from oil; they will fail to protect workers, public health and welfare, and the environment during spill response – as is currently the case.

I incorporate by reference ALERT's public comments on the 2015 EPA rulemaking and my 2018 testimony and photo insert for the Canadian hearing OH-001-2014 that summarize the findings of the ongoing human health impacts from the BP DWH disaster.

If I can be of any further assistance in this matter, please contact me.

Sincerely,

Riki Ott, PhD
Washington State
www.alertproject.org

Enclosures
– 2015 comments on EPA rulemaking
– 2018 testimony on human health effects of oil spills
– 2018 testimony photo insert

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Opinion

Letter: Attacks on science are a threat our water

Posted Mar 12, 2019 at 12:01 AM

A systematic pattern of undermining science occurring at the federal level is playing out in our community, impacting local constituents' health and safety, the quality of our drinking water, the quality of our lakes and the estuaries where we have seen red blooms as well as green algae epidemics.

There is a critical need for oversight of science in key federal agencies. Sidelining science, EPA leaders continuing to stack science advisory groups, hollowing out agency positions for monitoring and enforcement, rolling back pesticide regulations and stifling the ability of scientists to communicate are having very real negative impacts here in Polk County.

Vulnerable communities who face disproportionate burdens of health and environmental injustices are becoming even more unsafe as already insufficient protections are rolled back. This was evident by the study conducted on Landia.

The attacks on science, and accountability of agencies serving the public, are a bipartisan issue, affecting everyone. The agencies need to ensure the rules are implemented that protect our community's health from toxic pesticides in our water.

Rep. Darren Soto, a champion of environmental issues, should hold EPA Administrator Andrew Wheeler accountable to protecting our community's precious waters.

Deepthi K. Weerasinghe Ph.D., Winter Haven

Tampa Bay Times

FLORIDA POLITICS / THE BUZZ

Florida officials delayed telling residents about tainted water, emails show
It took about four months for state health officials to notify Ocala residents about potentially elevated levels of the chemicals, emails obtained by the Times/Herald show.

Tim and Linda Lawson stand by the well outside their Ocala home. The Lawsons, who have lived there for 33 years, were told in November that the well is contaminated with elevated levels of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), which early tests have suggested can be carcinogens. [SAMANTHA J. GROSS Times/Herald]

By **Samantha J. Gross and Elizabeth Koh**
Published Jan. 3, 2019
Updated Jan. 3, 2019

OCALA — Linda Lawson thought little of drinking the water from the decades-old well in her backyard, less than half a mile down the road from the Florida State Fire College in Ocala. That changed when her daughter-in-law answered to state workers knocking on her door oneafternoon. They came to test the water, a worker said.

She only began to worry when Mark Lander, the head of the Marion County Department of Health, came by at 8:30 one evening in early November with word that she shouldn't drink from the well anymore. The unlit dirt path to her Central Florida home almost never received visitors, especially at night, and her husband Tim even pulled out his gun with concern that Lander might be an escaped inmate from a nearby prison.

Lander, who declined to comment for this story, delivered a letter that night informing Lawson's family that chemical levels in their well water were higher than deemed safe. He gave them a couple cases of water and told them to drink only bottled for the foreseeable future before he disappeared back into the night.

In August, the Department of Environmental Protection confirmed that flame retardants containing perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) had been used at the Fire College in the past. In early September, the college was told to only drink bottled water.

Lawson's home was one of three well sites — a Marion County fire station and Texas-based mining company Lhoist North America were the others — where preliminary tests indicated the water had elevated levels of the chemicals, which early studies have suggested can be carcinogens. Other impacts in humans include high cholesterol, thyroid disorders, adverse reproductive and developmental effects and some types of cancer.

It took about four months for state health officials to notify Lawson and others in the community about potentially elevated levels of the chemicals, emails obtained by the Times/Herald show. In September state health officials began discussing means of informing the Fire College, but it wasn't until late October that they discussed notifying the rest of the nearby community. While state health officials debated for months how to word messages to those affected and put off informational open houses because of Hurricane Michael, neighbors bickered with local health officials asking when their water would be tested. Some preemptively began buying cases of water each week, fearing their own wells might be contaminated.

Recently, six former employees of the Fire College joined a class-action lawsuit against flame retardant manufacturers, alleging their exposure to toxic chemicals caused serious medical conditions including thyroid disease, breast cancer and kidney cancer — the same chemicals found in Lawson's drinking water.

Les Beitsch, a former deputy secretary in the Florida Department of Health, speculates that health officials delayed notifying Lawson and the two other well users because of the impending election. He was effectively fired in November, he said, because he pushed back against the idea of any delay in notifying well-water users of the problem.

Gov. Rick Scott's office rejected the suggestion that political considerations played any role in the notification timeline and directed reporters to the Department of Health comment Through a

spokesman, the Department of Health said it "immediately notified well owners of results" and have "worked diligently to obtain the necessary permissions to conduct additional private well sampling."

"Any assertion that this was not done as quickly as possible is false and irresponsible," said Nick Van der Linden, the department spokesman.

The department notified residents on Nov. 5 — two months after the Fire College started using bottled water and three days after tests results showed contamination in their wells.

Water contamination near the Fire College was made known to officials in early September after results came back from testing done by the state's Department of Environmental Protection. Of the 80 to 90 wells in a mile radius around the college, 16 wells were initially tested. According to emails obtained by the Times/Herald, levels of chemicals in the water at the college were found to be between 250 and 270 parts per trillion, more than three times higher than the advisable 70 parts per trillion for drinking water.

- On Sept. 9, the Fire College was given supplies of bottled water from the Department of Environmental Protection. On Sept. 12, the Fire College stopped using well water to prepare food in its cafeteria. During busy times of the year, about 50 students and 30 staff use the water on campus.

- On Oct. 2nd and 3rd, the DOH collected samples from 16 nearby wells, including the Lowell Correctional Institution (a women's prison), a convenience store/gas station, the mining company and seven residences.

- An Oct. 16 open house was scheduled to allow members of the public and the Fire College community to ask questions and get information about what was happening in their water supply. The open house was rescheduled due to limited time and resources after Hurricane Michael. It eventually happened on Dec. 4 — three months after the Fire College started using bottled water.

- On Nov. 2, the Department of Health got results back from the tests in early October and found four wells, including the Fire College, that showed elevated PFOS and PFOA levels.

- On Nov. 5 —two months after the Fire College started using bottled water and three days after test results showed far higher levels of contamination in their wells — letters were sent to notify Lawson and the fire station. On Nov. 6, Election Day, the mining business was notified. The Department of Environmental Protection installed filters for their wells and is providing regular supply of bottled water for drinking, cooking, bathing and other household activities.

Those letters were supposed to be sent on Nov. 13, Beitsch said, but pushback from him and some of his colleagues spurred the Nov. 5 delivery.

All Lawson could gather from the two-page letter was that the Fire College might be connected to the water problem.

"We've known the Fire College was there. It's been there forever," she said. "I knew they did testing back there — fire drills and stuff like that — but I assumed they did water or whatever. I didn't even know they use a foam."

The flame retardant that contained the perfluorooctane sulfonate and perfluorooctanoic acid particles came in the form of a foam mean to cool the fire and to coat the fuel, preventing its contact with oxygen.

Other residents in the area say that — despite requirements that additional wells be tested — they did not hear for far longer if their wells had been tested or if the same chemicals had been found in their water.

In 2002, the primary U.S. manufacturer of PFOS voluntarily phased it out of production because it was aware of the looming chemical exposure and health effects on the public. In 2006, eight major companies in the PFAS industry voluntarily agreed to phase out production for the same reason. But the chemicals are made up of compounds that don't biodegrade, which allows them to remain in air, soil and groundwater for decades.

Though the health department began bringing Lawson's family five-gallon jugs of water after the letter was delivered, their well water — which tested for levels of PFAS and PFOA at 932 parts per trillion — is still being used for showering and washing dishes. In addition to Lawson, her husband, and their sons' families — eight people in total — they have used the bottled water for their five dogs: Jasper, Harley, Tennessee, Bama and Giz. Their aging horse, Cody, still drinks from the well.

Lawson hasn't noticed any health effects, she said, but she worries about how it might affect her or the children. "Ten years down the line, after we've drank all this water and tea and stuff, what's going to happen?"

When the mining operation received the notice, it stopped using the well water for drinking and notified employees, according to a written statement from the company. The test levels were 12,000 parts per trillion, about 170 times the advisable level.

According to Health Department emails obtained by the Times/Herald through a public records request, the mine's safety manager, Stephen Henrick, requested his home in Ocala be tested shortly after. He declined to comment.

A spokesman for the fire station in Ocala declined to comment as well.

Lawson said she still keeps the letter with her at work, where she weighs trucks for a local limerock company as a scale house operator.

A few more nearby wells were tested on Nov. 8 — a horse breeder, North Marion Count Middle School and a carrier company.

On Nov. 28, more workers from the state came to install a filter on Lawson's well, though they were instructed to keep drinking bottled water for at least the next two months until more tests were conducted.

After Lawson heard from the state, she told some other residents. She also told one of her best friends, Miriam Flores, who lives just a few hundred yards from Lawson in a mobile home with her family.

At first, Flores said, she thought she would also hear from the state soon. But as days passed, Flores grew more and more worried. She warned two tenants in another mobile home on her property about the problem and advised them to buy bottled water. She began to call the Marion and Alachua County health departments, who both told her that they thought the issue was "nothing," she recalled.

"I don't think they care. They don't want nobody knowing anything, and it's scary," she said at the time.

After the Times/Herald began inquiring about the testing, officials finally came to test Flores' water Dec. 11 — a month after Lawson was first visited by health officials checking her well, and about three months after the department first learned of the problems in the groundwater surrounding the Fire College.

At Christmas, Flores and her family continued sipping from bottles of Zephyrhills water they had bought by the case: $5 each, two or three a week. Without answers, she increasingly worried about the water from the well her family has consumed for years, or even touching what comes out of the pipes.

She stopped letting her 5-year-old son, Fernando, brush his teeth with it. She even started washing the vegetables with bottled water. "Doesn't it go into your body, into your pores?"

On Dec. 28, an environmental administrator with the Marion County Department of Health finally gave her an answer, she said. Her water did test for levels higher than those at the Fire College more than 20 times the acceptable level for drinking water.

Her options now are limited, she says. Health officials dropped off two cases of water but gave her no specifics on when they might install a filter on her well or if she might potentially have to pay an additional $30 to $40 a month to tap into the city's main water line instead.

Flores also can't just leave the three acres of property she's lived on for four years. Because of the elevated levels of chemicals, she worries the land is worth far less than what she paid for it.

"My property's value just went to crap," she said after she found out about the test results. "Not even the animals are supposed to drink it."

According to scripts sent to health department employees, when residents ask about using alternative water until the test results come back, the employees they are to say "no."

The script, obtained from the department by the Times/Herald, says employees are to answer:

"There is a very low risk of any effects from short-term exposure to PFOS and PFOA. There is no reason you need to change your daily routine and an alternative water supply is not necessary. If it is your personal preference, you may choose to utilize an alternative water for drinking, cooking or brushing teeth until your results are received."

The former deputy secretary, Beitsch, said he was aware of discussions going on within the department on how and when to test. He said his boss, DOH Secretary Celeste Philip, made it "very clear" that they were not to do "anything right now" at a meeting on Nov. 2. Beitsch said his training as a physician called for "sharing news of this nature in person and immediately," he said.

Beitsch, who is also a department chair at Florida State University's College of Medicine stepped into the deputy secretary role last fall at Philip's request, he said. He retained his professorship at the university, which also covered his salary for the state government role.

"This absolutely crossed a line. It's disregarding possible human health consequences for whatever reason," Beitsch said. "To be doing it for reasons that are bad, like political process and elections, that would be intolerable, unacceptable and shouldn't be permitted."

Beitsch's boss at FSU, College of Medicine Dean John Fogarty, said the news that Beitsch's services were no longer required came "out of the blue."

"Dr. Philip called me and said 'Dr. Beitsch and I have had some disagreements and I think it's time to sever that relationship,' " he said.

Fogarty said Beitsch is "not shy about expressing [his opinions]," but is "very experienced, very mature and has a pretty good worldview on problems and issues."

Beitsch says he grew vocal to protect people like Flores, because "that's what public health is supposed to be about." He said it made him furious that people who don't have neighbors like Flores were — and are — still drinking contaminated water. He compared the whole situation to the lead contaminated water in Flint, Mich.

"This is about being sure that our government organizations and agencies can do our job, that it's not politics governing science and it's not interfering with what's the right thing to do," he said. "That's been trampled on, overlooked."

Almost a week after Flores found out her well tested for substantially higher levels of the chemicals, she said she still doesn't know when officials will be back to address the situation. The well is supposed to serve her, her husband, her son and daughter, the two tenants, a friend and her baby who came to stay with them two weeks ago — but all of them will continue using bottled water until they hear otherwise.

Flores said she is frustrated it took nearly five months from when officials first suspected an issue at the Fire College for her to confirm that her water was contaminated. "They were trying to cover up" she worried. "Why should I have to look on the internet for answer?"

Days after the New Year, she said officials still kept telling her — even after giving her the well results — that the water issue was "not a big deal." She doesn't know when or if she will be able to drink water out of her own faucets again, and that her weeks of pleas for assistance will continue to go unaddressed.

"They didn't do what they're supposed to do," she said. "They're supposed to help people but they're not helping us. They messed up. They need to fix it."

Subcommittee on Environment and Climate Change
Hearing on
"Mismanaging Chemical Risks: EPA's Failure to Protect Workers"
March 13, 2019

Ms. Jeanneen McGinnis, United Auto Workers

The Honorable Frank Pallone, Jr. (D-NJ)

1. Trichloroethylene (TCE)

   a. **Did you and your coworkers feel safe using TCE?**

   RESPONSE:

   As referenced in my testimony, the Huntsville plant was old and poorly ventilated. We were breathing in the fumes and our skin was exposed to the various chemicals used in products. We received little training and were uninformed of the chemicals being used. I didn't understand the possible health effects of these chemicals, including TCE.

   It wasn't until I retired that I learned that TCE is a known carcinogen and toxic to the central nervous system in humans.

   Looking back, it is worrisome because we were being exposed to TCE at the Huntsville, Alabama plant many years prior to moving to the newly built Huntsville Electronic Division Chrysler (HEDC) plant in the early 1990's. At the HEDC plant, every solder line had a cleaning station. The agent used to clean the resin off the circuit boards was TCE. Chlorinated solvents like TCE were thought to be "safety solvents" because they would not catch fire. On a daily basis, we were breathing in fumes and TCE and dust from PC fiberglass. We used our bare hands to take solder paste out of containers. We were just trying to get the job done and we weren't informed about how harmful the paste was or anything else.

   I worked on the assembly line for twenty years. In 2003, I moved into a different role and became a benefit representative with the UAW. Currently, I work with the 2,000 retirees who suffer the effects of exposure at the plants. These plants were sold and eventually closed. I am very concerned that the health issues workers are experiencing might be linked to the chemicals we were exposed to at the plant. Researchers have studied my workplace. They found that my co-workers have died at a higher rate than the general population of diseases including cancers of the brain and nervous system as well as non-cancer nervous system diseases such as Alzheimer's and Parkinson's disease.

This week, I learned of a 58-year old who worked at the plant and now has stage 4 lung cancer. He needed help figuring out why his medical costs were so high and why chemotherapy was not covered. Breast cancer is also prevalent among women who worked at the plant. A co-worker of mine was recently diagnosed with breast cancer and had a double mastectomy. I too, have had health issues. I am a breast cancer survivor.

b. <u>When did you begin to worry about your workplace exposures?</u>

RESPONSE:

It is hard to definitively say when I started to worry about workplace exposures. But I would say that alarm bells went off for me after we found out about the baseball field contamination when I worked at the Huntsville, Alabama plant.

As discussed in my written testimony, there was a baseball field adjacent to one of our buildings where the ladies softball team played. Our concerns heightened when they closed the softball field after testing concluded that there was soil contamination. But we continued to work in the plant which was right next to the contaminated field and was the source of the chemicals contaminating the field.

c. <u>Did you receive clear information from your management about the risks in your workplace or the protective equipment you were supposed to use?</u>

RESPONSE:

We did not receive clear information from management about the risks to various chemicals in the workplace. I witnessed co-workers getting sick on the job and seeking help at the plant nurse station. Many workers complained of nausea, vomiting, headaches and pains in the legs. Several workers were transported by ambulance as a result of health issues.

Management didn't share what the potential health risks were in the workplace. They didn't say what the chemicals were in the products we were using. Management seemed to be limited in their knowledge of the chemicals as well.

In my written testimony, I mentioned that we were being exposed to chemicals from the solder wave machines. To keep the machines running, workers had to open up the machines and scrape off excess build up lead solder into a tray. There would be mechanical issues or even worse, a fire if we didn't fix the build-up. Fumes would frequently spew out of the machine while we were working. To make matters worse, a thick coating was applied to the floor intended to help with ergonomic issues. This was supposed to combat static and make the workplace safer, but it also resulted in lots of fumes. We were breathing in the fumes from the floor and the solder wave machines.

Postings about chemicals being used in the workplace were not widely disseminated. I recall a bulletin board was updated during OSHA audits with information about chemicals in the workplace. However, these postings were not explained to the workers. If I had been shown videos or had a sense of urgency about the chemicals I was working with, I would not have continued to work there.

d. Were you able to speak up in your workplace to advocate for better ventilation or more protective equipment?

RESPONSE:
Yes, we did speak up in the workplace to advocate for better ventilation. Since we had a union, our health and safety committee requested better ventilation and protective equipment. I had also shared my concerns with management, and they said they were compliant with OSHA regulations. We didn't know how inadequate OSHA's regulations are, as Dr. Finkel testified.

One way management addressed the ventilation issue was by opening the top of the plant so that fumes could escape. They used the retractable ceiling to lessen the fumes. It was far from a solution.

At one point we were given chemically protective shoes and jackets to wear in the work place. When the safety team conducted an audit they informed us that the jackets and boots were not made of the correct material to protect us from chemicals. Because the Personal Protective Equipment (PPE) did not fit correctly we had increase in exposure. We were not equipped with correct protective equipment and we had a false sense of protection.

e. What do you think EPA should do to protect workers from TCE?

RESPONSE:

In December 2016 and January 2017, EPA published proposed rules under section 6(a) of the Toxic Substances Control Act (TSCA) to ban commercial use of TCE in vapor degreasing, and to ban use of TCE in commercial and consumer aerosol degreasing and as a spot cleaner in dry cleaning. As part of these proposals, EPA proposed to prohibit the manufacture (including import), processing, and distribution of TCE in commerce and to prohibit commercial use of TCE for these purposes. In addition, EPA proposed to require manufacturers, processors, and distributors to provide downstream notification of these prohibitions throughout the supply chain. In December 2017, EPA postponed these proposed bans indefinitely.

The text of these proposals may be found at these links:

https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0387-0001

https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/federal-register-notice-trichloroethylene-tce-regulation

In order to protect workers from TCE, EPA should finalize these bans and put them into effect.

2. Risk Management Program (RMP): The UAW submitted a document for the hearing record entitled "Comments of the International Union, UAW on Accidental Release Prevention Requirements: Risk Management Programs under the Clean Air Act, Proposed Rule." In that document, UAW notes that many UAW members work in facilities covered by RMP program requirements, and that many also live in the vulnerability zones around these facilities. That document outlines a number of ways the proposed rule would weaken requirements for RMP regulated facilities. Specifically,

   a. **The proposed rule would rescind a requirement for safer technologies and alternatives assessment. How does that requirement protect workers?**

      RESPONSE:

      The proposed rule would rescind a requirement for facilities with Program 3 regulated processes in North American Industrial Classification System (NAICS) codes 322 (paper manufacturing), 324 (petroleum and coal products manufacturing), and 325 (chemical manufacturing) to conduct safer technology and alternatives analyses (STAA). These analyses could lead to the implementation of safer technologies such as the replacement of chlorine gas tanks with liquid chlorine bleach tanks. This makes both those who work in such facilities and those who live in their vulnerability zones safer by eliminating the possibility of inhalation of deadly chlorine gas. According to data provided by EPA in the rulemaking docket, between 2004 and 2013, there were 875 worker injuries and 40 worker deaths due to catastrophic events in facilities covered by the STAA provision. If the STAA requirement is allowed to stand, it is likely to reduce the number of injuries and deaths over the next decade.

   b. **The proposed rule would rescind the expanded safety training requirements now included in law. How do those training requirements protect workers?**

      RESPONSE:

      In order to resolve confusion as to who was covered by safety training requirements, EPA explicitly stated, in January 2017, that employees "involved in" operating a process are subject to the training requirements of the rule as are

supervisors responsible for directing process operations. Making sure that everyone with a potential need for safety training receives such training contributes to keeping both those who work in RMP-covered facilities and those who live in their vulnerability zones safer. Rescinding these training requirements would make them less safe.

c. **The proposed rule would rescind a requirement to keep process safety information up to date. How does that requirement protect workers?**

RESPONSE:

Keeping process safety information up to date is necessary in order to conduct an accurate process hazard analysis (PHA) and an accurate safer technologies and alternatives assessment (STAA). If these analyses are not accurate, they cannot be used to make a facility safer. Hence, they cannot provide safety to those who work in RMP-covered facilities and those who live in their vulnerability zones

d. **The proposed rule would rescind requirements to make certain information available to the communities around RMP facilities. How does that requirement protect workers who live in the vulnerability zones of these facilities?**

RESPONSE:

The rule requires the owner or operator of a stationary source to provide chemical hazard information to the public including:

- Names and SDSs of regulated substances
- Five-year accident history
- Emergency response efforts; and
- Procedures for informing the public and local emergency response agencies about accidental releases.

The rule requires the owner or operator of a covered facility to provide ongoing notification of availability of information through publicly accessible avenues such as a company web site or social media platforms. In addition, the rule requires a public meeting to be held for the local community within 90 days of an RMP reportable accident. This provision is designed to ensure that first responders and members of the community have easier access to chemical hazard information, which can significantly improve emergency preparedness and their understanding of how the facility is addressing potential risks. In the event of emergency, this will save lives both those who work in RMP-covered facilities and those who live in their vulnerability zones.

e. **The proposed rule would rescind the third-party audit requirement. How does that requirement protect workers?**

RESPONSE:

The rule requires owners or operators no later than 90 days after receiving a final audit report from a third party, to develop a findings response report that would include:

- A copy of the final audit report;
- An appropriate response to each of the audit report findings;
- A schedule for promptly addressing deficiencies; and
- A statement, signed and dated by a senior corporate officer, certifying that appropriate responses to the findings in the audit report have been identified and deficiencies were corrected, or are being corrected.

The rule further requires the owner or operator to develop a schedule to address deficiencies identified in the audit findings response report. The findings response report and schedule are to be provided to the board of directors. The owner or operator is required to document the action taken to address each deficiency, along with the date completed. Identifying and correcting deficiencies make both those who work in chemical facilities and those who live in their vulnerability zones safer. These deficiencies may never be identified and corrected if there is no requirement to conduct the audit in the first place.

f. **The proposed rule would rescind several provisions related to investigations, including requirements to investigate near misses and requirements to conduct root cause analysis. How do those provisions, in their current form, protect workers?**

RESPONSE:

The attached fact sheet from OSHA and EPA discusses the importance of root cause analysis to prevent future adverse events. "A root cause analysis allows an employer to discover the underlying or systemic, rather than the generalized or immediate, causes of an incident. Correcting only an immediate cause may eliminate a symptom of a problem, but not the problem itself." These underlying problems may not be corrected if root cause analysis is not required.

A second attached fact sheet from the National Safety Council discusses the importance of investigating near-misses. "History has shown repeatedly that most loss producing events (incidents), both serious and catastrophic, were preceded by warnings or near miss incidents. Recognizing and reporting near miss incidents

can significantly improve worker safety and enhance an organization's safety culture."

Investigating near misses and conducting root cause analysis contributes to the protection of both those who work in chemical facilities and those who live in their vulnerability zones. Failure to do so leaves them less safe.

3. PV29 Risk Assessment: The UAW submitted a document for the hearing record entitled "Comments of the International Union, UAW on the Draft Risk Evaluation for Pigment Violet 29." In that document, you criticized EPA's reliance on safety data sheets (SDS) and PPE to conclude "occupational exposures from… downstream users are likely to be limited due to the expected use of PPE (per Safety Data Sheet for C.I. Pigment Violet 29)…" You stated that the instructions in the SDS do not provide adequate information to allow the downstream user to determine what PPE is appropriate under what circumstances. You conclude: "EPA's finding of 'no unreasonable risk' rests on the assumption that all employers will successfully control exposure by voluntarily applying the least effect exposure control method, namely PPE. From this EPA concludes that no exposures in downstream users will exceed those in manufacturing. This is not scientifically justifiable."

   a. **Does this criticism apply only to Pigment Violet 29 or does it apply to other risk evaluations as well?**

      RESPONSE:

      This criticism applies to ANY risk evaluation that relies on an SDS to conclude that exposures will be minimal and/or that there is not likely to be an unreasonable risk. Attached is an SDS for methylene chloride or dichloromethane (DCM), for which EPA has decided not to ban commercial uses. Although we are not saying that EPA proposes to find that DCM is "not likely to present unreasonable risk," the DCM SDS is a good illustration of the inadequacy of relying on safety data sheets to reduce or eliminate unreasonable risk.

      Let us look at this SDS from the point of view of a small employer making an effort to protect employees, who has a very limited budget to pay for chemical expertise. Under "Hand Protection," (p.6) the employer learns that the product is to be used with "Solvent-resistant gloves." The employer is not told that a given glove could be resistant to one solvent and not another. As the attached permeation table shows, only a polyvinyl alcohol glove will protect against DCM for a whole shift. DCM permeates other kinds of gloves in an hour or less. Nowhere on the SDS does the employer learn this. The same is true for the solvent-resistant apron and protective suit recommended in the section on skin and body protection.

On p.5, the employer learns that the product should be used with "local exhaust ventilation" and that vapor buildup should be prevented "by providing adequate ventilation." Adequate local exhaust ventilation could be anything from a window fan to an advanced HVAC system. How does the employer know? It is true that what constitutes adequate ventilation depends on the quantity and conditions in which the employer uses DCM. It also depends on the size of the space to be ventilated. It is also true that manufacturers and distributers cannot know the specifics for all the employers that they supply to. This means that the issue raised here is not necessarily that the SDS should provide better information about ventilation. In some cases, this may not be possible. Rather, a single SDS cannot possibly anticipate and cover all conditions of use in downstream users with enough specificity to provide complete information about the necessary controls. For that reason, it is inappropriate and unscientific for EPA to rely on the SDS to make a finding of "not likely to present unreasonable risk."

There are numerous pre-manufacture notifications in which EPA made a finding of "not likely to present unreasonable risk" based on a reliance on safety data sheets to protect workers from exposure. All of these findings are inappropriate and unscientific. One example comes from the attached TSCA Section 5(a)(3) Determination for Premanufacture Notice (PMN) P-18-0221:

> Risks were identified for workers for adverse systemic effects via dermal exposure based on quantitative hazard data for the analogue... EPA also identified worker risks for skin sensitization, mutagenicity, carcinogenicity, and developmental, reproductive, liver, and kidney toxicity via dermal exposure based on potential epoxide formation... Risks will be mitigated if exposures are controlled by the use of appropriate PPE, including impervious gloves. EPA expects that workers will use appropriate personal protective equipment (i.e., impervious gloves), consistent with the Safety Data Sheet prepared by the PMN submitter, in a manner adequate to protect them... Because worker exposures can be controlled by PPE, no unreasonable risks to the general population or environment were identified, and there are no expected consumer exposures, EPA determined that the new chemical substance is not likely to present unreasonable risk to human health or the environment under the conditions of use.

The material covered by this notice is identified as "Polyglycerol reaction product with acid anhydride, etherified." A search for an SDS for a product by that name was fruitless. If EPA proposes to rely on the SDS for its determination of "not likely to present unreasonable risk," it should at the very least make that SDS available to the public for evaluation. More importantly, if the material were truly not likely to present unreasonable risk, PPE would not be necessary. If EPA means, there is an unreasonable risk that can be eliminated by PPE it should say

so. It should not say there is not likely to present unreasonable risk due to assumed use of PPE.

EPA's own analysis appears to indicate that there are, or at least may be, unreasonable risks of skin sensitization, mutagenicity, and carcinogenicity, as well as developmental, reproductive, liver, and kidney toxicity. The presence of such unreasonable risk would require EPA to impose restrictions necessary to protect against the risk. At the very minimum, EPA should require, not assume, the use of PPE. However, any time there is an occupational risk that needs to be mitigated, there is always a better way than PPE, as indicated below and in our comments on Pigment Violet 29.

In relying on an assumption of universal voluntary use of PPE to make its finding of "not likely to present unreasonable risk," EPA ignores the hierarchy of controls entirely. The hierarchy is a core component of standards issued by the U.S. Department of Labor – Occupational Safety and Health Administration (USDOL – OSHA). The hierarchy requires employers to eliminate, prevent and/or control hazards based upon the following preferred order of controls:

a. First: Elimination;
b. Then: Substitution of less hazardous materials, processes, operations or equipment;
c. Then: Engineering controls;
d. Then: Administrative controls; and
e. As a last resort: Personal Protective Equipment ("PPE").

This means that any time EPA relies on PPE to make a determination of "not likely to present unreasonable risk," it should instead be issuing an order, or a rule, not for PPE, but for a more effective control method higher up the hierarchy of controls.

Mr. Grumbles, Past President with the American Industrial Hygiene Association (AIHA) stated in his testimony at the hearing that:

[W]hen an SDS for a chemical is introduced into the workplace. A hazard assessment is developed that informs the need for:

1. Additional training;

2. Workplace labeling;

3. Changes in standard operating procedures;

4. Additional engineering controls; and

5. PPE needs.

The UAW agrees that a responsible employer performs a hazard assessment whenever an SDS for a chemical is introduced into the workplace, and that the hazard assessment informs the needs for the five items listed above. According to the hierarchy of controls, however, engineering controls should be item 1 not item 4. More importantly, Mr. Grumbles states that the responsible employer performs a hazard assessment. The responsible employer must do so because the SDS alone is not adequate to inform the employer how to control the risk under the conditions of a particular workplace. EPA, however, does not require an employer to perform hazard assessment upon receiving an SDS for Pigment Violet 29 or for "polyglycerol reaction product with acid anhydride, etherified" or for numerous other new chemicals. EPA does not even assume that the employer will perform the hazard assessment. Instead EPA assumes the risk into non-existence by stating

"occupational exposures from… downstream users are likely to be limited due to the expected use of PPE (per Safety Data Sheet for C.I. Pigment Violet 29)…"

and

"EPA expects that workers will use appropriate personal protective equipment (i.e., impervious gloves), consistent with the Safety Data Sheet prepared by the PMN submitter, in a manner adequate to protect them…"
(Section 5(a)(3) Determination for Premanufacture Notice (PMN) P-18-0221, p.5)

Nowhere does EPA acknowledge that the employer cannot properly protect the employees based on the SDS alone without first conducting a hazard analysis. It strains credulity to interpret EPA's assumption of proper PPE use based on the SDS to include an assumption that the proper hazard assessment will be conducted and that the results of that hazard assessment, including engineering and administrative controls, would be implemented before PPE is used. It strains credulity even more to assume that it cannot be reasonably foreseen that some employers would fail carry this process through to conclusion and implementation. As long as it can be reasonably foreseen that that the smallest employers with the least access to chemical expertise would not be able to carry the process through to arrive voluntarily at all engineering, administrative and personal protective controls necessary to control the hazard, making a finding of "not likely to present unreasonable risk" based on an SDS and PPE is inappropriate and unscientific.

b. <u>Do you believe that employers will voluntarily and effectively employ PPE?</u>

RESPONSE:

As indicated in the previous answer, PPE is the least effective way to protect against hazards. Many, but not all employers will voluntarily employ PPE. Only a fraction of them will do so effectively. In the example of DCM above, employers who cannot afford industrial hygiene expertise, may not employ the correct "solvent resistant gloves" leading to skin exposure to this highly toxic and carcinogenic material. As indicated above, the same is true for the solvent-resistant apron and protective suit recommended in the section on skin and body protection.

In his testimony, Mr. Grumbles stated:

> The OSHA database of 12 million violations dating back to the 1970s shows less than one percent of violations related to lack of eye protection, lack of general dermal protection, and lack of glove use (or inappropriate glove use), despite the fact that these violations are relatively easy to observe. This confirms that workers are wearing PPE and compliance is likely.

He is simply incorrect in his assertion that inappropriate glove use, or more accurately, the provision of the wrong gloves by the employer is easy to observe. The inspector would have to determine all the chemical substances which the employee touches, determine the material of which the gloves are made, and consult a permeation table, such as the one attached to be sure the gloves protect against all the relevant substances. After all that, to cite the employer, it would still have to be proven not merely that the employee was wearing the wrong gloves but that the employer had failed to follow the procedures in the governing standard. This is not "relatively easy" to do.

Both Mr. Grumbles and Mr. Duvall (Principal, Beveridge & Diamond PC) point to an OSHA requirement to conduct a hazard assessment prior to PPE selection. They are correct, such a requirement exists. However, in order to make a finding of "not likely to present unreasonable risk," EPA must assume that it is reasonably foreseen that ALL employers will conduct the hazard determination AND conduct it correctly. Again, and again, EPA relies on an assumption that all employers will select PPE perfectly every time and all employees will use PPE perfectly every time. It can be reasonably foreseen that this is not always the case.

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS ®
HAROLD A. SCHAITBERGER
General President
EDWARD A. KELLY
General Secretary-Treasurer

April 23, 2019

The Honorable Frank Pallone
Chairman
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20515

Dear Chairman Pallone,

On behalf of the nation's 316,000 professional fire fighters and emergency medical responders, I am writing in response to your questions arising from the March 13, 2019 hearing of the Subcommittee on Environment and Climate Change entitled "Mismanaging Chemical Risks: EPA's Failure to Protect Workers."

1) Fire fighter exposure to PFAS-

   a. Do fire fighters currently receive guidance or training on how to minimize their exposure to PFAS in fire fighting foam?

      Standardized training is typical within the fire service. Fire fighters receive generalized training on the importance of personal protection from carcinogens and toxins expected to be found at all scenes of emergency response. However, specific training related to PFAS exposure is not part of the standardized fire fighter training programs.

   b. When using foam in fire fighting, how to fire fighters determine the volume of foam to use? Are exposure concerns weighed in determining how much foam to use?

      When flowing foam suppressants, fire fighters rely on a foam proportioner to determine the exact amount of concentrate mixed with water at the fire pump. Line proportioners are venturi devices that introduce foam concentrate into a flowing stream of water at a controlled, proportioning rate. The in-line proportioner (as known as an inductor or educator) is a simple, inexpensive method of proportioning the foam concentrate at a predetermined rate, generally at 3% or 6% of the total water/foam agent, delivered to extinguish or control a fire. Fire fighters limit the suppressant flow to the amount of fire suppressant agent necessary to establish a foam barrier over the entirety of the liquid fueling a fire. The foam acts as a barrier to deny the fire oxygen essential for combustion, thus extinguishing a fire, while simultaneously cooling the covered substance, which prevents re-ignition.

Aqueous film forming foam (AFFF) is not designed to be applied to burning solid materials.

c. Should EPA or other federal agencies play a role in investigating fire fighter exposures and hazards to PFAS?

Federal oversight and investigation of fire fighter exposures to PFAS are timely and important. The EPA should examine workers' perspectives as it regulates toxic chemicals, including PFAS, but it should do so in conjunction with the National Institute for Occupational Safety and Health. NIOSH has extensive experience working with the fire service and is in the best position to leverage this experience, along with existing relationships, to improve the health and safety of fire fighters.

The Department of Defense, which employs approximately 10,000 federal fire fighters who are regularly exposed to AFFF, also has a responsibility to track worker exposure to PFAS, including fire fighter exposure.

2) Fire fighter exposure to asbestos-

a. Are fire fighters always able to wear SCBA while fighting fire where asbestos may be a concern?

The SCBA is the primary apparatus used by fire fighters to protect their respiratory system in nearly all conditions where a fire is present. When asbestos is known, fire fighters must take proactive measures to protect their respiratory system from airborne asbestos during all phases of the operation on and about the scene, even when a fire is not present. Most SCBA facemasks are capable of being fitted with a high-efficiency particulate air (HEPA) filtering canister designed for capturing airborne particulates such as asbestos fibers, thereby protecting the fire fighters' respiratory system. Unfortunately, the presence of asbestos is not always known and SCBAs are often removed once the fire is suppressed and during decontamination activities, resulting in exposure. The major concern is that we are relying on PPE, the least effective control to protect fire fighters, rather than eliminating the toxic chemical. SCBAs are always available, but the length of time they are used are conditional to the levels of toxic gases in the air and not based on the presence of asbestos since that information is not always readily available.

b. Does the advice in this data safety sheet address exposures to asbestos fibers on your equipment and clothing after fighting a fire where asbestos is present?

The current language contained on safety data sheets provides a good

foundation for the protection of fire fighters when a fire is present. However, the safety data sheet should be enhanced by including language directing fire fighters to perform on-scene decontamination procedures using copious amounts of soap and water before bagging equipment and clothing to be sent for specialized cleaning.

c. Is a safety data sheet enough to protect fire fighters from asbestos risks?

No. Beyond the safety data sheet, the IAFF would welcome a compulsory requirement for building and property owners to notify local fire departments of the presence of asbestos. Notification should occur each time the building or property ownership or occupancy changes.

I hope you find the answers provided to be responsive to the questions asked. However, if there are additional questions or a need for further clarification, please do not hesitate to ask.

Again, thank you for your support of our nation's fire fighters and your leadership on this important issue.

Sincerely,

//Signed//

Patrick Morrison,
Assistant to the General
President for Health,
Safety, and Medicine

Subcommittee on Environment and Climate Change
Hearing on
"Mismanaging Chemical Risks: EPA's Failure to Protect Workers"
March 13, 2019

Ms. Wendy Hutchinson, Baltimore Teachers Union and American Federation of Teachers

The Honorable Frank Pallone, Jr. (D-NJ)

1. During the hearing, it was suggested several times that safety data sheets for various chemicals provide enough information for workers to protect themselves. Safety Data Sheets for asbestos provide precautionary statements including this one – "Do not breath dust."

    a. Have you been provided a safety data sheet for asbestos by your employer?

    RESPONSE: No

    b. Is the precautionary statement "Do not breathe dust" useful to you? Are you able to change your behavior, without a change in your workplace conditions, to avoid breathing dust?

    RESPONSE: It is useful to know how to behave under certain conditions. I would not be able to change my workplace conditions to comply.

    c. Does your employer provide you with any protective equipment to avoid exposure to asbestos?

    RESPONSE: No

    d. How would wearing protective equipment, such as a respirator, impact your ability to teach?

    RESPONSE: It would make it impossible to teach.

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Mr. Giev Kashkooli, United Farm Workers

The Honorable Frank Pallone, Jr. (D-NJ)

1. **In the days following your testimony, EPA moved forward again on a rulemaking to revise the application exclusion zone. What is the application exclusion zone and what impact would that rulemaking have on farmworkers, their families, and their communities?**

RESPONSE:

The Environmental Protection Agency (EPA) included stronger language in the 2016 revisions to the Agricultural Worker Protection Standard ("WPS"), establishing the concept of Application Exclusion Zones ("AEZ") to reduce the risk of continued exposures to workers and bystanders during pesticide applications. An AEZ is a relatively small (25-100-foot) area around the pesticide application equipment where no one is permitted to be when a pesticide is being sprayed. To prevent immediate harm, the AEZ provision within the WPS requires the precaution that if someone is applying pesticides and sees workers or other people around the pesticide application equipment, they should try to avoid spraying them by suspending the application and resuming after a non-trained and unprotected person leaves the area. EPA's own analysis found that the AEZ requirement would reduce a significant portion of poisoning incidents while imposing only negligible costs on employers.[1]

Exposure from drift during applications is a serious and common public health problem in agricultural communities. Attempts to address the issue in the past have failed, at great cost to workers' health. For more than 40 years, EPA recognized and tried unsuccessfully to prevent exposure to farmworkers from spray drift during pesticide applications. Between 1992-2017 the WPS included a provision prohibiting pesticide handlers from applying pesticides in a manner that would "contact, either directly or through drift, any worker or other person, other than an appropriately trained and equipped handler."[2] Despite this prohibition and similar language on pesticide labels, poisoning incidents to workers and

[1] Agricultural Worker Protection Standard, Preamble to the Final Rule, 80 FR 67,524-5, Nov. 2, 2015, and Economic Analysis of Agricultural Worker Protection Standard Revisions, September 2015, pp. 88-89.
[2] 57 FR 38161

bystanders continued to occur at alarming rates. Federal and state health agencies, worker advocacy organizations, and even the news media have reported hundreds of injuries each year resulting from careless pesticide applications.

For this reason, preservation of the AEZ provision is vital to protect workers and communities from spray drift. Farmworkers, their children, and other bystanders are exposed to pesticides through drift and volatilization. There are 2.5 million farmworkers across the U.S.--including hundreds of thousands of minors--who are regularly exposed to pesticides in fields and nurseries across the nation. This number does not account for the workers, children and communities that live, learn, work, play and pray in areas adjacent to agricultural establishments where pesticides are sprayed. The health and safety of workers and rural communities is inextricably linked to the precautions that pesticide applicators must take to ensure that workers or bystanders are not sprayed with pesticides.

The protections provided by the AEZ provision are crucial because EPA's pesticide risk assessments are premised on the assumption that pesticides will be used according to their respective labels, which includes a prohibition on direct spraying of workers and bystanders with pesticides. EPA's pesticide risk assessments and registration decisions do not take into account the inevitability that pesticides will be "misused" and people will be sprayed with these chemicals.

Unfortunately, the EPA is taking steps to undo one of the most meaningful safeguards against workers or bystanders being sprayed with pesticides. In fact, on March 13, 2019, on the same day of my testimony before the Energy and Commerce Subcommittee on Environment and Climate Change, the agency sent proposed revisions to the AEZ provision to the Office of Management and Budget (OMB) for review.

The idea that pesticide applicators should avoid spraying pesticides when there are people in harm's way is an unquestionably sound policy from the standpoint of human health and human rights. Yet, pursuant to PRIA 4, the Trump Administration "may" reconsider and revise the AEZ provision of the WPS. EPA's attempt to weaken the commonsense protections provided by the AEZ provision without justification is misguided and dangerous for farmworker and rural communities across the country.

It is important that policy makers recognize and understand that the brunt of weakening the AEZ provision would be borne by low-income communities and communities of color, since the majority of farmworkers are of Latino and/or indigenous ancestry.[3] To comply with its obligations under the law and Executive Order 12898 - Federal Actions to Address

[3] Findings from the National Agricultural Workers Survey (NAWS) 2015-2016: A Demographic and Employment Profile of United States Farmworkers. Research Report No. 13. January 2018. Available at https://www.doleta.gov/naws/pages/research/docs/NAWS_Research_Report_13.pdf

Environmental Justice in Minority Populations and Low-Income Populations, EPA must preserve or strengthen the existing worker protections rather than weaken them.

For the sake of workers and agricultural communities, we urge members of Congress to follow any revisions to the AEZ closely, to weigh in during the public comment period, and oppose any proposals that fail to protect workers and bystanders from occupational exposures and toxic drift.

2. In 2015, the World Health Organization classified glyphosate as "probably carcinogenic to humans." In December 2017, EPA published a draft risk assessment that found no carcinogenic potential. A recent scientific study seeking to understand these different conclusions found several factors at play, including EPA's reliance on manufacturer provided studies, EPA's focus on the single active ingredient rather than studies of the formulations marketed and used in the United States, and EPA's focus on dietary exposure as opposed to occupational exposure.

   a. **Do you think EPA should look at occupational exposures in its pesticide risk assessments? Why is this important?**

      RESPONSE:

      It is unacceptable that EPA did not evaluate occupational exposure to glyphosate and glyphosate-based herbicides as part of its human health risk assessment. In general, farmworkers who handle pesticides or work in areas where they are applied are the most exposed to pesticides and therefore the most vulnerable to pesticide toxicity. Furthermore, given the growing body of evidence that occupational exposure to glyphosate-based herbicides can cause cancer, it is especially concerning that EPA did not evaluate this type of exposure in the glyphosate risk assessment.

      This year, scientists at the University of California, Berkeley; the University of Washington; and Icahn School of Medicine at Mount Sinai published an analysis that combined data from six independent studies and found that exposure to glyphosate-based herbicides was associated with non-Hodgkin lymphoma.[4]

[4] Luoping Zhang et al., Exposure to Glyphosate-Based Herbicides and Risk for Non-Hodgkin Lymphoma: A Meta-Analysis and Supporting Evidence, Mutation Research (2019), available at https://www.sciencedirect.com/science/article/pii/S1383574218300887

b. Do you think EPA should look at risks posed by the formulations marketed and used in the United States? Why is this important?

RESPONSE:
EPA should evaluate the safety of glyphosate-based herbicides, which are complex mixtures of glyphosate and other ingredients, and not just the safety of glyphosate. This would better reflect how glyphosate is used, and what exposures result from its use, under real-world conditions. As part of the human health risk assessment process, EPA solicited feedback from independent experts who serve on the agency's Scientific Advisory Panel for pesticides. The independent experts recommended that EPA "identify and discuss any rodent cancer bioassays of glyphosate-based formulations" and not just studies of glyphosate in isolation.[5]

c. Do you think it is appropriate for EPA to rely heavily on manufacturer-provided studies, rather than peer-reviewed studies?

RESPONSE:

It is not appropriate for EPA to rely on manufacturer studies rather than on peer-reviewed independent studies. Notably, while the manufacturer of glyphosate continues to insist that its product does not cause cancer, multiple peer-reviewed epidemiologic studies by independent scientists have found that exposure to glyphosate-based herbicides is associated with cancer. See above. In general, there is a clear conflict of interest when a company that makes money by selling a product is also responsible for evaluating it. It is well documented that such conflicts of interest can result in biased studies.[6]

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[5] U.S. EPA, Transmission of Meeting Minutes and Final Report of the December 13-16, 2016 FIFRA SAP Meeting Held to Consider and Review Scientific Issues Associated with EPA's Evaluation of the Carcinogenic Potential of Glyphosate (p. 14), available at https://www.regulations.gov/document?D=EPA-HQ-OPP-2016-0385-0526

[6] Andreas Lundh et al., Industry Sponsorship and Research Outcome, Cochrane Database of Systematic Reviews (2017), available at https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.MR000033.pub3/full

Dr. Adam Finkel
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Dr. Adam Finkel, Clinical Professor of Environmental Health Sciences
University of Michigan School of Public Health

The Honorable Frank Pallone, Jr. (D-NJ)

1. Methylene Chloride – In the days following the hearing, EPA published a final rule on methylene chloride, which fell short of the full ban in the proposed rule. At the hearing, you testified that the anticipated rule would leave workers and consumers at risk and would likely duplicate OSHA requirements. Now that the rule has been published, do you still believe that to be the case?

RESPONSE:

Yes ("the anticipated rule(s) will leave workers and consumers at risk and will duplicate OSHA requirements"). Having read both the Final Rule (regarding consumers) and the Advanced Notice of Proposed Rulemaking (ANPR; regarding workers) that EPA published on March 27, my concern that EPA leaves both groups under- or unprotected has generally increased.

The consumer portion does have some superficial appeal over the prior version (Proposed Rule, 19 Jan. 2017), which would have ended the sale of methylene chloride (MeCl2) in containers holding less than 55 gallons. That strategy might have imposed direct costs on manufacturers, and it might have been hard to deter middlemen from making dogged efforts to circumvent this restriction.

But simply declaring that no one can sell (or buy) MeCl2 for "consumer paint and coating removal" may not get the job done either. How can we be reassured that a consumer can't buy MeCl2 advertised as being for "degreasing" and then USE it to strip paint? And since the definition of a "consumer" is someone who uses the product "without receiving remuneration or any other form of payment," how can EPA stop retailers from selling to persons who say they have been "hired" to strip paint off a bathtub or piece of furniture, who in fact are "charging" a friend or relative a nominal amount in order to circumvent the rule? The rule appears to have no provision for defining a *non*-consumer as someone who can show some documentation s/he is working for pay, or a license that shows s/he generally works for pay in this regard.

And most importantly, EPA gives no indication whether and how it believes it can

enforce a no-sale-to-consumers provision. At least a 55-gallon drum restriction is facially obvious—any smaller container would have been someone's violation—but notwithstanding the high TSCA penalties for violating the Act, it is unclear to me whether or how EPA expects to witness and penalize transactions between retailers and the "wrong" class of buyers. The rule does forbid "retailers" (defined as a business with at least one consumer as a customer) from selling MeCl2 to anyone for paint/coating removal—so it might be straightforward for EPA to police whether obvious retailers are selling MeCl2 at all (except if it is marked as being for a use other than paint removal). But again, if someone can go to a distributor, or a business who sells to commercial users, and claim to be working for hire, it is not clear how EPA or the seller would know that the rule is being circumvented.

I am also concerned that the new Final Rule does nothing to protect consumers from the hazards of N-methylpyrrolidone (NMP) as the 2017 Proposed Rule would have done; EPA now simply omits all mention of NMP, inexplicably.

I question whether this Final Rule is permissible under the Administrative Procedure Act, as arguably it is not a "logical outgrowth" of the 2017 Proposed Rule. Indeed, in that proposal, EPA rejected the option of "forbidding" consumers from buying MeCl2, with a reasoned explanation *that EPA does not refute in the Final Rule.* On p. 7481 of the Proposal, EPA stated that "However, EPA recognizes that consumers can easily obtain products labeled for commercial use. Indeed, for many consumers, identifying a product as being for commercial use may imply greater efficacy."

Saying then that consumers can "easily obtain" a dangerous solvent, one that EPA now says they are forbidden from obtaining, seems to me legally insufficient as well as unenforceable.

As for workers, the March 2019 ANPR will leave them unprotected for *years* longer, while EPA turns the clock back on a 2017 proposal that would have given them some protections. Again, here EPA has adopted (actually, only re-starting a long process that will *at best* result in adopting) the very remedy it explained was too costly and insufficiently effective two years ago. In the prior proposal (82FR, Jan. 19 2017, p. 7474), EPA explained that "given the Agency's experience with the training and certification program under the Lead-Based Paint Renovation, Repair, and Painting Rule, EPA viewed the costs and challenges involved in regulating distributors and ensuring that only trained and certified commercial users are able to access these paint and coating removal products as a significant limitation for this approach." Now EPA solicits more information about an approach it has already rejected, one that it merely says "*could address* any unreasonable risks that EPA *could potentially find* to be presented by methylene chloride in commercial paint and coating removal" (emphasis

added). Apparently (p. 6 of the pre-publication version of the ANPR), one single Small Entity Representative suggested in 2016 that EPA abandon its approach of protecting workers via a targeted use ban and substitute a training/certification program; EPA rejected that approach, but now inexplicably "is interested in soliciting additional public input" on an approach that almost no one supported when it was floated.

As I demonstrated amply in my March 13 written testimony, and in comments to EPA in May 2017, it is simply indisputable that workers are currently facing unreasonable risks from MeCl2 in this and other sectors. OSHA's 25 ppm PEL is insufficient to reduce long-term excess cancer risk below one chance per *thousand,* even if compliance with it was widespread, which the data I presented show it is not. EPA therefore makes two fatal errors in this one sentence (p. 15 of the ANPR, pre-publication version) when it states that "workplaces that have robust environment, safety and health protection programs and are in compliance with OSHA's methylene chloride standard ... are likely to address any risks EPA could potentially find to be present from exposure to methylene chloride during commercial paint and coating removal so that they are no longer unreasonable." First, full compliance with the standard cannot by definition eliminate unreasonable risks, and second, the statement ignores the majority of workplaces that are *not* in compliance. Moreover, the EPA training/certification approach is already a core part of the 20-year-old OSHA standard—so anyone sincerely concerned with duplicative and inefficient governmental overlap should regard the weak 2019 ANPR as precisely what EPA should *not* be doing. I elaborate and offer various other concerns about the ANPR here:

- OSHA *already* requires (29 CFR 1910.1052(l)) all workers who use MeCl2 to be trained in the hazards of exposure, the means of reducing exposures, and the specific conditions at the worksite that could result in exposures—and requires that proficiency in these subjects be ascertained and documented. The OSHA MeCl2 standard also requires that employees be re-trained whenever tasks or processes are modified so as to potentially increase MeCl2 exposure. Indeed, EPA's ANPRM recites the OSHA training requirements in detail, but never offers any information to suggest that it will consider requiring *any* training/certification requirements that go beyond, as opposed to merely duplicating, OSHA's requirements.

- We already know that the OSHA training requirements have not materially reduced chronic MeCl2 exposures, and appear not to have reduced the toll of acute fatalities (asphyxiations). EPA holds up as a model program (p. 12) the UK Health and Safety Executive training requirements for MeCl2, which deems someone a "professional" if they receive four hours of training total. It therefore seems unlikely that EPA will require more than merely duplicating (at additional cost to employers) the OSHA-required training, despite its

failure to achieve the objectives even of the comparatively weak OSHA standard.

- Although it might otherwise be possible that enforcing training requirements specifically with respect to respirators might increase worker protection, this will not be the case with respect to MeCl2. Air-purifying respirators (dust masks, chemical-cartridge respirators, or powered air-purifying respirators) are ineffective against MeCl2, so the only option is for employers to install supplied-air systems to their workers, which few employers will find affordable.

In the face of so much evidence that MeCl2 currently poses unreasonable risks to workers, it is very disappointing that EPA has chosen to delay meaningful protections under TSCA for at least several years, while it receives still more information about why training alone cannot solve these problems.

2. Asbestos – During the hearing, you had limited time to answer a question about whether you believe that asbestos should be banned. Would you like to elaborate on your answer?

RESPONSE:

At the hearing, I answered the question about asbestos from Chairman Pallone as a risk assessor and former OSHA official (my former agency does not ban substances, but applies a Supreme Court interpretation of its authorizing statute to control exposures to hazardous substances so as to reduce "significant risk" from them). I do believe that different forms of asbestos have different carcinogenic potencies, and that OSHA would have to consider whether it would be scientifically appropriate—and technically and economically feasible—to set different exposure limits for various forms.

EPA, however, has different authorities under TSCA. Because of the proven causal relationship between asbestos and mesothelioma (and other grave health effects), and the availability of effective alternatives, I support S.717 (H.R. 1603), the Alan Reinstein Ban Asbestos Now Act.

I also now realize I was too sanguine in my answer about the prospects of this EPA doing what is necessary here. I was dismayed to see the April 25, 2019 publication of a Final Rule that EPA is calling a "Significant New Use Rule" on asbestos. This is in my view a cynical title, because all EPA has done here is to say it will not automatically allow any future requests to allow OLD uses of asbestos to "re-start"—the 18 uses EPA included in this rule are not "new," but are *obsolete* uses. The "SNUR" does nothing to

reduce the hazards of asbestos from ongoing uses, from worker and community exposures during abatement, cleanup, etc., or from truly "new" uses that are not among these "old" uses. Calling this a "SNUR," and suggesting that "banning" the manufacture of obsolete products is a risk-reduction measure, sends a disappointing signal about what the current EPA leadership views as an accomplishment.

3. Chemical trespass – During the hearing, you had limited time to answer a question about whether EPA is doing enough to reduce chemical trespass. Would you like to elaborate on your answer?

RESPONSE:

During the hearing, Rep. McNerney asked about "chemical trespass." I had most often heard that term used to specifically describe situations where agricultural pesticides drift onto nearby farms and communities (situations that EPA could address via TSCA, but more likely via the FIFRA statute). I realize that the term is now used more broadly to connote the general problem of bioaccumulation of toxic chemicals in all our bodies, especially when the public is not properly informed of their exposures, the likelihood and severity of harm therefrom, and the benefits and costs of reducing or eliminating such "trespass." I do believe that EPA is not doing enough to assess, and more importantly, reduce, the incremental exposures of workers and the general public to existing and new chemicals—as evidenced by the slow pace of TSCA risk evaluations and the rollback of important rules that were ready for promulgation.

The hearing in March was admittedly much more about risk management than risk assessment—but without going into too much detail here, I strongly encourage the Committee to investigate subtle but far-reaching changes at work inside EPA's scientific programs and external review committees, which I believe will further erode the Agency's mission of reducing harmful human exposures to toxic substances in the environment.

As a pioneer in helping to develop risk assessment methods, some of which EPA has embraced and others of which it continues to rebuff, despite scientific consensus to the contrary, I am most concerned about the relatively recent (but beginning before the 2016 election) science-policy changes at EPA that are fundamentally changing how risk assessment is conducted and used. In particular, the enthusiasm for "systematic review" as the purported gold standard without which no assessment can be complete and no risk reduction can occur, is in my view myopic and unscientific. Many of my colleagues support systematic review while trying to help make it become less cumbersome and involve less delay—but that is not the major concern I have. Rather,

along with the determination to amass, review, weigh, and synthesize every possible published research finding about each chemical, EPA and others are now embracing the notion that the only goal of risk assessment is the accurate *prediction* of the frequency and magnitude of adverse health effects. But Congress did not authorize and fund the "Environmental Prediction Agency"; it established a "Protection Agency" that until recently has at least tried to guard against significant errors that *underestimate* risk—an Agency that tried to balance both accuracy and precaution.

EPA used to rely on a reliable and time-tested system with two cornerstones: in order to start with the best available science, it developed a set of "default" assumptions (for example, the vast amount of prior evidence that tumors in laboratory animals are generally found to be relevant to humans) that tended to guard against risk underestimation, but also welcomed specific evidence that would make a compelling case that one or more "defaults" were not correct for a particular chemical or in a particular assessment. But lately, EPA has announced it will "reduce reliance on defaults" by pretending, in my view, that science knows *nothing* about how any particular chemical causes harm until specific research can pin down a "mode of action" (MOA) for it. In effect, the face-value evidence of harm from toxicology or epidemiology now has to await some grand theory of how to interpret it before EPA is willing to act. But we *had* a grand theory until the past few years: that statistically significant elevations of disease in epidemiologic studies or widespread harm in well-conducted toxicology studies *were* evidence of risk, and were amenable to reliable assumptions about dose-response, unless there was compelling evidence to the contrary.

I encourage the Committee to hold hearings on this silent revolution in EPA risk assessment, and its effects—both potential and already realized—on increasing chemical trespass across communities and workplaces nationwide. I emphasize—because I already know what the glib response will be—that the alternative I support is *not* any less "systematic" or scientifically sophisticated than the new emphasis on "innocent (or at least 'not ready for controls') until MOA proven." I simply advocate making use of decades of scientific findings that EPA now seems to want to regard as no more reliable than the newest speculations in the literature.

4. Trichloroethylene (TCE)

    a. What is the status of EPA's efforts on TCE?

    RESPONSE:

It is my understanding that EPA has relegated two rules it proposed and took comments on in 2016 and 2017—that would have banned the use of TCE in vapor and aerosol degreasing, and in spot cleaning of clothing—to the bureaucratic limbo of "long-term actions." Meanwhile, it is proceeding at an unknown rate to redo—yet again—the risk assessment for TCE.

b. If EPA fails to act on TCE, will OSHA regulations be enough to protect workers from TCE?

RESPONSE:

No; OSHA regulations on TCE are almost non-existent. OSHA has never updated its PEL for TCE since 1970, when it incorporated the 1968 American Governmental Conference of Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) for the chemical; that TLV was based on scientific evidence from the 1960s and before. The OSHA PEL remains at 100 parts per million (ppm), while the TLV has been lowered to 10 ppm. EPA's IRIS program has done a modern cancer risk assessment on TCE, and has assigned an inhalation unit risk factor of approximately $5x10^{-3}$ per ppm (when adjusted from 70-year, 24 hr/day exposure to 45-year, 8 hr/day occupational exposure).

For this question, I analyzed all the OSHA workplace samples for TCE over the last 25 years (about 1300 measurements)—the average concentration found was 39 ppm, but almost 10 percent of the samples exceeded the old 100 ppm PEL. Clearly, OSHA has failed to provide workers exposed to TCE with acceptable levels of protection.

5. New Chemicals - Since July 2018, have you seen a trend or drop off in how often EPA is limiting workplace exposures to PMN chemicals?

RESPONSE:

Yes; the data are clear that the percentage of PMN applications that EPA approved *without* restrictions of any kind has dramatically increased since July 2018, after the Agency "streamlined" its PMN process (the changes were billed as speeding up the process, but also signaled a policy change whereby EPA now can approve a PMN without restrictions even if there are "reasonably foreseen" use(s) that might present unreasonable risks; the prior framework had EPA at least beginning to consider a Significant New Use Rule for such use(s) as it issued the PMN approval).

At the March 13 hearing (at about the 1:57 mark in the video), Rep. Schakowsky asked Mr. Duvall whether indeed the rate of PMN approvals with and without restrictions had

changed after July 2018. Unfortunately, Mr. Duvall repeated his prior testimony in which he combined the data both before and after July 2018, and made no reference to the marked difference *between* these two periods.

By referring to EPA's own data summarizing the disposition of PMNs (https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/statistics-new-chemicals-review#stats), I was unable to reproduce even Mr. Duvall's aggregated claim (p. 3 of his written testimony) that 441 of 564 (78%) PMNs (not counting withdrawals) were approved with restrictions. EPA's website currently shows that between June 2016 and April 2019, 460 of 726 PMNs were approved with restrictions, which is 63%. And in any event, the "restrictions" in some/many cases may involve simply asking the manufacturer to provide additional information—I'm not aware of any data updating the tally to account for cases where the information later resulted in a no-restrictions approval.

But the change before *versus* after July 2018 is dramatic indeed, making it very misleading to combine the two periods without explanation. I examined EPA's detailed table of how it ruled on each PMN (available at https://www.epa.gov/sites/production/files/2019-04/documents/pmn_4-18-19.pdf), and I found 35 decisions made since July 2018 (which suggests, by the way, not a "speedier" process than before...); of these 30 (86%) were approved *without* restrictions. So even if Mr. Duvall is correct that the overall rate counting both periods was 78% *with* restrictions, it is clear that almost all of the restricted approvals occurred before July 2018, which was the exact point of Rep. Schakowsky's question and of this follow-up.[1]

6. Dispersants

    a. Can OSHA address risks to public sector employees, such as oil spill responders?

RESPONSE:

Federal OSHA standards (and the OSH Act's General Duty Clause) do not apply to public-sector workers, although 26 states do protect public-sector workers, either by operating a comprehensive state OSHA program for all workers, or (in 4 states) by complementing the federal program with a state program that covers public-sector

[1] I note that the Environmental Defense Fund made its own calculation of the number of restricted/unrestricted approvals since July 2018 here: http://blogs.edf.org/health/2019/03/15/busting-industry-perpetrated-myths-about-new-chemicals-and-worker-protection-under-tsca/ . EDF claims that there have been 75 decisions since July 2018, and that 62 were approvals without restrictions (83%). So my calculation of 30/35 above (86%) is quite similar in verifying that the rate of unrestricted approvals has skyrocketed since July 2018, but I am not able at this time to explain why I found fewer decisions of either type during this time period than EDF did.

employees only. In addition, I would emphasize that in addition to public-sector workers who might respond to an oil spill, OSHA also cannot protect other categories of exposed workers, including "independent contractors" and unpaid volunteers. Nevertheless, all these cleanup personnel are exposed to safety hazards, and health hazards including respiratory toxicants, heat stress, dermal irritation, and exposure to pathogens.

b. Should EPA do more to address risks to workers from dispersants?

RESPONSE:

I do believe that EPA should do much more to reduce worker and bystander exposures to dispersants, and should consider under TSCA restricting the use of formulations and ingredients in dispersants that are particularly hazardous and for which safer alternatives exist that have similar or greater efficacy in removing spilled oil. In particular, the main ingredient in many dispersants, 2-butoxyethanol (also known as EGME, or ethylene glycol monobutyl ether) is an animal carcinogen and possible male reproductive toxicant. I would encourage EPA to add EGME to its list of 20 high-priority chemicals for TSCA risk evaluation; I don't have sufficient familiarity with all 20 of the substances EPA identified last month to suggest which, if any, are less urgent than EGME, but I would suggest that production volume alone may be misleading as to how much human exposure (particularly to workers) there is to each chemical. Some of the substances in EPA's list of 20 are produced and reacted in closed systems, whereas chemical dispersants are the epitome of substances whose exposure is uncontrolled when used for the intended purpose.

Congress should also encourage EPA to analyze the comments received in 2015 on its proposed rule to expand testing requirements for dispersants used in the National Contingency Plan (Docket EPA-HQ-OPA-2006-0090); this action is languishing and should be finalized.

7. EPA regulation of 1-bromopropane – Do you have concerns that EPA's actions on 1-bromopropane are failing to protect workers?

RESPONSE:

I have serious concerns that EPA's *inactions* on 1-bromopropane (1-BP) are failing to protect workers, and the general public as well. EPA has to my knowledge taken no action of any kind to protect anyone from 1-BP; its only rulemaking involved *approving* it in 2007 as an acceptable substitute for some ozone-depleting chemicals (https://www.epa.gov/snap/snap-regulations#pane-12). EPA has published two documents about 1-BP under the Lautenberg Act: a "scope of the risk evaluation"

document in June 2017, and a "problem formulation" document in May 2018. Of course, neither of these publications does more than sketch out how the Agency will *later* conduct exposure, risk, and feasibility assessments, none of which it has yet done.

Even these preliminary documents send some troubling signals. For example, the 2018 document promises to examine OSHA workplace sampling data for 1-BP from 2013-2016—but I have already submitted to EPA (see comments attached to this response, which if possible I'd like included in the hearing record) a much larger dataset containing all the OSHA data from *1998* to 2016 (and I have recently added to it data from 2016 through 2018). That document also makes some unusual claims about exposure pathways that EPA will choose to ignore in its subsequent analyses. For example: (1) EPA states that consumers "will avoid" 1-BP for engine degreasing because it is too expensive, which is a behavioral-economics claim that is the antithesis of a use that is "reasonably foreseen"; and (2) EPA states that "almost no dry cleaning machines would use 1-BP by 2020," which if true would indicate that a use ban on this highly emissive application (the most dangerous application for workers) would impose "almost no cost" on industry and therefore should be considered, not excluded prior to analysis. The document also lacks an important degree of analytic curiosity: EPA reports that nearly 26 million pounds of 1-BP are produced in or imported into the U.S. annually, and that TRI data document about 1.6 million pounds disposed of or recycled. But the "problem formulation" makes no attempt to account quantitatively for the uses and exposures associated with the other 24.4 million pounds (94% of the total).

And OCSPP's inaction on 1-BP follows a completely perplexing pattern of inaction by the Air Office. Under the Clean Air Act Amendments of 1990, EPA is required to act on a petition to add a substance to the list of 188 Hazardous Air Pollutants (HAPs) within 18 months of its receipt. But an industry group and a state environmental agency petitioned EPA in *2010 and 2011* to add 1-BP to the HAPs list, and EPA has not yet acted one way or the other. The CAAA states that EPA *"shall"* add an air pollutant to the HAPs list when it is found "to cause, or reasonably be anticipated to cause, adverse human health effects." There is absolutely no scientific doubt that 1-BP is a HAP; it has been known since before 2000 to be a human neurotoxin, and has been known since 2008 to be a potent multi-site, multi-species rodent carcinogen. Indeed, several global manufacturers ceased producing 1-BP as long ago as 2001 because of its neurological and reproductive effects. EPA's continued refusal to grant these petitions is, both scientifically and legally, completely indefensible.

In more than 30 years conducting and reviewing (and promulgating as part of federal regulations) quantitative risk assessments, I have never encountered human exposures so far in excess of levels known to cause toxicity and carcinogenicity as I have seen with 1-BP. We know that concentrations of roughly 1 part per million (ppm) have

caused neurological deficits in workers, and we know that long-term exposure to 62.5 ppm has caused up to an 800 percent excess of tumors over controls in animal cancer bioassays. Therefore, EPA would normally consider reducing the risks of 1-BP exposure to humans in concentrations as low as 1 part per *billion*, as EPA strives to reduce exposures with an ample margin of safety below known effect levels (for non-carcinogens), and to roughly 1/1000 or less of the levels that cause dramatic excesses in tumors in bioassays. Even the Threshold Limit Value for 1-BP, set without regard to carcinogenicity, is currently 0.1 ppm.

But the OSHA data are unequivocal that for the past 20 years, U.S. workers have been exposed to 1-BP concentrations *exceeding the 62.5 ppm level,* and thus also far above the 1 ppm level of concern for neurotoxicity. The dataset I submitted to EPA in 2017 shows that the *average* 1-BP concentration in workplaces OSHA has visited is roughly 30 ppm, and that nearly 15 percent of all samples taken have exceeded 62.5 ppm. In other words, EPA for the past 40 years has used reliable methods of *extrapolating below harmful levels* to estimate risk; here exposures persist that are clearly *above* known hazardous levels, and so any risk assessor can estimate the degree of risk by *interpolating within observed adverse-effect data.*

My greatest concern about how EPA may continue to delay and mishandle analysis and action on 1-BP comes from May 2016 testimony I analyzed in my comments to EPA (see pp. 9-11 of those comments), in which Nancy Beck (then at the American Chemistry Council, now OCSPP Deputy Assistant Administrator) offered a litany of incorrect statements in an attempt to exculpate 1-BP from all evidence-based concerns about its carcinogenicity and other harmful effects. At the time, I requested that EPA's Air Office consider allowing Dr. Beck to play no part in the HAPs listing decision on 1-BP because of her obvious blind spot with respect to its hazards; now, of course, OCSPP is the primary decision point for TSCA determinations about 1-BP, and I renew and redouble my concern. My expert opinion is that there may be chemicals for which a conventional quantitative risk assessment (using linear extrapolation for cancer risk somewhat below the observed-effect range, and using various "safety factors" below the frank-effect level for non-carcinogenic endpoints) is not reasonable and might be too "conservative." These departures from standard practice should be made when compelling evidence exists (or can be marshaled without unreasonable delay) that a different mode of action (MOA) applies and would predict lower or zero risk. *1-BP is not such a case*—no credible evidence refuting a linear MOA has been presented, and as I've explained above, no extrapolation is needed to see that current occupational levels are far too high—but inexplicably, one of OCSPP's chief decision-makers has already decided to the contrary. (I have no difficulties with a decision-maker who has formed strong opinions about a substance, regulation, or policy before s/he takes office, when those opinions are supported by some sensible theory or evidence).

8. During the hearing, you referred to a comment made by Bill Wehrum on the risks to workers from silica dust.

    a. Was the comment you referred to a direct quote?

    RESPONSE:

Yes, in my written testimony and in response to a question from Rep. Soto, I quoted directly a sentence offered by Mr. Wehrum. Here is his entire paragraph from a publicly-available oral argument (see response to 8b below), with the sentence I quoted in italics:

> "We believe there's a disease mechanism that amply explains the existence of a threshold, which is: people are designed to deal with dust. *People are in dusty environments all the time and it doesn't kill them.* And part of the reason why is that the lung has a mechanism available to it to grab onto the dust and to eventually remove it from the lung, or to encapsulate it in a way that is not harmful."

    b. When and where was that comment made? Is there a public record of the comment?

    RESPONSE:

Mr. Wehrum offered these objections to OSHA's March 2016 Final Rule establishing controls on silica exposures in the workplace, at an oral argument in front of the U.S. Court of Appeals, DC Circuit, on September 26, 2017. Mr. Wehrum was acting as the lead attorney for several of the industry petitioners opposed to the standard, including the National Stone, Sand, and Gravel Association. The entire oral argument is available online at https://www.cadc.uscourts.gov/recordings/recordings2018.nsf/FBB1D597702702BE852581A70057DDFE/$file/16-1105.mp3; the paragraph I quote above can be found at 8:00 minutes into the mp3, lasting until 8:28. The Dec. 22, 2017, unanimous decision of the DC Circuit rejecting this argument (and all the other industry arguments in this case) can be found online at https://www.cadc.uscourts.gov/internet/opinions.nsf/03C747A5AB141C90852581FE0055A642/$file/16-1105-1710179.pdf .

c. Why were you concerned by this comment?

RESPONSE:

I was concerned about the unscientific, and in my opinion cavalier, statements Mr. Wehrum made, and I appreciate the opportunity to expand briefly about my basis for characterizing the statements in that way (in order of their appearance in his legal argument above):

- It is highly misleading, especially in a regulatory or judicial proceeding, to posit the "existence of a threshold" for a toxic effect without giving any mention of *at what dose* that threshold might occur. It puts scientists in the position of appearing to be disputing the existence of a threshold, when in fact all we might want to dispute is whether there is any evidence or theory whatsoever that the threshold happens to fall exactly in the region of exposure that might make the setting or lowering of a specific permissible exposure limit (PEL) too "conservative." While OSHA was seeking to reduce the silica PEL from the old 100 $\mu g/m^3$ standard to 50 $\mu g/m^3$, the only possible importance of a threshold would have been if it happened to fall between those two exposure values. The possible existence of a threshold at 25, or at 0.0025, $\mu g/m^3$ could be of scientific interest but would not change at all the assumed risk-reduction benefits of moving from 100 to 50. Saying "there must be a threshold somewhere" is like saying "it's impossible to die from falling off a one-inch-high platform"—that may well be true, but it's of little comfort to someone who would prefer to be exposed to a 10-foot drop rather than 20.

- The italicized portion I quoted from Mr. Wehrum's testimony completely misunderstands the nature of risk itself, and is offensive to anyone whose loved one was among the thousands each year who *do* die prematurely from dust exposure. The essence of something risky is that it harms or kills *some* of those who face it, but not all of them (that would be called "certainty," not "risk"). So the existence of some people who face the risk and are fortunate to survive or be unharmed *in no way* negates the probability that others will be harmed. Most of us stopped arguing decades ago that an anecdote about someone who smoked cigarettes all their life and died of another cause casts any doubt on the general relationship between smoking and cancer.

- The human lung does have a mechanism to remove dust particles (mucociliary clearance), but again, all that says is that it's possible to completely negate the otherwise harmful effects of *some* low exposure to dust, not that clearance can solve all ills at any dose, in any person. First, every human being is genetically and environmentally unique, which means that clearance, repair, and other compensatory mechanisms vary in strength and speed across the population. There probably is a

"threshold" for most people in terms of the number of aspirin tablets one can safely ingest—but while some people can take several aspirin every day with no risk, anyone on blood thinners ought not to. And specifically with respect to silica, there is no evidence, and very little theory, to support the premise that clearance can negate the *carcinogenic* risk (as opposed to the risk of silicosis, a non-malignant lung disease). If a particle of silica dust damages DNA and begins the carcinogenic process, it matters not if that particle *subsequently* is "grabbed" and removed.

- The lung also has mechanisms that encapsulate dust and make it *more* harmful by so doing. Chronic beryllium disease, for example, kills its victims precisely because the immune response to that toxicant is more dangerous than the metal itself.

d. Did you refer to this comment to characterize Bill Wehrum in his prior professional capacity or to raise a concern about EPA's handling of worker risks?

RESPONSE:

I referred to Mr. Wehrum's comment to express concern about EPA's understanding of, and attitude towards, worker risks. Although Mr. Wehrum did not receive confirmation by the Senate to his current post (head of the EPA Office of Air and Radiation, which along with the Office of Chemical Safety and Pollution Prevention has EPA's greatest opportunity to protect, or not protect, U.S. workers) until November 9, 2017, several weeks after the oral argument occurred, at the time of the argument Mr. Wehrum was already the nominee for his current position, and was awaiting a Senate confirmation hearing that occurred merely eight days after the oral argument. Therefore, in my view his remarks about silica are relevant both to assess his understanding of basic scientific concepts—an understanding he brought to EPA several weeks later—and to assess the perspectives and biases a nominee for a pivotal EPA position would express publicly while awaiting confirmation.

As the March 13 hearing was ending, Rep. Shimkus "cautioned" me from the dais against "impugning Mr. Wehrum, [who] is not here to defend himself." I was not permitted any time to respond to this accusation, but I hope it was clear that I was criticizing a set of remarks, not the character or the work of someone I have never met. I regret if my dismay at his testimony came across as accusatory. However, as a private citizen (albeit a former career federal executive), I didn't think it appropriate or necessary to refrain from answering a Member's direct question about a political appointee's public statements merely because that appointee is not in the room; along

with the other expert witnesses, I traveled to D.C. at the Committee's invitation to provide information and perspective. But I would welcome the opportunity to discuss with Mr. Wehrum and/or anyone on the Committee the merits of his scientific, legal, and policy positions about worker protection, at any time and place.

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