UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

ORAL ARGUMENT REQUESTED

PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

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INTRODUCTION

The First Amendment protects both the right to speak and the right *not* to speak. The Supreme Court created a limited exception to this rule in *Zauderer v. Office of Disciplinary Counsel*, 471 U.S. 626 (1985), allowing governments to require companies to deliver specific messages to consumers only if the messages are (1) purely factual, (2) uncontroversial, (3) related to the terms under which services are being offered, and (4) not unduly burdensome. If a government-mandated message fails any part of that test, then it is subject to normal First Amendment scrutiny for content-based laws. Courts applying this framework repeatedly have held that government-mandated warning labels are unconstitutional if they require anything more than the straightforward presentation of facts or if the existence of the underlying risk is debatable.

This case is being brought by trade associations representing companies in broad segments of the American economy to challenge a regulation proposed by the New Mexico Environment Department ("NMED") and adopted by the New Mexico Environmental Improvement Board ("EIB"). *See* NMAC § 20.13.2.13 (the "Regulation"). The Regulation compels Plaintiffs' member companies to mark products that contain *any* amount of *any* per- or poly-fluoroalkyl substances, or "PFAS," with an image of an Erlenmeyer flask labeled "PFAS":

This pictographic warning label is not "purely factual," but instead is designed to invoke fear of chemicals. The supposed dangers of PFAS about which the label warns are not "uncontroversial." For many PFAS, the warning has nothing to do with alleged risks posed to consumers themselves. And compliance with the mandate will be incredibly burdensome on Plaintiffs' member

companies—financially, reputationally, and by forcing companies to deliver a message with which they disagree. The Regulation therefore fails the *Zauderer* test and is unconstitutional.

By this motion, Plaintiffs are asking the Court to enjoin enforcement of the Regulation well in advance of its January 1, 2027 compliance deadline, before Plaintiffs' member companies must incur hundreds of millions of dollars in unrecoverable compliance costs. Each prong of the four-factor test for preliminary injunctive relief is satisfied here.

First, Plaintiffs are likely to succeed on the merits. PFAS are a broad category comprising thousands of very different substances that are commonly found in a wide number of products, including razor blades, non-stick cookware, water-resistant fabrics, home appliances, vehicles, air conditioners, power tools, medical devices, consumer electronics, and cosmetics. While health and environmental concerns have been raised for *some* types of PFAS, the evidence does not support such concerns for all types of PFAS. Despite this, the labeling mandate applies to products with *any* type of PFAS in *any* amount, and whether or not consumers are exposed to the PFAS.

The labeling mandate does not come close to satisfying the *Zauderer* standard. First, the pictograph does not convey "purely factual" information—commercial-scale factories do not use Erlenmeyer flasks. The pictograph instead is designed to incite consumers' fears, by exploiting a belief that chemicals are dangerous. Indeed, while countless other products contain man-made chemical substances, Plaintiffs cannot find *any* mandate imposed by *any* government with respect to *any* other chemical that it be called to consumers' attention with an Erlenmeyer flask. Many consumers will therefore understand the label to be a warning that, among the universe of chemicals, all PFAS are *especially* dangerous in some unspecified way.

Second, whether PFAS *as a category* pose heightened risks to which consumers should be alerted is far from "uncontroversial." While manufacturers have phased out some PFAS materials,

fluoropolymers such as polytetrafluoroethylene ("PTFE") are widely and safely used in consumer products as diverse as non-stick cookware and razor blades. There is no scientific consensus that fluoropolymers pose any risk to human health or the environment. And NMED officials have acknowledged that the science with respect to many other PFAS, such as certain newer-generation PFAS, is at best nascent. New Mexico's first of its kind mandated warning applicable to all PFAS thus rests on an intensely disputed scientific foundation.

Third, the mandated warning is not tied to the terms under which companies are offering products to consumers. Forced to concede during the rulemaking that not all PFAS in all products pose direct risks to consumers, NMED officials pivoted to arguing that fluoropolymers, and PFAS inside a product, pose a risk to the environment during product manufacturing and disposal. But the evidence does not support that claim, because modern controls at factories and incinerators can keep PFAS releases to a *de minimis* amount. Manufacturing may occur in states and countries far from New Mexico consumers, so that hypothetical environmental concern does not relate to the transaction between manufacturers and consumers. And concerns about *disposal* have nothing to do with the manufacturers who are subject to the Regulation.

Fourth, the burden that the Regulation will impose on Plaintiffs' member companies is staggering—likely hundreds of millions of dollars or more. The Regulation requires that products themselves be labeled, and in many cases requires the packaging to be labeled too. Companies will need to retool manufacturing lines producing thousands or millions of products per day to change existing labels or to add new labels. And because many of these companies have national or global distribution networks, they will need to do this for *all* the PFAS-containing products they make, not just those that find their way to New Mexico. Companies also will bear the burden of communicating a controversial message—that all PFAS are dangerous—with which many

fundamentally disagree.

Because the Regulation fails under *Zauderer*, it can survive only if it is narrowly tailored to further a compelling or substantial governmental interest. It is not. Courts considering similar state warning labels have noted that governments can communicate their concerns to consumers through government websites, public service announcements, and other media. Other states have enacted far less onerous labeling requirements for PFAS, which further shows that New Mexico's mandate fails the narrow-tailoring standard. And NMED has no good explanation why the consumer-facing labeling mandate must cover products that pose no risk to consumers, such as products with only fluoropolymers or PFAS to which consumers are not exposed.

The remaining factors also strongly favor preliminary injunctive relief. "The loss of First Amendment freedoms, for even minimal periods of time, unquestionably constitutes irreparable injury." *Elrod v. Burns*, 427 U.S. 347, 373 (1976). It also will be disruptive and expensive for Plaintiffs' member companies to retool their factories to create products and packaging bearing the confusing mandated warning label by the January 1, 2027 deadline. New Mexico, on the other hand, has no legitimate interest in enforcing a law that is likely unconstitutional. And the requested injunction would not bar New Mexico from making its own statements concerning PFAS.

Plaintiffs and their member companies share a commitment to making safe, environmentally-responsible products. But the EIB greatly overstepped the bounds here. The Court should quickly enjoin enforcement of the Regulation's labeling mandate while this case is pending. At a minimum, it should enjoin enforcement of the Regulation as to products containing only fluoropolymers or PFAS to which consumers are not exposed.

BACKGROUND

I. PFAS IS A BROAD CATEGORY ENCOMPASSING SUBSTANCES USED IN MANY EVERYDAY PRODUCTS WITH NO ESTABLISHED HEALTH RISK.

PFAS is a catchall term for a broad category of substances with diverse physical, chemical, and toxicological properties. *See* Korzeniowski Decl. ¶ 17. The term has several different definitions, ranging from broad definitions that capture more than 14,000 substances, to more precise definitions that encompass as few as hundreds of substances. *See id*. ¶ 21. In its most general definition, this class of substances is characterized simply by the presence of covalent bonds between carbon and fluorine atoms, the strongest single bond in organic chemistry. *See id.* ¶ 18. This strong bond imparts a combination of properties, including thermal stability, corrosion-resistance, and water and grease repellency, making PFAS uniquely useful across industries worldwide. *See id.* ¶ 19.

Many applications of PFAS "involve highly technical materials that serve as critical enablers of industries underpinning modern life." Korzeniowski Decl. ¶ 20. "In numerous contexts—such as healthcare, energy systems, transportation, electronics, and other infrastructure—these substances are essential to safety, durability, or performance, and viable alternatives are not reasonably available without compromising function or introducing other risks." *Id*.; *see also, e.g.*, Espinoza Decl. ¶¶ 7–8.

There is ongoing scientific debate regarding the toxicity and bioaccumulation of certain types of PFAS, leading companies to phase out the use of those PFAS. *See* Rackl Decl. ¶¶ 34, 51-52; Korzeniowski Decl. ¶ 45. But other types of PFAS are not associated with such concerns. Experts have acknowledged the diversity of PFAS with respect to properties, behavior, hazards, and risks and agree that statements suggesting all PFAS are bioaccumulative and toxic are overgeneralized. Rackl Decl. ¶¶ 51-52. Most experts "agree that PFAS should not be grouped

together for risk assessment purposes" and further agree "that it is scientifically inappropriate to assume equal toxicity/potency across the diverse class of PFAS." Korzeniowski Decl. ¶ 33.

For example, fluoropolymers are a subcategory of PFAS that includes materials such as PTFE. Fluoropolymers like PTFE are used in a wide range of consumer products, such as non-stick cookware, razor blades, and many others. Rackl Decl. ¶¶ 39-40, 43; Bhalla Decl. ¶¶ 15-16. In addition, PTFE has been used in medical devices implanted into humans since the 1950s, including devices like stents and pacemakers. U.S. Food and Drug Administration ("FDA"), *PFAS in Medical Devices* (Aug. 6, 2025). Fluoropolymers are chemically and toxicologically distinct from other PFAS. *See* Rackl Decl. ¶¶ 26-28, 34, 38-40, 45. Fluoropolymers are high-molecular-weight substances; are not bioavailable, toxic, bioaccumulative, mobile, water-soluble, or volatile; and so do not share the same hazard or exposure profiles as some other PFAS. *See* Korzeniowski Decl. ¶ 52; Rackl Decl. ¶¶ 38, 47. Experts consider fluoropolymers to be of low concern for human health and the environment. *See* Rackl Decl. ¶¶ 38-40, 47. Further, fluoropolymers do not degrade into other types of PFAS that may be toxic or bioaccumulative. *See id.* ¶¶ 28, 41, 49.

Some products contain PFAS that are entirely enclosed or sequestered within the product. *See* Rackl Decl. ¶¶ 41, 45-46. These sequestered PFAS pose no meaningful risk to human health or the environment. *See id.* ¶¶ 19-21.

International and federal entities, such as the Organisation for Economic Co-operation and Development ("OECD") and the Department of Defense, have advised against broad-brush approaches to regulating PFAS. Snyder Decl., Ex. 11, at 8; *id.*, Ex. 12, at 16. The FDA has recognized that fluoropolymers specifically "are very unlikely to cause toxicity to patients." *Id.*, Ex. 13. And the U.S. Environmental Protection Agency ("EPA") has stated that fluoropolymers are "believed to pose less risk to human and ecological health relative to

nonpolymer PFAS." *Id*., Ex. 14, ¶ 3.1.2.

II. NEW MEXICO PFAS PROTECTION ACT AND CHALLENGED REGULATION

A. The New Mexico Legislature imposes a ban on many PFAS, while authorizing the EIB to require labeling.

In April 2025, New Mexico enacted the Per- and Poly-Fluoroalkyl Substances Protection Act (the "PFAS Act"). NMSA 1978, § 74-15-3. The PFAS Act's core feature is a phased ban on the sale, offering for sale, and distribution for sale of products containing certain types of intentionally-added PFAS, which begins in January 2027 and is completed by 2032. *Id*. § 74-15-3; NMAC § 20.13.2.9(C). But the ban is not universal. The PFAS Act exempts many types of products from the ban. As particularly relevant to this litigation, the PFAS Act exempts any "product that contains fluoropolymers," such as PTFE. NMSA 1978, . § 74-15-3(A)(16).

The PFAS Act delegates rulemaking authority to the EIB, providing, in most relevant part, that the EIB "may" "adopt rules … requiring the labeling of products in English and Spanish." NMSA 1978, § 74-15-4(B). The Act also authorizes enforcement mechanisms, including steep civil penalties, for each day a violation occurs. *Id.* § 74-15-7.

B. The EIB imposes a sweeping labeling mandate.

In October 2025, NMED petitioned the EIB to adopt a proposed rule mandating labeling of products containing intentionally-added PFAS. Snyder Decl., Ex. 1. The proposed rule did not differentiate between PFAS or provide the same exemptions as the statutory ban, so the labeling mandate applies to products containing any kind of PFAS, including fluoropolymers. *Id*. § 20.13.2.6. Under the initially proposed rule, any product sold, offered for sale, distributed or distributed for sale in New Mexico containing any intentionally-added PFAS would need to include "words and symbols approved by [NMED] that the product contains intentionally added per- and poly-fluoroalkyl substances." *Id*., § 20.13.2.13(C)(1). As initially proposed, consumer-

facing products also would need to provide a link to an NMED website stating NMED's anti-PFAS views. *Id*., § 20.13.2.13(C)(3).

Many trade associations and others submitted comments in response to NMED's proposed rule. *See generally* EIB Dkt. No. 25-61(R), *available* at https://www.env.nm.gov/opf/docketed-matters/ ("EIB Docket"). They explained that there are many types of PFAS with different properties, and they do not all pose risks to human health or the environment. *See generally, e.g.,* Snyder Decl., Ex. 2 at 2 (ACC comment). Imposing a labeling mandate for *all* types of PFAS, commenters explained, would create costly and complex challenges for manufacturers, while forcing them to label their products with warnings falsely and controversially signaling that all PFAS are dangerous. *See*, *e.g.*, *id*.

NMED issued revisions to the proposed rule in January 2026 and again a month later. *See id.*, Ex. 3; *id.*, Ex. 4. The amended proposal dropped the website requirement, but included a mandate that covered products be labeled with a pictograph comprising "an outline of an Erlenmeyer flask with the word 'PFAS' inside the flask." *Id*., Ex. 4 § 20.13.2.13(C)(1). According to NMED, it made this change in response to industry comments. *Id*., Ex. 5 at 9-10.

Trade associations again commented on the revised proposal, explaining that it still did not address their concerns about requiring manufacturers to warn that all PFAS are dangerous. *See generally* EIB Docket. During an evidentiary hearing before the EIB, industry organizations presented evidence regarding the scientific community's lack of a consensus view as to what even constitutes PFAS, as well as the wide body of scientific literature demonstrating that certain PFAS, like fluoropolymers or PFAS entirely sealed within a product, pose little to no risk to human health or the environment. *See* Snyder Decl., Ex. 9, at 1225, 1237, 1272, 1285.

In testimony before the EIB, NMED witnesses admitted that "[t]he vast majority of PFAS

have not been studied at all," and that the study of PFAS "continue[s] to evolve as additional data becomes available." *Id.*, Ex. 7 at 383; *id.*, Ex. 6 at 301. NMED witnesses further admitted that "[i]f there is zero exposure" to PFAS from a product then "there is zero risk." *Id.*, Ex. 7 at 430. But they insisted the labeling mandate was needed because no PFAS exposure supposedly is safe, and fluoropolymers and even fully-sequestered PFAS still posed environmental risks from upstream manufacture or downstream disposal. *Id.*, Ex. 6 at 118-19. Multiple NMED witnesses therefore urged the EIB to adopt the labeling mandate "to turn off the spigot at the source of PFAS entering New Mexico through consumer products." *Id.* at 81-82; *see also id.* at 52-53, 60, 104, 106, 109, 111, 129, 165, 166, 224-25; *id.*, Ex. 8 at 792, 795. According to NMED, the PFAS warning label will "empower consumers to choose to reduce their exposure and environmental release." *Id.*, Ex. 5 at 29. Regarding use of the flask symbol specifically, NMED witnesses said they believed it "will convey the message that there is a chemical that goes by the acronym or initials 'PFAS' in this product," and that it "would be an excellent element that would convey to the consumer that there is a chemical that they might want to know about," *id.*, Ex. 7 at 630, 632.

In May 2026, the EIB adopted a final version of the Regulation, requiring manufacturers to label numerous categories of products containing any amount of any PFAS, even in purely internal components, with the Erlenmeyer flask pictographic warning. NMAC § 20.13.2.13(C)(1). The EIB explained that it had explicitly considered and determined that "PFAS should be regulated as a class." Snyder Decl., Ex. 10 ¶ 78 (EIB Final Order and Statement of Reasons). The final label mandate includes only narrow exemptions for complex durable goods, used products, and certain products regulated by federal labeling requirements. NMAC § 20.13.2.13(B).

The Regulation provides that the label must be "printed, mounted, molded, engraved, embossed, or otherwise affixed to the product." *Id.* § 20.13.2.13(C)(2). And "[i]f the product is

sold in consumer packaging that obscures the label on the product," the product packaging must "also" be labeled. *Id.* § 20.13.2.13(C)(3). The Regulation also imposes size specifications. The label must be "clearly visible and legible prior to sale" and "displayed with such conspicuousness as compared with other words, statements, design or devices on the product as to render the label likely to be seen, read, and understood by an ordinary individual under customary conditions of purchase or use." *Id.* § 20.13.2.13(C)(1). The label's text must "be no smaller than the largest font used for other consumer information on the product." *Id.*

The Regulation also includes labeling requirements that apply when a consumer cannot see the product or packaging at the time of sale, such as when products are sold online. *See id.* § 20.13.2.13(C)(4). In those circumstances, the manufacturer or retailer must "clearly" present the Erlenmeyer flask pictograph to the consumer at the time of purchase by, for example, including the pictograph on the website. *Id*. And the Regulation includes a separate, but similar, labeling requirement for what it calls "complex commercial goods." Manufacturers of those goods must include the Erlenmeyer-flask pictograph in the consumer facing product specification sheet available to potential consumers prior to purchase, and the consumer facing operation and maintenance manual associated with the complex durable good. *Id.* § 20.13.2.13(D).

The labeling mandate becomes effective on January 1, 2027. *Id.* § 20.13.2.13(A). Starting then, any product sold, offered for sale, distributed, or distributed for sale in New Mexico without the mandated label is unlawful and will be subject to civil penalties of, *e.g.*, $15,000 for each day a violation occurs. N.M. Stat. § 74-15-7. NMED and the New Mexico Attorney General are responsible for enforcing the Regulation. NMAC § 20.13.2.23; N.M. Stat. § 74-15-7.

LEGAL STANDARD

"To obtain a preliminary injunction, the moving party must demonstrate: (1) a likelihood

of success on the merits; (2) a likelihood that the movant will suffer irreparable harm in the absence of preliminary relief; (3) that the balance of equities tips in the movant's favor; and (4) that the injunction is in the public interest." *Att'y Gen. of Okla. v. Tyson Foods, Inc.*, 565 F.3d 769, 776 (10th Cir. 2009) (quotation marks omitted). When a state agency is the defendant, the third and fourth factors "merge." *Rocky Mtn. Gun Owners v. Polis*, 121 F.4th 96, 112 (10th Cir. 2024).

ARGUMENT

I. PLAINTIFFS ARE LIKELY TO SUCCEED ON THE MERITS.

Under the First Amendment, "[c]ontent based laws—those that target speech based on its communicative content—are presumptively unconstitutional." *Reed v. Town of Gilbert*, 576 U.S. 155, 163 (2015). This rule applies to commercial speech: "The commercial marketplace, like other spheres of our social and cultural life, provides a forum where ideas and information flourish," and "[t]he State may not burden the speech of others in order to tilt public debate in a preferred direction." *Sorrell v. IMS Health Inc.*, 564 U.S. 552, 578-79 (2011) (quotation marks omitted).

The First Amendment "includes both the right to speak freely and the right to refrain from speaking at all." *Wooley v. Maynard*, 430 U.S. 705, 714 (1977). Indeed, laws that compel speakers to communicate a message raise particularly serious First Amendment concerns, because they are inherently content-based. *See Janus v. Am. Fed'n of State, Cnty., & Mun. Emps., Council 31*, 585 U.S. 878, 892 (2018). The Supreme Court has recognized a limited exception for laws that compel commercial speech, but *only* if the disclosure is limited to "purely factual and uncontroversial information about the terms under which … services will be available." *Zauderer*, 471 U.S. at 651. If a law satisfies those conditions, there is no First Amendment violation, provided the compelled disclosures are not "unjustified or unduly burdensome." *Id.* By contrast, if the mandated commercial speech falls outside the *Zauderer* exception, then it is subject to heightened scrutiny, which requires the government to show, at a minimum, that the law is narrowly tailored

to directly advance a substantial government interest. *See Free Speech Coalition, Inc. v. Paxton*, 95 F.4th 263, 283 (5th Cir. 2024).

New Mexico's mandate that products with any intentionally-added PFAS include a pictograph of an Erlenmeyer flask labeled "PFAS" does not meet the requirements for the *Zauderer* exception. That is fatal to the State's case, because the mandate fails any level of First Amendment scrutiny. Plaintiffs are therefore likely to succeed in their claim that the mandate is facially unconstitutional. At a minimum, the mandate is clearly unconstitutional as applied to products containing only fluoropolymers or PFAS to which consumers are not exposed.

A. The Regulation does not satisfy any elements of the *Zauderer* test.

For the State to rely on *Zauderer*, it must show that the compelled disclosures are "purely factual and uncontroversial," relate to "the terms under which" services are provided, and are not unduly burdensome. 471 U.S. at 651. The State has the burden to justify compelling commercial speech. *See Ibanez v. Fla. Dep't of Bus. & Pro. Regul., Bd. of Acct.*, 512 U.S. 136, 142-43 (1994). Here, the Regulation satisfies none of the *Zauderer* conditions.

1. The required pictograph does not convey purely factual information.

The narrow *Zauderer* exception is built on the premise that, since the value of commercial speech inheres in "the information such speech provides" to consumers, the government has greater leeway to compel a company to provide consumers "purely factual and uncontroversial information about the terms under which [its services] will be available." *Zauderer*, 471 U.S. at 651. Thus, in *Zauderer*, the Court upheld a requirement that attorney advertising disclose that clients could be liable for costs after an unsuccessful contingent-fee action, explaining that a requirement to provide "accurate information regarding [an attorney's] services" was "reasonably related to the State's interest in preventing deception of consumers." *Id.* & n.14.

Critically, "[t]he disclosures approved in *Zauderer*" and other Supreme Court precedents

have been "clear statements that were both indisputably accurate and not subject to misinterpretation by consumers." *R.J. Reynolds Tobacco Co. v. FDA*, 696 F.3d 1205, 1216 (D.C. Cir. 2012). Courts have recognized that even if a compelled disclosure is "factually accurate," "a statement may be literally true but nonetheless misleading." *Nat'l Ass'n of Wheat Growers v. Bonta*, 85 F.4th 1263, 1276 (9th Cir. 2023) (quotation marks omitted). Courts therefore do not review compelled messages in isolation, but rather "consider whether the totality of the disclosure is misleading." *Ass'n of Home Appliance Mfrs. v. Weiser*, 2025 WL 4642378, at *6 (D. Colo. Dec. 19, 2025). They exercise care not to "miss[] the forest for the trees" in assessing "the overall message" conveyed. *Pers. Care Prods. Council v. Bonta*, 799 F. Supp. 3d 1075, 1085-86 (E.D. Cal. 2025) (quotation marks omitted). And they have explained that graphic warnings raise particular concerns, since they may serve as attempts to "evoke an emotional response" rather than merely convey unbiased information. *See R.J. Reynolds*, 696 F.3d at 1216.

Applying those principles here, the mandated pictograph of an Erlenmeyer flask labeled "PFAS" does not present "purely factual" information. *Zauderer*, 471 U.S. at 651. No manufacturer is making products at commercial scale using Erlenmeyer flasks, and there is scientific debate about what substances even qualify as PFAS. Korzeniowski Decl. ¶ 21. NMED witnesses in the EIB proceeding tried to sidestep this debate by noting that the PFAS Act contains its own definition of PFAS. Snyder Decl., Ex. 6 at 161-63. But courts have rejected this argument—a government cannot sidestep factual debates by definitional *diktat*, particularly as consumers are unlikely to know obscure governmental definitions. *Kimberly-Clark Corp. v. Dist. of Columbia*, 286 F. Supp. 3d 128, 142 (D.D.C. 2017); *Nat'l Ass'n of Mfs. v. SEC*, 800 F.3d 518, 530 (D.C. Cir. 2015).

Rather than convey purely factual information, the label conveys a *warning*: this product

contains a chemical known as PFAS that, more than other chemicals, should concern you. Wilcox Decl. ¶ 29. After all, consumers are accustomed to seeing pictographic *warnings* on products: a skull and crossbones for poison, or a stylized fire for something flammable or explosive. *See id.* ¶ 31. Many consumers are therefore likely to assume that the Erlenmeyer flask is a warning. *Id*. ¶ 29, 31. On top of this, many consumers will be familiar with Erlenmeyer flasks from chemistry classes in school, where they learned that chemicals are potentially dangerous—*e.g.*, they may be caustic, warranting the use of safety goggles and gloves. *Id*. ¶ 29. Consumers also know that many consumer products contain chemicals of one kind or another, but only PFAS is being singled out for their attention with the Erlenmeyer flask pictograph. *Id*. ¶¶ 31, 40. Many consumers will therefore assume that PFAS must be unusually dangerous, and that is why it, alone in the universe of chemicals, is being called to their attention with the flask graphic. *Id*. ¶¶ 31-33.

Recognizing that the Regulation raises First Amendment issues, NMED witnesses strained during the EIB hearings to contend that the label is "not designed to communicate about hazards," but rather only to note that the product contains "a chemical that goes by the acronym or initials 'PFAS,'" that consumers might want to learn more about. *See* Snyder Decl, Ex. 7 at 618, 630; *id*. at 632 (the label "convey[s] to the consumer that there is a chemical that they might want to know about"); *id.*, Ex. 6 at 110-111 (similar). For the reasons given above, that testimony does not pass the straight face test. New Mexico does not require the Erlenmeyer flask graphic for any other chemical on the neutral theory that consumers "might want to know about" it. The flask is plainly designed as a warning about the presence of PFAS. Research also shows that consumers are quick to make in-store purchasing decisions for everyday products. Wilcox Decl. ¶¶ 12, 16-17. A consumer picking up a product with the PFAS pictographic warning will not stand in the aisle doing research on PFAS and their highly varying properties. *Id*. ¶¶ 17, 28-29. Confronted with a

warning label on a product, consumers will quickly make a gut decision whether to purchase that product or an alternative lacking the warning label. *Id*. ¶¶ 18-19.

Because "it is reasonable for the average consumer" to read the pictograph as communicating a hazard, it cannot be characterized as "purely factual." *Pers. Care Prods.*, 799 F. Supp. 3d at 1086-87. Indeed, the Erlenmeyer flask itself does not even convey *any* actual "information," because it says *nothing* about the risk PFAS supposedly poses. Wilcox Decl. ¶¶ 28-29. A consumer seeing the label will have no idea whether PFAS are supposedly toxic, flammable, explosive, environmentally deleterious, or present some other risk of harm entirely. *Id*. ¶¶ 27, 37. They will only assume it poses some unspecified risk of harm. *Id*. ¶ 38. For this reason, it is clear that the flask image is designed to invoke fear in consumers, not to educate them. *See id*. ¶¶ 38, 42, 44-45. That is fatal under *Zauderer*. Other courts have recognized that images are vulnerable to "misinterpretation by consumers," as they work in part by "evok[ing] an emotional response" rather than merely providing neutral, factual information. *R.J. Reynolds*, 696 F.3d at 1216-17 (holding that the use of graphic images to supplement warning statements "fall outside the ambit of *Zauderer*"). That is the whole purpose of graphic labels: to "create a visceral reaction." *Disc. Tobacco City & Lottery, Inc. v. United States*, 674 F.3d 509, 528-29 (6th Cir. 2012) (Clay, J., dissenting in part).

The lack of any real information in the flask image is especially problematic when it comes to fluoropolymers like PTFE or to PFAS to which a consumer will not be exposed. At the EIB hearing, NMED witnesses conceded that fluoropolymers and sequestered PFAS pose no direct risk to consumers. *See* Snyder Decl., Ex. 7 at 416-17, 430. But they argued that the warning label is still justified, because other types of PFAS may either escape the factory when products are made, or from an incinerator when products are destroyed. *See id.* at 436-37. Putting aside that those

propositions are debatable, *see infra*, pp. 16-18, nothing in the Erlenmeyer flask pictograph tells a consumer what kind of PFAS is present, where, or what type of risk it poses. A consumer might reasonably assume that the product carries the warning label because it poses a direct risk to them, even if that is not the case. Wilcox Decl. ¶¶ 27-38. This risk of consumer confusion is fatal under *Zauderer's* "purely factual" requirement. *See Wheat Growers*, 85 F.4th 1263, 1278; *Cal. Chamber of Com. v. Council for Educ. & Rsch. on Toxics* ("*CERT*"), 29 F.4th 468, 472-73, 479 (9th Cir. 2022).

The origin of the Erlenmeyer flask mandate also is revealing. Under NMED's initially proposed rule, there was no required graphic, but products instead needed to provide directions to an NMED website attacking PFAS. *See supra*, pp. 7-8. In an apparent acknowledgement the website provision was patently unconstitutional, *see Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *7, NMED dropped that provision but added the Erlenmeyer flask graphic in its place. Snyder Decl., Ex. 6 at 113-14. But that change did not cure the basic First Amendment problem: pictographic warnings that suggest to consumers that a product poses some unspecified risk because it contains any kind of PFAS anywhere in the product are not "purely factual."

2. The science concerning the risks posed by all PFAS is at best unsettled.

The Regulation also fails *Zauderer* because the required warning message is not "uncontroversial." *See* 471 U.S. at 651. "A compelled statement is 'uncontroversial' for purposes of *Zauderer* where the truth of the statement is not subject to good-faith scientific or evidentiary dispute and where the statement is not an integral part of a live, contentious political or moral debate." *Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *6 (alteration and citation omitted)). By contrast, "controversy" exists where an "objective evaluation" demonstrates that there is "robust disagreement by reputable scientific sources." *Wheat Growers*, 85 F.4th at 1277 (quoting *CERT*, 29 F.4th at 478). If there is no "strong scientific consensus" to support a warning

label, then the label fails under *Zauderer*. *Id.* at 1278.

Here, the scientific evidence concerning PFAS as a class is unsettled at best. The evidence shows that PFAS widely vary in their characteristics and they have not all been shown to pose risks, whether to human health or to the environment, yet the Regulation requires them all to carry the identical "PFAS" pictographic warning. As recounted above, both international organizations and the federal government agree that broad generalizations about PFAS should not be used to make regulatory decisions. *See supra*, pp. 6-7. In the specific case of fluoropolymers, for example, the available evidence strongly suggests that their use in products presents little to no risk to human health and the environment. *See* Rackl Decl. ¶¶ 38-40. FDA has continued to approve the use of fluoropolymers in medical devices embedded in patients. Snyder Decl., Ex. 7, at 390. Many experts also have concluded that because fluoropolymers are chemically and biologically inert, they pose little risk of contaminating the environment. *See* Rackl Decl. ¶¶ 20-21, 38.

At the EIB hearing, NMED witnesses debated whether fluoropolymers are actually safe, suggesting the science is not yet settled on this point. *E.g.*, Snyder Decl., Ex. 6 at 90, 116. But even if NMED is correct that the science around fluoropolymers is uncertain, that *uncertainty* does not help Defendants, because it means that the question is not "uncontroversial." Korzeniowksi Dec. ¶¶ 38-46; Rackl Decl. ¶¶ 32-35. Under *Zauderer*, the existence of this scientific debate means the government cannot require third parties to communicate the government's preferred viewpoint. If the government wants to present its position concerning an unsettled scientific topic to consumers, then it must do so itself.

NMED witnesses also opined at the EIB hearing that even if fluoropolymers do not themselves pose a risk, other PFAS may be used during the manufacture of fluoropolymers or generated during their disposal, and these other PFAS could escape into the environment from

factories and incinerators. Snyder Decl., Ex. 7, at 416-17. They opined similarly about PFAS within a product to which consumers are not exposed. *Id*., Ex. 6 at 119. But these assertions are also contested. Modern emissions controls at factories result in, at worst, only a negligible amount of PFAS entering the environment, if any at all. Rackl Decl. ¶¶ 53-55. And modern incinerators are capable of destroying up to 99.9999% of PFAS in products, to keep it from entering the environment. *Id*. ¶ 54. Thus, to the extent NMED intends the Erlenmeyer flask symbol to convey to consumers that the manufacture and disposal of the product pose environmental concerns, that message too is far from "uncontroversial."

3. *Zauderer* does not permit the State to compel speech premised on impacts disconnected from the service provided to the consumer.

Defendants may try to argue that the labeling mandate is supported by the alleged manufacturing (upstream) and disposal (downstream) impacts of PFAS. But the alleged upstream and downstream impacts of PFAS cannot support the Regulation because messaging on such topics falls outside the *Zauderer* framework entirely.

In applying *Zauderer*, the Supreme Court has instructed that the doctrine only applies to speech relating to "the terms under which … services will be available." *Nat'l Inst. of Fam. and Life Advocs.*, 585 U.S. 755, 768 (2018) ("*NIFLA*") (quoting *Zauderer*, 471 U.S. at 651). The doctrine provides no basis for a government to use a company as its mouthpiece for other concerns, even if factual. In *NIFLA*, for example, the Court held that clinics providing services to pregnant women could not be required to post notices regarding the availability of free or low-cost services provided by the State, including abortions. *Id.* at 775. Among other problems with the law, the Court explained that because the mandatory notice "in no way relates to the services that licensed clinics provide," "*Zauderer* ha[d] no application." *Id.* at 769. "[O]utside that context," a "speaker

has the right to tailor [its] speech," including to omit "statements of fact the speaker would rather avoid." *Hurley v. Irish-Am. Gay, Lesbian & Bisexual Grp. of Bos.*, 515 U.S. 557, 573 (1995).

Put simply, the *Zauderer* exception exists to ensure that consumers receive accurate information related to their transactions, and nothing more than that. Here, the alleged upstream and downstream environmental impacts on which NMED witnesses relied do not concern the transaction between Plaintiffs' member companies and consumers, within the meaning of precedents such as *Zauderer* and *NIFLA*. Those alleged upstream and downstream impacts sometimes involve third parties—manufacturers of components containing intentionally-added PFAS and the emissions controls *they* used at *their* factories to prevent PFAS from escaping into the environment. Those impacts may be based on hypothetical, future events—how some third party *might* dispose of the product, and again what emissions controls they might use. Those impacts, which are the subject of regulation and oversight in the relevant jurisdictions, are simply too far afield from consumer transaction in question to allow New Mexico to invoke them as the basis for a labeling requirement. *Zauderer* does not allow the EIB to force Plaintiffs' member companies to warn consumers about these potential upstream and downstream issues.

4. The Regulation is unduly burdensome.

Finally, the Regulation fails to satisfy *Zauderer* because it imposes undue burdens on Plaintiffs' members and other regulated entities. "Even under *Zauderer*, a disclosure requirement cannot be 'unjustified or unduly burdensome.'" *NIFLA*, 585 U.S. at 776 (quoting *Zauderer*, 471 U.S. at 651). "[A] government-compelled disclosure that imposes an undue burden fails for that reason alone." *Am. Beverage Ass'n v. City & Cnty. of S.F.*, 916 F.3d 749, 757 (9th Cir. 2019).

Here, the Regulation imposes staggering "implementation costs and competitive ramifications" that "exceed constitutional boundaries." *Iowa Ass'n of Bus. & Indus. v. Ommen*, 799 F. Supp. 3d 795, 851 (S.D. Iowa 2025). As detailed in the accompanying declarations from

some of Plaintiffs' member companies, it will be extraordinarily expensive, disruptive and time-consuming for those companies to come into compliance with the Regulation's labeling mandate. *See* Bhalla Decl. ¶¶ 22-30; Yon Decl. ¶¶ 12-19; Hall Decl. ¶¶ 14-22; Bowers Decl. ¶¶ 15-20; Thompson Decl. ¶¶ 10-20; Espinoza Decl. ¶ 11. Modern product manufacturers use highly automated systems which move products smoothly and automatically through each step of the manufacturing process and often directly into packaging and off for shipment. *E.g.*, Bhalla Decl. ¶ 22. For a product that was *itself* not previously labeled—for which all labeling was provided on the associated packaging—the new labeling mandate will require completely reworking manufacturing lines to add a new labeling step. *E.g.*, *id.* ¶¶ 22-27; Hall Decl. ¶¶ 15-18. For products that were previously labeled, the mandate will still require manufacturers to rework molds, dies, and etching machinery to add the new pictographic warning to the existing label. *E.g.*, Thompson Decl. ¶ 12-13. For products on which the new pictographic warning does not easily fit, the product itself may need to be altered in dimension or layout to accommodate the label. *E.g.*, *id*. And where permanent solutions to all this cannot be implemented by January 1, 2027, manufacturers will need to quickly introduce disruptive, temporary solutions. *E.g.*, Bhalla Decl. ¶ 27. Many of these problems are then repeated for those manufacturers who must also include the mandated warning on their product packaging. *E.g.*, *id.* ¶¶ 28-30; Thompson Decl. ¶¶ 14-16.

The burden the Regulation imposes on manufacturers is multiplied by the fact that many companies operate with national and global supply chains, or sell to major retailers with national and global distribution chains. A manufacturer may make a product and sell it to a major retail chain not knowing whether the retailer will ship that specific product to Santa Fe, New Mexico; Rancho Santa Fe, California; or the Santa Fe district of Mexico City, Mexico. *E.g.*, Bhalla Decl. ¶¶ 31-33; Bowers Decl. ¶ 23; Yon Decl. ¶ 18. For such companies, the only way to avoid the fines

imposed by the Regulation may be to label *all* their products with New Mexico's mandated label. *E.g.*, Thompson Decl. ¶¶ 17-20; Yon Decl. ¶ 19.

The cost of this for Plaintiffs' member companies and other regulated entities will likely stretch into the hundreds of millions of dollars or more. NMED's witness in the EIB proceeding conducted a survey of literature concerning labeling compliance costs for genetically-engineered foods, and opined that median estimates of compliance costs *for that one industry alone* were about $2.30 per consumer. *See* Snyder Decl., Ex. 7 at 602. Because the Regulation will result in many affected companies changing their labeling on a nationwide basis, that alone suggests compliance costs approaching $1 billion. And that estimate was just for the food industry, whereas the Regulation impacts each of the highly varied industries represented by the Plaintiff trade associations (and more besides). The declarations from companies filed in support of this motion, suggesting compliance costs in the tens of millions of dollars for even a single company, confirm the immense financial burden the regulation will impose. *E.g.*, Bhalla Decl. ¶ 30.

Even beyond the cost of coming into compliance, the Regulation is certain to impose ongoing losses on Plaintiffs' member companies. As discussed above, the pictographic warning is clearly designed to trigger an emotional reaction in consumers with the intent of causing them not to purchase the labeled products. *See supra*, pp. 13-16. Hence, the Regulation requires Plaintiffs' member companies to include a message that actively turns consumers *against* those companies' own products and potentially toward their competitors' products, leading to lost sales.

Relatedly, the Regulation's requirement that the Erlenmeyer flask label be included on websites imposes its own set of burdens. Many manufacturers and retailers maintain a single website page for items. As a result, retailers generally display California's Proposition 65 warnings nationwide, rather than only to consumers in California. *See, e.g.*, Hall Decl. ¶ 17. Complying

with the Regulation's online labeling mandate would therefore require displaying the Erlenmeyer flask label to any consumer nationwide who views a covered product, not just consumers in New Mexico. Consumers outside New Mexico will have even less context for understanding the label than consumers in New Mexico.

These burdens are fatal under *Zauderer*. But accepting, for sake of argument, NMED's assertion that the pictograph is not even meant to be a warning (*see supra*, p. 14), makes the imposition of these burdens on manufacturers all the more unreasonable. American industry should not be required to incur hundreds of millions of dollars in compliance costs for the purpose of neutrally informing consumers that their products contain a chemical they might just want to learn more about. *Supra*, p. 14. The *Zauderer* exception does not exist so that governments can impose tremendous costs on companies to satisfy consumers' mere curiosity.

*****

For all these reasons, Defendants cannot show that the Regulation's labeling mandate fits within the *Zauderer* exception. New Mexico cannot force Plaintiffs' member companies to spend hundreds of millions of dollars relabeling their products to communicate a controversial warning based on unsettled science with which many of the member companies fundamentally disagree.

B. The Regulation cannot survive First Amendment scrutiny.

As a form of compelled speech that does not satisfy the *Zauderer* standard, the Regulation's labeling mandate is subject to strict scrutiny. *See Disc. Tobacco City & Lottery, Inc.*, 674 F.3d at 554; *Ent. Software Ass'n v. Blagojevich*, 469 F.3d 641, 652 (7th Cir. 2006); *Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *6. At a minimum, the Regulation faces intermediate scrutiny under *Central Hudson Gas & Electric Corp. v. Public Service Commission of New York*,

447 U.S. 557 (1980).[1] Yet the Regulation comes nowhere close to satisfying either form of scrutiny. Indeed, in the Proposition 65 context, courts have uniformly struck down labeling mandates after determining they do not qualify under *Zauderer*. *See, e.g.*, *Wheat Growers*, 85 F.4th at 1282-83; *CERT.*, 29 F.4th at 480; *Pers. Care Prods. Council*, 799 F. Supp. 3d at 1094-95; *Cal. Chamber of Com. v. Bonta*, 781 F. Supp. 3d 1071, 1088-89 (E.D. Cal. 2025).

A law survives strict scrutiny only "if the government proves that [it is] narrowly tailored to serve compelling state interests." *NIFLA*, 585 U.S. at 766. And under the intermediate scrutiny test, the government must show that the regulation "directly advances" a "substantial" government interest and "is not more extensive than is necessary to serve that interest." *Central Hudson*, 447 U.S. at 566. Even that test "is significantly more stringent than *Zauderer*'s standard," including because the government bears the burden of proof under any form of heightened scrutiny. *R.J. Reynolds*, 696 F.3d at 1212, 1218; *see also Brewer v. City of Albuquerque*, 18 F.4th 1205, 1221 (10th Cir. 2021) (the government "bears the burden of making the requisite narrow tailoring showing" under intermediate scrutiny). Under either form of scrutiny, the government "must demonstrate that the harms it recites are real and that its restriction will in fact alleviate them to a material degree." *Aptive Env't, LLC v. Town of Castle Rock*, 959 F.3d 961, 987-89 (10th Cir. 2020).

The Regulation fails to satisfy either standard. To start, Defendants cannot identify a compelling or substantial interest in requiring products containing *any* type of PFAS *anywhere* in the product to bear the mandated warning. The prospect that a State interest in safety or

[1] Mandated commercial speech that falls outside the *Zauderer* exception is subject to strict scrutiny as a content-based restriction. *See NIFLA*, 585 U.S. at 766. Some courts have concluded that compelled commercial speech that does not qualify for the *Zauderer* exception is evaluated under *Central Hudson* intermediate scrutiny instead. *See Wheat Growers*, 85 F.4th at 1282; *R.J. Reynolds*, 696 F.3d at 1217. That is wrong because "*Central Hudson* only applies to speech restrictions and not compulsions." *Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *6.

environmental protection is advanced by this categorical requirement is "purely hypothetical," not "potentially real." *NIFLA*, 585 U.S. at 776. As noted above, NMED has admitted that "the vast majority of PFAS have not been studied at all." *Supra*, pp. 8-9. Moreover, there is no evidence of material risk associated with some broad categories of PFAS like fluoropolymers, and NMED agreed that PFAS within a product do not endanger consumers. *Supra*, pp. 9, 17-18. Therefore, on the evidence, the mandated warning label does not solve "an actual concrete problem." *Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *9 (citation omitted). Nor can the label mandate be justified on the basis of a putative neutral interest in encouraging New Mexico's citizens simply to learn more about PFAS. It is doubtful such an interest would qualify as compelling or substantial, and regardless, New Mexico "has not provided a shred of evidence" showing that the Erlenmeyer flask symbol will "directly advance" that interest. *R.J. Reynolds*, 696 F.3d at 1219.

New Mexico also could pursue its objectives in a more targeted fashion. It could require a warning only for products with PFAS demonstrated to directly harm consumers. New Mexico also could rely on its own "advertising campaign" about PFAS without conscripting product manufacturers to serve as the State's mouthpiece. *Wheat Growers*, 85 F.4th at 1283; *see also NIFLA*, 585 U.S. at 775; *Kimberly-Clark Corp.*, 286 F. Supp. 3d at 145.

"[T]here is no indication the State tried—or even considered—less burdensome alternatives," confirming that the Regulation is not narrowly tailored. *Ass'n of Home Appliance Mfrs.*, 2025 WL 4642378, at *10. For example, NMED never evaluated the "cost to implement the Labeling portion" of the rule, Snyder Decl., Ex. 8 at 838, and its labeling expert professed ignorance about whether there were other "mechanisms through which the State could provide information about the contents of PFAS product, *see id*., Ex. 7 at 646 ("I don't really feel like I can speak to other methods of communication."). "That the [State] barely considered less-restrictive

means—if it considered them at all—merely underscores the fact that the [State] did not meaningfully tailor" the Regulation to any substantial interest. *Brewer*, 18 F.4th at 1226.

The absence of tailoring is further underscored by the sweeping nature of New Mexico's approach compared to those of other jurisdictions. Only a minority of states (13) have any laws specifically addressing PFAS, and just three (California, Connecticut, and Colorado) have adopted any sort of labeling mandate. *See* Cal. Health & Safety Code § 109011; Colo. Rev. Stat. § 25-15-604; Conn. Gen. Stat. § 22a-903c. Those states limited their labeling mandates to narrower product categories than New Mexico did. *See* Cal. Health & Safety Code § 109011(a); Colo. Rev. Stat. § 25-15-604(2)(a); Conn. Gen. Stat. § 22a-903c(c)(1). And none of those states requires the inclusion of anything like the Regulation's pictographic warning. Rather, they require only disclosure of the presence of PFAS in a product. *See* Cal. Health & Safety Code § 109011(a); Colo. Rev. Stat. § 25-15-604(2)(a), (2.5); Conn. Gen. Stat. § 22a-903c(c)(3). Moreover, California and Colorado explicitly exempt products that are too small to accommodate a label and do not have exterior packaging that can be labeled. *See* Cal. Health & Safety Code § 109011(c); Colo. Rev. Stat. § 25-15-604(2)(c). The EIB was apprised of these alternative approaches and never explained why they are insufficient. *See, e.g.*, Snyder Decl., Ex. 8 at 956. The State's failure to "consider[] different methods that other jurisdictions have found effective" confirms a lack of narrow tailoring. *McCullen v. Coakley*, 573 U.S. 464, 495 (2014).

II. THE REMAINING FACTORS SUPPORT PRELIMINARY INJUNCTIVE RELIEF.

Because Plaintiffs are likely to succeed on their claim that the Regulation violates the First Amendment, the remaining preliminary injunction factors also are readily satisfied. Indeed, "[i]n the First Amendment context, the likelihood of success on the merits will often be the determinative factor because of the seminal importance of the interests at stake." *Verlo v. Martinez*, 820 F.3d 1113, 1126 (10th Cir. 2016) (quotation marks omitted).

A. Plaintiffs' member companies will suffer irreparable harm.

Plaintiffs' member companies will suffer irreparable harm if the Regulation is not promptly enjoined. The Regulation will compel them to speak in violation of their First Amendment rights, and "[t]he loss of First Amendment freedoms, for even minimal periods of time, unquestionably constitutes irreparable injury." *Elrod*, 427 U.S. at 373; *see also Awad v. Ziriax*, 670 F.3d 1111, 1131 (10th Cir. 2012) ("[W]hen an alleged constitutional right is involved, most courts hold that no further showing of irreparable injury is necessary."). This "presumption of irreparable injury" fully applies "in commercial speech cases," if the law results in "the deprivation of … commercial speech rights." *Utah Licensed Beverage Ass'n v. Leavitt*, 256 F.3d 1061, 1076 (10th Cir. 2001).

Preliminary injunctive relief is needed well before January 1, 2027, because of the lead time Plaintiffs' members otherwise will need to come into compliance. As discussed above, it will be extraordinarily expensive for those companies to rework their manufacturing processes, and many may need to institute costly temporary fixes to meet the January 1 deadline. *See supra*, p. 19-22. These costs constitute irreparable harm because, in light of sovereign immunity, Plaintiffs' members will have no way to recover damages from the State even if Plaintiffs prevail. *See Kansas ex rel. Kansas Dep't for Child. & Fams. v. SourceAmerica*, 874 F.3d 1226, 1251 (10th Cir. 2017).

B. The public interest favors a preliminary injunction.

The balance of hardships and the public interest factors "merge" in this case where the Defendants are state actors. *Rocky Mtn. Gun Owners*, 121 F.4th at 112. Those factors support preliminary injunctive relief given Plaintiffs' likelihood of success. "Vindicating First Amendment freedoms is clearly in the public interest." *Pac. Frontier v. Pleasant Grove City*, 414 F.3d 1221, 1237 (10th Cir. 2005); *see also Elam Constr., Inc. v. Reg'l Transp. Dist.*, 129 F.3d 1343, 1347 (10th Cir. 1997) ("[t]he public interest ... favors plaintiffs' assertion of their First Amendment rights."). And "when a law ... is likely unconstitutional, the interests of those the government represents,

such as voters, do not outweigh a plaintiff's interest in having its constitutional rights protected." *Hobby Lobby Stores, Inc. v. Sebelius*, 723 F.3d 1114, 1145 (10th Cir. 2013) (citation omitted).

III. AT A MINIMUM, THE COURT SHOULD ENJOIN THE REGULATION WITH RESPECT TO FLUOROPOLYMERS AND PFAS TO WHICH CONSUMERS ARE NOT EXPOSED

For the reasons given above, the Regulation's labeling mandate is overly broad on its face and should be enjoined in its entirety—no one should be compelled to communicate the controversial message that all PFAS are dangerous. Even if NMED could craft a limited labeling mandate targeting some products containing some types of PFAS, that is not what NMED did and so the entire mandate is unconstitutional. *E.g.*, *United States v. Stevens*, 559 U.S. 460, 473 (2010) ("In the First Amendment context … this Court recognizes a second type of facial challenge, whereby a law may be invalidated as overbroad if a substantial number of its applications are unconstitutional, judged in relation to the statute's plainly legitimate sweep.").

If, however, the Court decides not to enjoin the mandate in its entirety, then it should at least enjoin Defendants from enforcing it as applied to products containing only fluoropolymers and PFAS to which consumers will not be exposed. The New Mexico legislature distinguished between fluoropolymers and other PFAS, when it carved fluoropolymers out of the PFAS Act's statutory ban. *See supra*, p. 7. And NMED witnesses repeatedly conceded before the EIB that fluoropolymers, and PFAS to which consumers are not exposed, do not pose a direct risk to consumers. *See supra*, pp. 8-9. Plaintiffs therefore have a high likelihood of success in challenging the constitutionality of the labeling mandate as applied to products falling in those two categories.

CONCLUSION

Plaintiffs respectfully request that the Court grant their request for a preliminary injunction. At a minimum, the Court should enjoin enforcement of the mandate with respect to products containing only fluoropolymers, or PFAS to which consumers will not be exposed.

Dated: July 1, 2026

Respectfully submitted,

/s/ John C. Anderson

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CERTIFICATE OF SERVICE

I hereby certify that on July 1, 2026, a true and correct copy of the foregoing was electronically filed and served on all parties of record via the Court's CM/ECF system.

/s/ John C. Anderson
John C. Anderson

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATING ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE, *Plaintiffs*, v. JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*, *Defendants*.	Case No.: 1:26-cv-02130

DECLARATION OF CASSANDRA M. SNYDER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, Cassandra M. Snyder, declare as follows pursuant to 28 U.S.C. § 1746:

1. I am an attorney at the law firm of Goodwin Procter LLP, which represents Plaintiffs American Chemistry Council, Alliance for Automotive Innovation, American Coating Association, Association of Home Appliance Manufacturers, National Association of Manufacturers, National Electrical Manufacturers Association, National Federation of Independent Business, New Mexico Retail Association, and Power Tool Institute in the above-captioned action.

2. I submit this declaration in support of Plaintiffs' Motion for Preliminary Injunction.

3. Provided as Exhibit 1 is a true and correct link to *Exhibit B, Proposed New Rule § 20.13.2 NMAC*, *Petition for Regulatory Change to Adopt 20.13.2 NMAC and Request for Hearing* filed in New Mexico Environment Department's ("NMED") Environmental Improvement Board ("EIB") Docket 25-61(R), dated October 8, 2025, and available at https://perma.cc/8BER-RRJ5.

4. Provided as Exhibit 2 is a true and correct link to the American Chemistry Council's comment letter filed in NMED EIB Docket 25-61(R), dated October 22, 2025, and available at https://perma.cc/PY2C-PTBD.

5. Provided as Exhibit 3 is a true and correct link to NMED's *Revised Proposed New Rule 20.13.2 NMAC* filed in NMED EIB Docket 25-61(R), dated January 16, 2026, and available at https://perma.cc/4ZFQ-H6VC.

6. Provided as Exhibit 4 is a true and correct link to NMED's *Rebuttal Proposed New Rule 20.13.2 NMAC* filed in NMED EIB Docket 25-61(R), dated February 16, 2026, and available at https://perma.cc/6UY6-EYLB.

7. Provided as Exhibit 5 is a true and correct link to NMED's *Rebuttal Testimony of Dr. Eric J. Chapman*, filed in NMED EIB Docket 25-61(R), dated February 16, 2026, and available at https://perma.cc/HLC2-8CPA.

8. Attached as Exhibit 6 hereto is a true and correct copy of excerpts of Volume I of the transcript from the evidentiary hearing before the New Mexico Environment Department in the Matter of Proposed Adoption of 20.13.2 NMAC, Per- and Polyfluoroalkly Substances in Consumer Products, EIB 25-61(R), dated February 23, 2026.

9. Attached as Exhibit 7 hereto is a true and correct copy of excerpts of Volume II of the transcript from the evidentiary hearing before the New Mexico Environment Department in

the Matter of Proposed Adoption of 20.13.2 NMAC, Per- and Polyfluoroalkly Substances in Consumer Products, EIB 25-61(R), dated February 24, 2026.

10. Attached as Exhibit 8 hereto is a true and correct copy of excerpts of Volume III of the transcript from the evidentiary hearing before the New Mexico Environment Department in the Matter of Proposed Adoption of 20.13.2 NMAC, Per- and Polyfluoroalkly Substances in Consumer Products, EIB 25-61(R), dated February 25, 2026.

11. Attached as Exhibit 9 hereto is a true and correct copy of excerpts of Volume IV of the transcript from the evidentiary hearing before the New Mexico Environment Department in the Matter of Proposed Adoption of 20.13.2 NMAC, Per- and Polyfluoroalkly Substances in Consumer Products, EIB 25-61(R), dated February 26, 2026.

12. Provided as Exhibit 10 is a true and correct link to the EIB's *Final Order and Statement of Reasons*, filed in NMED EIB Docket 25-61(R), dated April 17, 2026, and available at https://perma.cc/E4YJ-3B27.

13. Provided as Exhibit 11 is a true and correct link to the Organisation for Economic Co-operation and Development's *Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guide*, dated July 9, 2021, and available at https://tinyurl.com/33y86et2.

14. Provided as Exhibit 12 is a true and correct link to the U.S. Department of Defense's *Report on Critical Per- and Polyfluoroalkyl Substance Uses*, dated August 2023, and available at https://tinyurl.com/5d2z8rrp.

15. Provided as Exhibit 13 is a true and correct link to the U.S. Food and Drug Administration's *PFAS in Medical Devices*, dated August 6, 2025, and available at https://tinyurl.com/2s4z3xrs.

16. Provided as Exhibit 14 is a true and correct link to the U.S. Environmental Protection Agency's *Multi-Industry Per- and Polyfluoroalkyl Substances (PFAS) Study - 2021 Preliminary Report*, dated 2021 and available at https://perma.cc/7XXT-9V4E.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief. Executed this 1st day of July, 2026.

By: */s/ Cassandra M. Snyder*
Cassandra M. Snyder

Exhibit 6

BEFORE HONORABLE FELICIA L. ORTH

Deposition of : VOL I HEARING

taken on: February 23, 2026

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STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED ADOPTION OF 20.13.2 NMAC, Per- and Poly-Fluoroalkyl Substances in Consumer Products.	EIB NO.: 25-61(R)

BEFORE THE HONORABLE FELICIA L. ORTH

MONDAY, FEBRUARY 23, 2026

9:04 A.M.

EVIDENTIARY HEARING VOLUME I

CERTIFIED TRANSCRIPT

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I N D E X

Notice had already issued. At that point the parties were already preparing their cases, retaining experts, and developing Testimony based on what the Agency told the public was its technical information. That is precisely the harm the Statute is designed to prevent.

NMED argues that Section 14-4-5.2A(7) establishes only a floor for disclosure, but that argument fails for 3 reasons:

First, it contradicts the plain language of the Statute. The Statute does not require the disclosure of some technical information; it requires disclosure of technical information "... that serve as the basis for the Proposed Rule..."

Second, NMED's interpretation would nullify the Notice requirement entirely.

Third, this reading creates exactly the kind of absurd result the Uniform Statute and Rules Construction

Act forbids; a system where the Agency controls when and whether the public ever sees the real technical justification for the Rule.

The Legislature did not design Public Notice as a sneak peek to the rest of the story, it is supposed to be the full and fair disclosure of the Rule's technical foundation.

NMED also argues that ACC's interpretation of Section 14-4-5.2A(7) renders Section 14-4-5.4 superfluous. It does not. The 2 provisions serve different functions at different stages.

Section 14-4-5.2A(7) governs what must be disclosed before hearing so the public can prepare. Section 14-4-5.4 governs what must be included in the final Rulemaking record reflecting what was ultimately relied upon. Those provisions work together, they are not substitutes for one another.

The prejudice here is not

hypothetical. Once Public Notice issues, parties are immediately constrained by deadlines, expert retention, Testimony preparation, and evidentiary strategy. When the technical basis expands dramatically after Notice to regulated entities, it presents a significant problem.

This is especially problematic in Rulemakings of this scope where technical literature defines the reach of the regulation, including which PFAS compounds were implicated and why. If certain classes of compounds were not supported by disclosed technical information on Notice, the Regulated Parties were entitled to assume those compounds were not within the Rule's intended scope. Late disclosure changes the game midstream. That is not meaningful participation, that is a procedural ambush.

What ACC is and is not asking for, and let me be clear about the remedy ACC seeks:

For now it's denied, but I don't want to suggest to you that these questions have been resolved. We will proceed with the hearing, and I believe the fullness of the record will help the Board make its decisions on these questions, but thank you for that.

All right. Is there anything else before we move to Opening Statements?

No. All right.

Mr. Smithkier, would you like to offer the first Opening Statement as Petitioner, and if you will remember you have 20 minutes.

MR. SMITHKIER: Thank you.

Good morning, Madam Hearing Officer, Chair Ely, and Members of the Board:

My name is Greg Smithkier, and I'm here today on behalf of the New Mexico Environment Department's Office of Strategic Initiatives. I'm joined here today by Christine Keyes, Acting Director of the Office of Strategic

Initiatives, as well as my Co-Counsel Mark Rosebrough and Andrew Knight.

My Co-Counsel and I are here to assist an incredible group of Department staff and experts to put forward explanations and support for this Board to adopt 20.13.2 NMAC, a Rule relating to Per- and Poly-Fluoroalkyl Substances in Consumer Products. This Rule implements the landmark PFAS Protection Act that was signed into law by Governor Luján Grisham on April 8, 2025.

The PFAS Protection Act was a clear directive from the New Mexico Legislature to protect our citizens, our water, and our environment from the forever chemicals known as PFAS.

The ambitious timetable that has been set forth by the Legislature in the implementation of the PFAS Protection Act underscores the urgency of addressing PFAS in consumer products, and this Hearing is an important step towards turning off the spigot of PFAS

in New Mexico.

The first product prohibitions contained in the PFAS Protection Act go into effect on January 21, 2027. Because of that, time is of the essence with respect to adopting a Rule to implement the Act's requirements.

The Rule that NMED has proposed incorporates all the statutorily mandated requirements, and aligns with the Legislature's goals as expressed in the PFAS Protection Act and the recently passed House Joint Memorial 3.

Specifically the Proposed Rule fulfills the requirements of the Legislature that the Board:

1: Adopt rules that detail the information that a manufacturer must report to NMED;

2: Adopt rules to exempt products from the statutory reporting requirements if those products are already exempt under the Act;

3: Adopt rules creating a series of ranges of the amount of PFAS

in a product for reporting purposes unless they are exempt; and,

4: Adopt rules to identify the currently unavoidable uses of PFAS that are essential for health, safety, or the function of society, and for which there are no reasonably available alternatives.

In addition to these requirements, NMED's Proposed Rule requires Labeling of products containing intentionally added PFAS in both English and Spanish as authorized by the Legislature.

The Rule also requires the Labeling of exempt products, which aligns with the will of the Legislature as expressly stated in House Joint Memorial 3, which was passed just last week.

The introduction of a PFAS label for consumer products will allow New Mexicans to make informed decisions with respect to the products that they purchase and bring into

proposed Labeling requirements.
Experts will provide evidence on:
How clear and conspicuous
Labeling influences consumer behavior;
Provides tangible benefits to
consumers; and,
Gives New Mexicans the
transparency that they deserve.
By informing the public about
which products contain intentionally
added PFAS the State can empower
residents to protect their own health
and the environment.
Through this week of Expert
Testimony NMED will prove that this
Rule is a necessary and an overdue
intervention to protect the future of
New Mexico's land, water, and its
people.
The Rule before you today is
a practical balance and legally sound
framework. It fulfills the mandate of
the PFAS Protection Act and honors the
urgency expressed by the Legislature.
By adopting this Rule the Board will

provide the Department with the necessary tools to:

Track these chemicals;

Inform our citizens through transparent Labeling; and,

Ultimately prevent further contamination of the groundwater that 80% of New Mexicans rely on for drinking.

We are not just asking you to adopt the regulation, we are asking you to turn off the spigot of PFAS in New Mexico. We have:

The science to prove the risk;

The Legislative authority to take action; and,

A clear path forward that protects both human health and the environment without placing an undue burden on manufacturers.

On behalf of the New Mexico Environment Department we urge the Board to adopt the Proposed Rule in its entirety.

Thank you for your time and your service to the State of New Mexico.

HEARING OFFICER ORTH: Thank you, Mr. Smithkier.

I realized we did not, in our second Prehearing Conference, arrange the industry parties. Have you decided on an order yourselves that you would like to proceed under?

Mr. Moellenberg.

MR. MOELLENBERG: Thank you, Madam Hearing Officer.

I believe that, with other Counsel's concurrence, American Chemistry Council will go first. We can follow that, of course, with CropLife, and then probably proceed to the Complex Products Manufacturers Coalition.

HEARING OFFICER ORTH: Thank you very much; let's do that.

Will you be offering an Opening Statement at this time or would you like to reserve?

MR. MOELLENBERG: Madam Hearing

institution in Minnesota. I taught over 1,000 students Introductory and Upper-Level Biology courses on Human Impacts on the Environment, with a focus on Chemicals of Emerging Concern including PFAS.

Q. Did you file both Direct and Rebuttal Written Testimony?

A. I did.

Q. Okay.

Do you have any corrections that you would like to make to that Written Testimony?

A. Yes.

I stated that the PFAS Protection Act requires the EIB to adopt rules for testing products for PFAS. To clarify, the Statute requires testing, and authorizes the EIB to adopt rules for testing.

Q. With that noted correction do you adopt that written Testimony as your Testimony here today?

A. I do.

Q. Okay. Can you please provide

a summary of your Written Testimony.

A. I present this Testimony on behalf of the Department in support of the Department's Petition and Rebuttal Rule.

I will provide a high-level overview of the Rule and how engagement with interested parties led to the development of the Rule.

I will also discuss sources of PFAS in the environment;

How consumer products contribute to environmental PFAS contamination and environmental transformation; and,

Transport of PFAS across different media.

My Testimony will show that, once released into the environment, PFAS contamination becomes widespread creating a multitude of indirect exposure pathways that are difficult to remediate.

I will end with a call for adopting the Rebuttal Rule to turn off

the spigot at the source of PFAS entering New Mexico through consumer products.

Q. Why is it important to regulate PFAS in consumer products in New Mexico?

A. One of the many catalysts for New Mexico's actions regulating PFAS is the bioaccumulative persistent and toxic nature of many PFAS.

Another is the extent of contamination, including places such as Holloman Lake, with some of the highest levels of PFAS ever observed in plant and animal tissues globally. Surface water concentrations were measured to be over 100,000 parts per trillion, or 25,000 times the EPA drinking water standard for PFAS. Consuming one gram of duck meat from the lake would exceed the recommended lifetime exposure to PFOS.

Prohibiting consumer products containing PFAS can turn off the PFAS spigot at its source. Consumer

products are a major direct source of PFAS exposure to humans, and an indirect source once released into the environment.

Humans are directly exposed to PFAS in:

Cleaning products;

Cosmetics;

Cookware; and,

Fabric treatments.

The production, use, and disposal of consumer products can result in PFOS emissions that contaminate the environment.

Passive receivers, such as:

Wastewater Treatment Plants;

Wells and septic systems;

Soils from biosolid application; and,

Landfills further spread this contamination to water, soil, and air. Regulating PFAS in consumer products can lessen the burden of contamination by downstream passive receivers.

The PFAS Protection Act allows

released into the environment.

The family contains both non-polymer and polymer PFAS. Within classes there are many subclasses which include:

Per- and poly-fluoroalkyl substances;

Fluoropolymers; and,

Side-chain fluorinated polymers.

For clarity, the PFAS Protection Act provides us with a definition:

> "'PFAS' means a substance in a class of fluorinated organic chemicals containing at least 1 fully fluorinated carbon atom."

Much attention is focused on the non-polymer group of PFAA, containing the subgroup of PFCA and PFSA, because of the well-established detrimental effects of legacy substances such as PFOA and PFOS.

Legacy PFAS are in water, soils, and biological samples including human

tissue, fish, and other foods.

Concerns about legacy PFAS has led to newer classes of alternatives, though there are emerging concerns of this new class. Some alternatives, such as PFNA, show higher toxicity across developmental stages in zebra fish, and can accumulate in plants and animals and food webs. These alternatives illustrate shared concerns across all PFAS, such as persistence, mobility, and potential toxicity.

Q. Can you please tell us a little more about polymeric PFAS?

A. The fluoropolymer subclass may not be as inert as originally understood.

PTFE is a fluoropolymer commonly used in non-stick pans. Exposure to PTFE microplastics and PFAS can occur with food contact products through regular use.

At expected cooking temperatures, PTFE-coated cookware and cooking utensils emit various gases

that can contain PFAS. For instance, emissions of PFCA can reach 12,000 ng/hr.

PFAS are also used during fluoropolymer production, and can expose humans through production, use, and disposal of consumer products.

Additionally, studies stating that fluoropolymers should be considered "polymers of low concern," are authored by representatives from fluoropolymer production companies and contain Conflict of Interest statements.

Q. Can you describe how PFAS' chain length influences transport through the environment?

A. "Chain length" refers to the number of carbon atoms in PFAS and affects movement in the environment.

Long-chain are typically suspended in particular matter or in sediments, whereas short-chain tend to be in the water column.

Long-chain can also aggregate on clay particles, in soil, and

treatment; however, Wastewater Treatment Plants were not historically designed to remove PFAS resulting in PFAS-free release into the environment.

Despite their phaseout and restricted use in the U.S., PFOA is commonly detected in landfill leachate.

Landfills have elevated air concentrations of volatile PFAS. FTOH is the dominant PFAS in landfill gas, with a median concentration of 19,000 ng/m3.

U.S. landfills produce over 800 kilograms per year of PFAS in landfill gases, which is similar to the 600 kilograms per year in leachate from landfills.

Wastewater Treatment Plants serve as passive receivers of environmental PFAS contamination. They enter Wastewater Treatment Plants from:

Industrial waste;

Firefighting waste;

Landfill leachate; and,

Municipal sludge.

Globally Wastewater Treatment Plants have low or even negative removal efficiencies that result in effluent concentrations being higher than influent.

In a global study of Wastewater Treatment Plants researchers found:

Influent concentrations as high as 2,000 nanograms of PFAS per liter;

Effluent concentrations approaching 5,000 ng/L; and,

Biosolids as high as 500,000 ng/g.

Short-chain are prevalent in influent and effluent, and long-chain are dominant in biosolids.

Individual Wastewater Treatment Plants can emit hundreds of pounds of PFAS per year, and ultimately passive receivers spread PFAS contamination far and wide.

Q. Do Wastewater Treatment Plants provide conditions for precursor PFAS transformation?

A. As I mentioned with AFFF, PFAS are subject to transformation in the environment. Wastewater Treatment Plants can be sites of precursor to terminal PFAS transformation. The negative removal efficiencies of PFAS in Wastewater Treatment Plants are a result of these transformation processes.

This slide highlights precursor to intermediate and terminal product transformations through different matrices and conditions in Wastewater Treatment Plants.

Through no fault of their own, Wastewater Treatment Plants passively receive PFAS, and can even increase levels released into downstream environments, which is another reason we need to turn off the spigot of PFAS in New Mexico.

Q. How does PFAS contamination impact water?

A. PFAS are widespread and are circulated through the globe's

hydrological cycle. PFAS enter the atmosphere from industrial emissions, dust, and when surface water is aerosolized, and PFAS may be redeposited through either wet or dry deposition.

Rainwater contains both legacy and emerging short-chain PFAS, and can transport PFAS over long distances. Stormwater runoff can also contribute to surface water contamination.

PFAS contamination in surface water is widespread. Concentrations can vary up to 8 orders of magnitude at our highest sites near industrial and manufacturing facilities. PFAS in urban watersheds can be over 2,000 ng/L, or 500 times the EPA limit for PFOA and PFOS.

Surface water PFOS can move to: Sediment;

Animal tissue; or,

Groundwater depending on the chain length.

PFAS can accumulate in

groundwater downstream from Wastewater Treatment Plants.

Air/water interface absorption can control long-chain transport to groundwater. Absorption and transformation can alter the movement of precursors into downstream groundwater.

PFAS transformation increases mobility and lowers the absorption potential, which increases transport to groundwater. Further, soil microbes can mediate PFAS transformation, which can explain fluorinated intermediaries that are not often measured at contaminated sites.

The widespread distrubution and movement of PFAS through global hydrological cycle is another reason to turn off the PFAS spigot at its source.

Q. Will you please tell us about PFAS in soil.

A. PFAS are found in soils globally, and cycle through: Soil

microbes;
Plants; and,
Terrestrial food webs.
Soils can be contaminated with:
AFFF;
Manufacturing plants;
Biosolids, and,
From atmospheric deposition.
Hydrogen bonding;
Hydrophobic interactions;
Ligand exchange; and,
Electrostatic attraction
influence how PFAS move in soil.
Electrostatic attraction
between positive soil particles and
negatively charged constituents in PFAS
leads to PFAS soil retention.
Soils high in organic matter
are negatively charged, and can inhibit
sorption of anionic PFAS, which results
in transport.
PFAS movement in surface and
groundwater, soils, and sediment is
highly dependant on site-specific
factors including: Soil properties;

pH;

Temperature; and,

PFOS type.

Indirect exposure pathways through soil represent another justification to stem the flow of PFAS into the environment.

Q. Can you please tell us about PFAS and dust.

A. PFAS distribution in dust is also widespread. Sand and dust storms contribute to PFAS dust generation and are affected through: Anthropogenic land use;

Properties of soil;

Types of vegetation; and,

Climate.

Sources include: Fire stations;

Military bases and other aviation sites;

Fluoro-chemical manufacturing plants;

Indoor dust in landfills;

Wastewater Treatment Plants;

and,

Road dust.

Landfills can also be a significant source of PFAS dust from discarded products such as carpets. Biosolid generation and subsequent land application can also generate PFAS dust from dust storms.

Q. Can you please end with providing context for the importance of the Rebuttal Rule?

A. The Rebuttal Rule reflects a balance between:

Human and environmental health;

Interested party concerns; and,

Statutory mandates.

My Testimony provides the technical basis for turning off the PFAS spigot at its source. PFAS contamination becomes more diffuse, leading to challenges with containment and remediation, and highlighting the importance of stemming the flow of PFAS into the State.

Prohibiting consumer products

containing PFAS is a practical and technically feasible way to:

Reduce difficult-to-remediate PFAS contamination;

Decrease PFAS movement through plants, animals, and humans; and,

One of the only ways to realistically decrease PFAS exposure.

When House Bill 212 passed the New Mexico House of Representatives 62 to 1;

The Senate 37 to 3; and,

Governor Lujan Grisham signed PFAS Protection Act into law, our State leaders took unified and decisive action to protect New Mexicans and our environment from PFAS in consumer products.

Adopting the Rebuttal Rule will implement the PFAS Protection Act and tackle environmental contamination at the source. The Rule empowers consumers to learn more about PFAS from a simple Erlenmeyer flask symbol and optional non-controversial statements

of fact disclosing the presence of PFAS.

We can turn off the PFAS spigot from consumer products. I respectfully encourage the EIB to adopt the Rebuttal Rule.

HEARING OFFICER ORTH: At this point, Mr. Smithkier, before you move into Rebuttal, I think it would be good to take a break.

MR. SMITHKIER: Thank you, Madam Hearing Officer.

HEARING OFFICER ORTH: Were you about to do that?

MR. SMITHKIER: I was.

HEARING OFFICER ORTH: Okay. Let's take 15 minutes and come back at 10:50.

(The Evidentiary Hearing recessed from 10:35 a.m. to 10:52 a.m.)

HEARING OFFICER ORTH: All right. We are back after a short break, and Dr. Chapman has returned to the witness seat.

Mr. Smithkier, I believe you

are about to lead him through his Rebuttal Testimony. You have 15 minutes.

MR. SMITHKIER: Thank you, Madam Hearing Officer.

Q. Dr. Chapman, how does your Direct Testimony relate to your Rebuttal Testimony, and what is the purpose of your Rebuttal Testimony?

A. Do we have the slideshow going?

Q. It's on my screen; let me...

Is the slideshow sharing?

MR. LOPEZ: Counsel, I don't see you on the WebEx platform any more.

MR. SMITHKIER: I'm showing I'm on the WebEx platform, buy I can log out and log back in.

MS. JONES: I see him on.

MR. LOPEZ: Okay. Counsel, you should be able to get in now; sorry about that.

Q. BY MR. SMITHKIER: Dr. Chapman, how does your Direct Testimony relate to your Rebuttal Testimony, and what is

the purpose of your Rebuttal Testimony?

A. The overall message of my Direct Testimony was that the full environmental impact of a consumer product with PFAS must consider PFAS emissions from production, use, and disposal.

The purpose of my Rebuttal Testimony is to provide the Board with an overview of revisions in the Proposed Rule since filing on January 16, and to address environmental science claims in the Direct Written Testimony provided by the Complex Products Manufacturers Coalition, or CPMC, and the American Chemistry Council.

Q. Has the Department continued to engage with interested parties?

A. Yes, engagement continued in the lead-up to the Rulemaking Hearing, which shaped important revisions in the Rebuttal Rule. Most notably, the Department removed language about the health and environmental effects on the

proposed Label, and removed a link to the Department's website.

The Rebuttal Rule proposes to require a symbol of an Erlenmeyer flask with the word "PFAS" inside. Directly adjacent are optional non-controversial statements of fact, such as "Made with PFAS" or "Contains PFAS." This Label revision honors the statutory definition and simply states whether a consumer product contains PFAS.

Q. Did you review the Technical Testimony of Dr. Stanton and Ms. Marrapese?

A. Yes.

Q. Did you identify any inaccuracies with their Direct Written Testimony?

A. Yes.

Q. Can you please describe for us the inaccuracies that you identified?

A. Overall Dr. Stanton's Testimony is sparse, overly general, and ignores environmental realities. Most

glaringly this Testimony ignores that PFAS emissions from consumer products occur from product manufacturing, use, and disposal. The brief Testimony argues that, as a class, PFAS are not harmful and:

"... nor are they 'forever chemicals.'"

First, this downplays the common phrase in the popular press with the biochemical reality that PFAS are subject to degradation and are not truly "forever."

This also acknowledges that PFAS are subject to environmental transformation, which may lead to the generation of particularly harmful PFAS.

Additionally PFAS, as a class, do have shared characteristics such as persistence and varying levels of mobility, which contributes to environmental concerns.

Dr. Stanton adopts a narrow view of environmental release of PFAS

in fluoropolymers. Dr. Stanton states: "Fluoropolymers are an entirely separate entity."

As defined by Statute, fluoropolymers are PFAS. The claim that insolubility in water means that they cannot contaminate the environment is false. If you think of microplastics for instance, it shows that polymeric PFAS persist in the environment.

It also ignores that another polymeric PFAS -- side-chain fluorinated polymers -- can transform into the persistent group of PFAA.

Finally, fluoropolymers can also emit PFAS, such as the highly persistent and mobile trifluoroacetic acid, or TFA, during thermal processing and incineration. Biothermal stability and insolubility in water are not magical properties that exempt fluoropolymers from contaminating the environment.

Dr. Stanton's Testimony also

ignores that PFAS emissions from fluoropolymer production contaminates the air, soil, and water. The European Chemicals Agency proposes to restrict all PFAS, demonstrating that there is sufficient concern to regulate PFAS as a class, which contradicts Dr. Stanton's Testimony.

Dr. Stanton's discussion on Labeling of complex durable goods also contains various inaccuracies:

First, the Rebuttal Rule does not require the vehicle to be labeled, only the owner's manual.

Second, Dr. Stanton ignores that complex durable goods with internal components can contain consumer-facing PFAS, such as vehicle seats.

Third, the Label provisions in the Rebuttal Rule do not "... communicate hazard...," as she states. The proposed Labeling program provides consumers with a simple symbol such that the consumer can choose to bring

that product into their home.

Finally, Dr. Stanton states:

"Requiring all PFAS-containing products to include a Label suggesting that they pose such risks is inaccurate, or at the very least the subject of ongoing scientific research and debate, as even the Physical Impact Report to HB 212 acknowledges."

One can see, given a more thorough reading, the proper interpretation of the Physical Impact Report to HB 212 is that there is no level of exposure to PFAS that can be considered safe.

Like Dr. Stanton, Ms. Marrapese attempts to minimize the environmental risks associated with PFAS in consumer products. Ms. Marrapese generalizes across all complex durable goods that components are: Sequestered inside;

Removed from consumer exposure; and,

Safe from environmental release.

This assumes that all PFAS are only contained in internal components. This also completely ignores the environmental contamination pathways from production to disposal of a product.

Electronic waste can be a significant source of PFAS emissions into the environment, leading to the contamination in: Water;

Soil;

Leachate;

Human blood; and,

Rainwater.

As an example, recycling emissions from vehicles can be as high as 5,000 micrograms of PFAS per kilogram of vehicle residue. As well, Stormwater related to vehicle recycling can emit 520 nanograms of PFAS per liter of water, which is over 100 times higher than the EPA drinking water standard for PFOA and PFOS.

Q. Did you review the Technical

Testimony of Dr. Korzeniowski?

A. Yes.

Q. Did you identify any inaccuracies in his Direct Written Testimony?

A. Yes.

Q. Can you please describe for us the inaccuracies that you identified?

A. The Direct Testimony from the American Chemistry Council makes erroneous claims that:

The Department treats all PFAS the same;

Narrowly focuses on polymers; and,

Ignores PFAS emissions throughout a product's life cycle.

The 3-page Direct Testimony of Dr. Steven Korzeniowski, an Organic Chemist for PFAS manufacturer DuPont for the majority of his career, claims that the Proposed Rule treats all PFAS the same.

First, it is clear from the exemptions provided in the PFAS

continue.

A. Okay.

The Testimony I rebut makes narrow, inaccurate, and unsubstantiated claims. They argue that the Department treats all PFAS the same while ignoring product exemptions, CUUs, and pathways for Labeling exemptions. They narrowly focus on fluoropolymers and ignore PFAS emissions that occur during: PFOS production;

Consumer product manufacturing;

Product use; and,

Product disposal.

PFAS transforms in the environment resulting in indirect exposure pathways in the air, dust, water, and soil.

One could argue that the Testimony for ACC and CPMC treat all PFAS the same;

That all PFAS is "of low concern";

That PFAS exposure results only from direct consumer contact with a

product during use;

You can ignore PFAS emissions during a product's life cycle; and,

The Department should not impose Labeling requirements on consumer products containing PFAS.

The Department has engaged in good-faith collaborations with interested parties resulting in the Rebuttal Rule for the EIB's consideration. It is my hope that the Board adopts the Rebuttal Rule in order to turn off the PFAS spigot from consumer products.

Requiring simple labels on consumer products will allow consumers to choose whether they purchase products containing PFAS. Help New Mexico empower consumer choice to reduce their exposure and environmental release by adopting the Rule for PFAS Labeling.

Turning off the spigot today will help relieve the long-term burden faced by our State's largely rural

infrastructure that provides New Mexicans with clean and safe water.

MR. SMITHKIER: Thank you, Dr. Chapman.

HEARING OFFICER ORTH: Thank you, Mr. Smithkier.

We will move to questioning of Dr. Chapman.

Mr. Moellenberg, would you like to go first?

MR. TRUJILLO: Madam Hearing Officer, I will be doing the questioning.

HEARING OFFICER ORTH: Thank you, Mr. Trujillo. Go ahead.

CROSS-EXAMINATION

BY MR. TRUJILLO:

Q. Dr. Chapman, before we begin do you have access to your Direct and Rebuttal Testimony? I think it's NMED Exhibit 3 and Exhibit 71.

A. (No audible response.)

Q. Do you have those before you?

A. I do.

Is it at the top, the middle, or the bottom?

Q. I'll go find it myself; my notes indicate that it is on page 44.

It would be the second complete paragraph, and it starts with:

"Within this family..."

Do you see what I'm speaking to?

A. Yes.

Q. Why don't you go ahead and read this paragraph for us, because I'm going to ask you several questions about it.

A. (No audible response.)

Q. Read it out loud so we're familiar with it, because I have, again, several questions, and I want to make sure we are familiar with the entire context.

A. You would like me to read it out loud?

Q. Yes, please.

A. (Reading:) "Within this family

of fluorinated organic compounds there is wide variation in chemical structure, which can ultimately influence biological, chemical, and physical properties when released into the environment.

Within the family there are 2 classes, non-polymers and polymers. Within classes there are many subclasses, which include per-fluoroalkyl substances, poly-fluoroalkyl substances, fluoropolymers, polymeric perfluoropolyethers, and side-chain fluorinated polymers.

"For the sake of my Testimony and this Rulemaking hearing, the PFAS Protection Act provides us with the following definition:

"'Per-' or 'poly-fluoroalkyl substances' means

a substance in a class of fluorinated organic chemicals containing at least 1 fully fluorinated carbon atom.'"

Q. In this paragraph, Dr. Chapman, as I read your Testimony, you are trying to point to the statutory definition because it's different than something else. Is that correct?

A. (No audible response.)

Q. Am I interpreting your paragraph here correctly?

A. I don't agree with that.

Q. Why was it important to point out the statutory definition specifically in this paragraph?

A. Statutory definitions are important to provide context.

Q. Are there non-statutory or scientific definitions of PFAS?

A. Can you repeat the question?

Q. Are there non-statutory or scientific definitions of PFAS?

A. Yes, I would imagine so.

Q. Dr. Chapman, isn't it true that

the structure-based statutory definition of PFAS that captures all substances "with at least 1 fully fluorinated carbon" does not align with the scientific method of defining PFAS?

A. I disagree.

Q. Do you agree or disagree with me on this:

"Scientific conclusions relating to PFAAs do not automatically extend to all PFAS-containing products"?

A. (No audible response.)

Q. Is that correct?

A. Yes.

Q. Dr. Chapman, let me have you turn to page 46 of Exhibit 3.

A. (Witness complies.)

Q. Are you there?

A. Yes.

Q. On page 46 you state:

"Beyond PFOA and PFOS alternatives there is growing scientific evidence that the fluoropolymer subclass of PFAS

may not be as inert as originally understood."

Is that correct?

A. Yes, I wrote that.

Q. Your best attempt to discredit these studies dealing with fluoropolymers is to point out Conflicts of Interest by the authors; correct?

A. No.

Q. Did you point that out?

A. I did.

Q. I'm going to ask you some questions outside of my outline here because there is some additional comments that you made, so I'm going to ask you some questions on various topics:

If the Department does not treat all PFAS the same, as you previously indicated in your verbal Testimony today, why is it requiring PFAS Labeling for all PFAS, including the exemptions?

A. That is the matter of Testimony

from Dr. Deb Dickerson, as well as the Department's perspective that Labels informed consumers.

Q. But it was your Testimony, though, or critique that the Department treats all PFAS the same, or it does not treat all PFAS the same?

A. I'm rebutting the claim that we did.

Q. And you still maintain that.

A. Correct.

Q. Dr. Chapman, as you stated, NMED's purpose for the Proposed Rule is:

"... to turn off the spigot of PFAS at its source."

Is that correct?

A. Yes.

Q. Does the Department intend to discourage manufacturers of PFAS-containing products from distribution in New Mexico?

MR. SMITHKIER: Objection; outside the scope.

MR. TRUJILLO: Madam Hearing Officer, as the witness indicated, I

believe it goes into the Policy choices they have made, and he has testified extensively on various Policy choices.

HEARING OFFICER ORTH: Thank you.

Dr. Chapman, can you answer the question within the scope of your earlier Testimony?

THE WITNESS: Can you repeat the question?

Q. BY MR. TRUJILLO: Absolutely.

As you testified earlier, NMED's purpose of the Proposed Rule is:

"... to turn off the spigot of PFAS at its source."

Is that correct?

A. Yes.

In my Testimony I have provided that consumer products are one avenue or source of PFAS in the environment.

Q. As part of that are you intending to discourage manufacturers of PFAS-containing products from distribution in New Mexico?

A. I believe there is pathways for the continued distribution of products containing PFAS to operate under the Currently Unavoidable Use proposal, and there are exemptions as well.

Q. I don't remember whether I asked, of these other states that you talked to, did any of them indicate how long it takes to get an Unavoidable Use determination on average?

A. No.

Q. Do you have any idea as to how long it's going to take in New Mexico, or have you guys estimated that at all?

A. No.

Q. Dr. Chapman, are you aware of any PFAS manufacturing within New Mexico?

A. I don't know; I'm not sure.

MR. TRUJILLO: Can I have a time check?

HEARING OFFICER ORTH: I was about to tell you that you have about 3 minutes now.

MR. TRUJILLO: Thank you,

a study about cosmetic emissions in Europe, and I mentioned other studies. I think that was a 2023 article that I pulled that figure from in my summary today.

Q. Okay. A 2023 article on what type of products?

A. Consumer products.

Q. And when you're using the term "Consumer products," are you speaking of any particular subset, or is that the sort of panoply of "Consumer products" at large?

A. As indicated by the Testimony I provided this morning, that spans a wide variety of different consumer products. Some of those are cosmetics, paints, and stuff like that.

Q. Okay. You do not attempt to quantify the impact that's attributable specifically to "Consumer products," do you.

A. I disagree.

Q. Could you specify where you quantified the impact that is

attributable to "Consumer products" and PFAS contamination in New Mexico?

A. I am speaking broadly about that study about cosmetics in Europe with respect to their relative contribution to contamination. Testimony with respect to New-Mexico-specific effects of PFAS will be the subject of another expert.

Q. Okay. Just to reorient I was asking you about the catalyst for the regulation, which was:

> "... to avoid making existing contamination issues worse"; right?

A. Yes.

Q. And so presumably, as a New Mexico regulatory body, you focused on existing contamination issues in New Mexico; right?

A. Again, part of the goal here is "... to turn off the PFAS spigot" in the state.

It is extremely difficult to remediate diffuse pollution throughout

the environment, and so one of the strategies is "... to turn off the spigot..." through consumer products.

Q. Okay. Let's talk a little bit about the Labeling provision:

The EIB is not required to impose any Labeling requirement by Statute, is it.

MR. SMITHKIER: Objection; calls for a legal conclusion.

HEARING OFFICER ORTH: Your response, Ms. Fiebig.

MS. FIEBIG: I think it's a fair question. He's putting substantial Testimony in his Written Testimony about the Rulemaking process, and his understanding is relevant to the proceedings.

HEARING OFFICER ORTH: Thank you.

Dr. Chapman, if you can answer the question as a member of management for a regulatory agency rather than as a Lawyer, go ahead.

THE WITNESS: It is my

understanding that the EIB is authorized to adopt Rules for Labeling consumer products.

Q. BY MS. FIEBIG: Do you have an understanding as to whether they are required to impose Labeling requirements?

A. It is not a requirement.

Q. And the purpose of the Labeling provisions in the Proposed Rule is to allow consumers to make informed choices about the products they bring into their home. Is that fair?

A. I would say that Labels provide some clarity to consumers as to what is in their products.

Q. And you stated in your Written Testimony, it's the Department's view that Labeling is a:

> "Critical piece of the Rule that will help restrict the flow of new PFAS from entering the State"; right?

A. Yes.

substances;

Effectiveness as surfactants; and,

Effectiveness in extinguishing flammable liquid fires.

Key chemical considerations with important implications for PFAS management include:

The carbon-fluorine bond;

Chain length distinction between PFAAs and PFAA precursors; and,

Polymer versus non-polymer chemistry.

The carbon-fluorine bond is among the strongest bonds encountered in organic chemistry and contributes to the high chemical stability for PFAS.

Chain length influences PFAS mobility in water systems, treatment efficacy, bioavailability and bioaccumulation.

PFAAs are an important group within the PFAS family that includes

most of the PFAS compounds that are regulated and included in standard analytical methods.

PFAA precursors present another PFAS management challenge, as they can play an important role in PFAS mobility and contribute to increases in PFAA concentrations after certain treatment processes.

PFAS are produced in both polymer and non-polymer forms, while polymer PFAS are generally less mobile than non-polymer PFAS. Non-polymer PFAS might be used as processing aids during fluoropolymer production, and side-chain polymers may function as PFAA precursors under certain conditions.

Finally, our understanding of PFAS chemistry and associated implications have evolved considerably over the last 15 years, and continue to evolve as additional data becomes available. The information provided attempts to summarize the best

available information into the current state of the science.

Those looking for more information on PFAS nomenclature, chemistry, fate and transport, analytical methods, treatment technologies, or other areas of interest are referred to the ITRC Guidance Document as a comprehensive consensus-based resource.

Q. Thank you.

MR. KNIGHT: Madam Hearing Officer, this witness is now available for questions.

HEARING OFFICER ORTH: Thank you very much, Mr. Knight and Dr. Olson.

Mr. Trujillo, or is it Ms. Seluja?

All right. Thank you. Go ahead.

CROSS-EXAMINATION

BY MS. SELUJA:

Q. Good afternoon, Dr. Olson; I'm Ms. Seluja.

Exhibit 7

BEFORE HONORABLE FELICIA L. ORTH

Deposition of : VOL II HEARING

taken on: February 24, 2026

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STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED) EIB NO.:
ADOPTION OF 20.13.2 NMAC,)
) 25-61(R)
Per- and Poly-Fluoroalkyl)
Substances in Consumer)
Products.)
)

BEFORE THE HONORABLE FELICIA L. ORTH

TUESDAY, FEBRUARY 24, 2026

9:02 A.M.

EVIDENTIARY HEARING VOLUME II

CERTIFIED TRANSCRIPT

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Next slide.

What do all of these mean? This is a bit of a summary slide. I hope I've shown that PFAS are used in many different products, including products that we might encounter in our homes and workplaces. When PFAS are made, applied, used, and disposed of, they can be emitted into the environment throughout that life cycle.

We can be exposed to PFAS in many different ways across different pathways and different routes of exposure, and yes, there are many different PFAS. The vast majority of PFAS have not been studied at all. In fact, many of them have just been discovered in the environment.

I am still learning about PFAS that have been discovered in the environment from my chemistry colleagues. The ones that have been studied have many concerns to toxicologists, including adverse health outcomes in exposed people and in

experimental rodent models.

It is inappropriate to assume that those that have not yet been studied are completely safe, because data indicates that these understudied PFAS do have toxicities similar to those well-studied.

The National Toxicology Program recently released data from 28-day studies of some shorter chain PFAS, and they did acknowledge that the potency of these PFAS was less than the ones that are longer chain, but that they still impacted the same systems as the longer chain compounds. A shift in potency just means it takes more of the short-chain compound to create the toxicity or produce the toxicity.

It is my opinion consumers have the right to know what products contain PFAS, even if the risk of exposure to the PFAS in that product is low. Some consumers might want to protect their fellow people from being exposed to the PFAS as they are

This is also factually incorrect. PFAS had been used in Aqueous Film-Forming Foams as flame suppressants. This might seem like a minor distinction, but it is actually a quite serious distinction. Flame retardants have very different properties than flame suppressants.

Dr. Stanton also tries to assert that short-chain PFAS are without toxicological concern because they're not as well-studied as the longer chain or more well-studied PFAS. I think in my direct Testimony I write why I disagree with that.

She also asserts that consumers are unlikely to be exposed to PFAS in consumer products. There may be a low likelihood of exposure from PFAS in consumer products, but there is evidence that PFAS are found in dust of people's homes, and consumer products would be the source of that dust.

This also assumes that consumers aren't concerned about the

life cycle issues associated with PFAS.

Dr. Stanton also cited a Press Release by the U.S. Food and Drug Administration stating that PFAS in medical devices was allowable, and so she used that Press Release to assert that fluoropolymers are without safety concerns, where the U.S. FDA actually stated that they found no conclusive evidence of patient health issues associated with fluoropolymers. They found no reason that the continued use of PFAS in medical devices should be discontinued, but they also asserted that they would continue to monitor safety of medical devices.

Those are the points that I have with respect to Dr. Stanton.

With respect to Dr. Korzeniowski's Direct Testimony, he includes references to 2 manuscripts that assert PFAS shouldn't be grouped. I was actually a co-author on 1 of those manuscripts, it's an Anderson, et al., manuscript, and I think he left

out some important details about that manuscript:

The title of the manuscript does assert that PFAS should not be grouped, but the nuts and bolts of the manuscript are specific to human health risk assessments using toxicological data.

I think I would agree we have insufficient toxicological data to group all PFAS by their toxicological properties, but I have been part of publications that indicate that concerns about their persistence warrants grouping them, and concerns about their persistence warrants grouping them, and concerns about their persistence and/or bioaccumulation and/or mobility and/or toxicity are sufficient for grouping from a scientific perspective.

I would also like to point out that Dr. Korzeniowski's statement on fluoropolymers also ignores life cycle concerns that have been brought up in

talking about end of life?

A. (No audible response.)

Q. Could you be more specific as to what you mean by "... life recycle concerns...," with respect to consumer products specifically?

A. On the slide that I had in my Direct Testimony, which is actually from a paper that I co-authored by Lohmann, et al., it is a paper that challenges the concept that fluoropolymers are of low concern because of these life cycle concerns.

One way that PFAS can be emitted to the environment is when they are produced by the companies that manufacture PFAS.

Another way that PFAS can be emitted into the environment is when those PFAS are purchased by another company and they are applied to a product.

Probably one of the most well-known cases is in Dalton, Georgia, where PFAS had been applied to textiles.

Water was contaminated from the application of the PFAS to the textiles even though the carpet manufacturers did not produce the PFAS.

There have also been studies to indicate that when materials containing PFAS are disposed of in landfills, for example, PFAS can be detected in the water from the landfill, known as leachate.

As far as I understand, when PFAS are manufactured and applied to products, used, and disposed of, they can be emitted into the environment from a life recycle perspective.

Q. Got it.

With respect to fluoropolymers in particular, the greatest source of concern for contamination arises in the manufacturing process, at the front end when the product designer, or when the PFAS itself is being created or applied to a product, or at the end of the product's life when it is being disposed of. Is that fair?

A. Given our current state of scientific understanding of fluoropolymers and how they behave, yes.

I, as a consumer, would want to know whether or not a product I am purchasing had those life cycle concerns, and it would allow me to make an informed decision about my own personal environmental footprint.

Q. Okay.

In terms of the risk of potential contamination in your home, would you agree that the risk is relatively low, assuming you've purchased that product and brought it into your home after the time that the manufacturer has completed it and before the time that it is potentially going into a landfill?

A. If I assume my home is a bubble and my actions have no impact on people in the environment around me, then yes, my risk from exposure in my own home to those PFAS in consumer products is

likely low.

However, why not give me the opportunity to make a choice to reduce my exposure in the places that I can reduce my exposure? Because I likely can't reduce my exposure to PFAS in contaminated drinking water or contaminated food, or in the air.

Q. Sure.

Do you think it would be helpful to have that level of context for you to be able to make an informed decision as to whether this particular product was presenting you with a direct risk of a health outcome, you know, a toxicological concern, versus a broader environmental concern?

A. (No audible response.)

Q. In other words do you see a distinction between those?

A. I do see a distinction.

As a scientist who studies PFAS I am often very frustrated on how challenging it is to get information on what products I bring into my home or

A. That's correct.
Q. And the basis of your concern is that "risk" is a term of art and encompasses a balance of hazard and exposure; right?
A. That is how I use it as a toxicologist, yes.
Q. And of course you don't know whether Ms. Marrapese intended to use that as a toxicologist; right?
A. She made assertions that led me to understand she was talking about hazards from the toxicological properties of PFAS.
Q. Okay. And whether something is hazardous is not dependant on exposure; right?
A. Hazard is an inherent property.
Q. Yeah, if it's hazardous, it's hazardous, and that's kind of the end of it.
A. That's my understanding.
Q. But exposure is the factor that goes into the assessment of risk; right?

A. Exposure is a feature of understanding risk to a hazard, yes.

Q. And that's because the degree to which a hazard is likely to be harmful to humans or the environment depends on the level of exposure that humans or the environment have to that hazard; right?

A. If we want to qualify or quantify risk, exposure is a feature of that.

Q. Okay. So you would agree that impacts associated with hazards might be limited if there is limited exposure.

A. If there is zero exposure, there is zero risk to a hazard.

Q. And if -- okay.

If there is limited exposure, would that potentially also limit the risk?

A. I think I asserted that in my Written Rebuttal to Ms. Marrapese's Testimony that risk can be increased or decreased by increases or decreases in exposure.

Q. Okay. What is the proper terminology if "less risky" is not the correct term?

A. Low risk/high risk/medium risk.

Q. Okay.

A. She could have quantified "risk," too, in terms of a percentage, but that would have taken a great deal of effort.

MS. FIEBIG: I'm just looking through some of the notes that I took from the Testimony today.

Q. You mentioned earlier that PFAS is in a lot of products; right?

A. To the best of my knowledge, yes.

Q. Would you agree that's because they have unique properties?

A. I wish I knew the answer to that because PFAS seem to be in many products, but we, as a scientific community, don't always fully understand why PFAS was added to the product.

I'm part of a group that wrote

and again this is my interpretation of the Stewardship Agreement, was that PFAS with fewer carbons, compared to PFOA and PFOS, had fewer toxicological concerns based on the evidence available at the time of the Stewardship Agreement.

Q. Okay. Is there a comparable study being done on fluoropolymers?

A. I don't know if the National Toxicology Program is exploring fluoropolymers.

I know that the U.S. FDA recently came out with a lengthy report on the use of fluoropolymers in cosmetics. My evaluation of that report indicates that not all toxicities have been explored for fluoropolymers, but I'm not aware of any scientists right now conducting those studies to fill the gap.

MS. FIEBIG: Okay. I think I may be done, but if I may just have a moment to confer with my Co-Counsel.

HEARING OFFICER ORTH: Yes.

MS. FIEBIG: Thank you.

Q. BY MS. FIEBIG: Dr. DeWitt, I just have one more question. I wanted to get a little bit more clarity on the life cycle concerns that you were talking about with fluoropolymers in particular:

I know that one concern is at the end of life, fluoropolymers may end up in a landfill and potentially degrade into some other substance. Is that fair?

A. Yes.

Q. I think you indicated that fluoropolymers degrade to nanopolymers and microplastics. Is that right?

A. There is at least one study that I cite in my report that indicates that PTFE is part of the milieu of compounds that could be classified as micro- and nanoplastics.

Q. Okay. Is there evidence that fluoropolymers degrade to the long-chain persistent PFAS?

A. I believe that there have been

scientific studies demonstrating that when they are incinerated, there can be PFAS, long-chain and short-chain, that degrade.

Evidence from landfill leachate indicates that the PFAS found in landfill leachate likely arise from fluoropolymers or side-chain fluorinated polymers.

MS. FIEBIG: All right. Thank you.

No further questions.

HEARING OFFICER ORTH: Thank you, Ms. Fiebig.

Mr. Butzier, do you have any questions?

MR. BUTZIER: Thank you, Madam Hearing Officer, Members of the Board.

Thank you, Dr. DeWitt, for your Testimony and welcome to New Mexico. I'm Stuart Butzier and I represent PPWG in this proceeding, and I just have a few questions.

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CROSS-EXAMINATION

BY MR. BUTZIER:

Q. My question: Is it your understanding that the Rule, as proposed by the New Mexico Environment Department, contains certain exemptions from phaseout requirements, reporting requirement, and labeling requirements?

MR. SMITHKIER: Objection, your Honor; calls for a legal opinion.

HEARING OFFICER ORTH: So Dr. DeWitt, do not offer a legal opinion, since I understand that's not your expertise.

However, knowing that this is establishing a regulatory program, to the extent you have something to offer to those who are looking for what it would mean as a regulator, you can answer.

THE WITNESS: To the best of my understanding there are various exemptions under the Labeling requirement, and that's all that I understand.

The Universal Product Code or the UPC bar code;

The on-product label; and,

The sales unit label.

The findings were that "Label-Related Costs" occur only once in a product's life cycle and that this will not increase the ongoing production costs.

On the next slide, in doing this review, they found 6 relevant genetically engineered "Label-Related Cost" studies. Now this is back in 2014 when all of this was just being discussed by different states so there were not that many studies, but they found 6. They converted all of the cost data to per capita values such that they could end up with a cost per consumer.

The median cost associated with labeling GE-containing products were found to be $2.30 per consumer as a 1-time cost.

The authors stated that their

my understanding.

I'm not an expert on GE foods, but from my reading, that is my understanding.

Q. That class of products as opposed to a broad range, potentially, of products.

A. Well that is a broad range of products.

Q. Limited to food products.

A. But in the food sector, yes.

Q. Yes.

In the second column of that table it lists a range of costs in, as I read it, "Dollars Per State Or Country." Is that correct?

A. That is correct. Some of these were nationwide analyses and some were regional or state-specific.

Q. I was just trying to make sense of that for myself.

A. Yeah.

Q. Would you agree it looks like that shows a range of $6.3 million to $950 million per state or country?

A. Yes. Yes.
Q. Then it looks like they just divided those numbers by the population of a particular state, as shown in the fourth column, to get to "Per Capita Cost." Is that how that --
A. Yeah. Yeah.
Q. -- works? Okay.
A. And then they adjusted the cost for 2014 dollars.
Q. Yeah, fair enough.
Those cost ranges are $0.32 to around $0.15 per capita; right?
A. That's correct.
Q. Okay. Again, I'm just trying to figure out how this would compare to what would happen under this Rule. I don't know if it's very easy to compare, but there is obviously some pretty high costs here.
Now the "Per Capita Costs" -- well I'm not going to ask that.
I don't know if I can sort this out any further, but let's see.

In your conclusion you state that in your view:

"The consuming public has a right to know about these hazards and the products that contain them."

That statement assumes that there are, of course, hazards in the products. Is that fair?

A. Yeah, you know, I would have to say that might be a bit of a typo. You know, I suppose I should have said, you know, they have a right to know of the presence of these materials in their products.

Q. Regardless of whether the products pose any hazards.

A. Well it's my understanding that this label is not designed to communicate about hazards, it's just designed to communicate about their presence in these products.

Q. Is it your understanding that the Department's intent is to deter consumers from purchasing products

labeled with PFAS?

A. I don't really know an answer to that.

Q. Okay. Fair enough.

Let me take a quick look, but I believe that's all my questions.

Let me check a message here.

Yeah, thank you, Dr. Dickerson.

MR. MOELLENBERG: That's all my questions.

THE WITNESS: Thank you.

HEARING OFFICER ORTH: Thank you, Mr. Moellenberg.

Ms. Fiebig, do you have questions?

MS. FIEBIG: Yes, Madam Hearing Officer. Thank you.

EXAMINATION

BY MS. FIEBIG:

Q. Good afternoon, Dr. Dickerson. I'm Rebecca Fiebig and I'm here on behalf of the Complex Products Manufacturers Coalition and the

shaking your head. You are certainly free to say that you don't have an opinion, or what you might need to do to form an opinion. If it's outside the scope of your Testimony, just say that.

THE WITNESS: Yeah, that's outside the scope.

While I did see that phrase, I don't have enough information to answer that question.

Q. BY MS. FIEBIG: Okay. In your experience, do most consumers assume that a substance is harmful if it's identified on a label?

A. I'm sorry; can you repeat the question?

Q. I said in your experience do most consumers assume that a substance is harmful if it is identified on the label?

A. No.

Q. I think you provided in your report that 50% of respondents have never heard of PFAS; right?

A. That's right.
Q. And another 30% have heard the term, but they have no idea what it is; right?
A. Right.
Q. The Environment Department is proposing to add an image of a flask with "PFAS" in it on product labels. Do you believe consumers will perceive that as a suggestion that the product may cause harm?
A. I do not. I believe that will convey the message that there is a chemical that goes by the acronym or initials "PFAS" in this product. That's the totality of that message.
Q. In a universe where the public doesn't even know what PFAS is, do you think that telling them simply that the product contains PFAS is informative?
A. That's a very good question:
I don't know the answer to that, but I would conjecture that might prompt some to seek more information.
Q. Okay. Would you expect

consumers to maybe go to the Environment Department's website to get more information?

A. I don't know; I can't answer where they would go, yeah.

Q. Okay.

I believe you said you have looked at the current proposed Labeling provisions in subsection C(1) to put in the flask with "PFAS."

A. Yes, uh-huh.

Q. Do you think that is sufficient from a design perspective to constitute an effective label?

A. I do. I do. I think...

Would you like me to go into more detail about what I see there that's beneficial --

Q. Yes, please.

A. -- to design an effective label?

I'm looking at the Rule at Section...

Q. Are you looking at Exhibit 69?

A. I am looking at the Labeling

section, so 20.13.2.13, paragraph to be determined.

Q. I was asking you about C(1).

A. Yeah, C.

Okay. It says that the label should clearly inform the consumer that the product contains that substance.

It talks about 2 languages, which is good, so that's looking at comprehensibility of the label.

It says there should be a pictogram, as we just discussed, of an Erlenmeyer flask with the initials "PFAS." I think that would be an excellent element that would convey to the consumer that there is a chemical that they might want to know about.

It does discuss conspicuousness at the bottom of that paragraph, and it goes into several requirements for conspicuousness which I identified in my Testimony as being very important.

Then what I liked was that it does discuss Paragraph 4 where the

consumer is unable to view the labels on the product or consumer packaging at the time of purchase because they are making an online purchase, or a catalog purchase, or over the telephone, so it covers all of the bases, and they should be provided that information.

This is that last key factor I was talking about, or the remote or online information.

Q. "Promotional Preactivation."

A. Thank you.

Q. Yeah, I think there is also a provision in here saying:

> "The text shall be no smaller than the font used for other consumer information on the products."

A. Right.

Q. I'm guessing that's the "Conspicuousness" component.

A. "Conspicuousness" and "Comprehension." That would go to both of those, yeah.

Q. Okay. Let's talk about cost;

A. I was just looking at this analysis that ECOnorthwest had done. There were...

I did try to find analyses of PFAS labeling, but as you know there is just a couple of states that are considering that at this time, so there was really not an opportunity to do those studies. I was trying to find an analog, and the GE labeling seemed similar enough.

Again, it was hard to find studies on that, so I found this one just to give us a rough thumbnail sketch of what the cost ballpark might be.

Q. Okay.

MS. FIEBIG: May I have one moment to confer with my Co-Counsel?

HEARING OFFICER ORTH: Yes, and you have 4 minutes.

MS. FIEBIG: Oh, well...

Q. I think I have 1 more question:

Are there other mechanisms through which the State could provide

information about the contents of PFAS products to their citizens besides putting it on the product label?

A. My expertise is in product labeling, so I don't really feel like I can speak to other methods of communication.

MS. FIEBIG: Okay. Thank you so much.

HEARING OFFICER ORTH: Thank you, Ms. Fiebig.

Mr. Butzier, do you have questions?

MR. BUTZIER: No questions.

HEARING OFFICER ORTH: He said, "No questions."

Mr. Wetherbee, do you have questions of Dr. Dickerson?

MR. WETHERBEE: I do, Madam Hearing Officer. Thank you.

CROSS-EXAMINATION

BY MR. WETHERBEE:

Q. Dr. Dickerson, thank you very much for your Testimony.

I would like to kind of visit a little bit about some of the other areas you're an expert in".

You're a Certified Industrial Hygienist. Is that correct?

A. That's correct.

Q. And currently certified. Is that correct?

A. That's correct.

Q. And Certified Safety Professional for over 20 years. Is that correct?

A. Yeah, I guess so.

I don't remember the date, but yes, it's about that long.

Q. Well it says:

"2003 to present"; correct?

A. Yes, that's correct.

Q. And Certified Hazardous Material Manager. Is that correct?

A. That's not current; I let that lapse in 2021, but yes.

Q. But you had extensive experience in that area; is that fair to say?

Exhibit 8

BEFORE HONORABLE FELICIA L. ORTH

Deposition of : VOL III HEARING

taken on: February 25, 2026

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STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED ADOPTION OF 20.13.2 NMAC, Per- and Poly-Fluoroalkyl Substances in Consumer Products.	EIB NO.: 25-61(R)

BEFORE THE HONORABLE FELICIA L. ORTH

WEDNESDAY, FEBRUARY 25, 2026

9:00 A.M.

EVIDENTIARY HEARING VOLUME III

CERTIFIED TRANSCRIPT

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I N D E X

E X H I B I T S

NUMBER	DESCRIPTION	PAGE
CPMC Exhibit 1	Document Bearing Title, "Written Technical Testimony of Alex Stanton Ph.D.," in Re EIB 25-61(R) (5 Pages)	1065
CLA Exhibit 1	Document Depicting Curriculum Vitae Re Manojit Basu, Ph.D., Vice President/Chief Science & Food Safety Executive, in Re EIB 25-61(R) (2 Pages)	1010
CLA Exhibit 2	Document Bearing Title, "Direct Testimony of Dr. Manojit Basu on Behalf of CropLife America (CLA)," Dated	1010

DIRECT EXAMINATION

BY MR. SMITHKIER:

Q. Secretary Kenney, where are you employed?

A. The New Mexico Environment Department.

Q. How long have you been employed there and what is your current position?

A. Seven years, or just over 7 years, and my current position is Cabinet Secretary.

Q. Can you briefly describe your education and professional qualifications for us.

A. Sure.

As indicated on my Resumé I hold a Master's in Environmental Engineering from Temple University in Philadelphia; and,

A Bachelor of Science in Environmental Engineering and Technology also from Temple University.

In terms of my professional qualifications I have 3 decades of

federal and state regulatory experience in developing and implementing:

Laws;

Regulations;

Policies; and,

Budgets.

My professional experience stems from over 20 years of employment at U.S. EPA, but I've also worked as a consultant to the U.S. Department of Justice Environment and Natural Resource Division, as well as an environmental consulting firm in Denver, McCoy & Associates.

Q. Thank you.

Did you file Direct and Rebuttal Written Testimony in this matter?

A. Yes.

Q. Do you have any corrections you would like to make to that Written Testimony?

A. No.

Q. Do you adopt that Written Testimony as your Testimony here today?

A. Yes.
Q. Thank you.
Will you please provide us with a summary of your Written Testimony.
A. Sure.
In summary, my Written Testimony focuses on 3 broad areas:
First, the Testimony makes the case for turning off the spigot to protect public health, the environment, and our economy.
The PFAS Protection Act and the Rebuttal Rule target the sources of PFAS pollution by phasing out and prohibiting the sale of consumer products containing intentionally added PFAS, such as:
Cookware;
Textiles; and,
Furniture.
Without stopping PFAS contamination at its source, the State will likely continue to incur greater liabilities.
Second, my Written Testimony

focuses on safeguarding New Mexico's economy:

PFAS contamination risks:

New Mexico's $3.7 billion agricultural industry;

Our $2.4 billion outdoor recreation industry; and,

The municipal and private sector infrastructure related to drinking water, wastewater, and waste management.

Third, my Written Testimony focuses on the implementation and administration of the Act and Rebuttal Rule:

Consistent with State law and budget direction, NMED is pursuing a Fee-based approach to ensure that manufacturers, rather than taxpayers, cover the cost of implementation.

Q. Thank you.

How has the Department changed during your tenure relevant to the implementation of this Rule?

A. The Department has changed

significantly over the last 7 years. Our budget has grown from $90 million in 2019, to over $235 million currently.

Our workforce has also grown from over 500 employees in 2019, to close to 700 employees today. Those budget and staffing increases reflect an expanding mission of the Department through an increase in federal programs, and an ever-expanding breadth of State programs.

The increases in budget and staffing also reflect the urgency by which the Governor, the Legislature, and consumers expect the Department to take proactive approaches to protecting communities and our economy for current and future generations.

To do so the Department has developed advanced new laws, rules, and programs all while modernizing its operations to improve our performance. These modernization efforts include things like:

Paperless processing to

expedite services we render;

Rulemaking efforts;

Report submissions;

Fee payments; and,

Public record requests just to highlight a few.

Q. Can you tell us why NMED is focusing specifically on consumer products rather than just cleaning up existing water contamination?

A. Yes.

To use a term that we've heard a lot in this hearing, because turning off the spigot is the only affordable way to prevent PFAS contamination. The signing of the PFAS Protection Act into law was the endorsement of this approach by the Governor and the Legislature.

Merely addressing water contamination at a home or business is just a Band-Aid. Remediating groundwater does not prevent recontamination of the same groundwater. We must continue to address the source

of PFAS contamination.

Q. Can you give the Board concrete examples of how PFAS has already harmed New Mexico's economy and its citizens?

A. Yes, and these impacts are staggering to say the least:

In 2022 a fifth-generation New Mexico dairy farmer had to euthanize his entire herd of 3600 dairy cows due to PFAS poisoning.

Neighbors have literally lost the farm in terms of their property values.

In the tourism and recreation sectors we have seen unprecedented levels of contamination in wildlife around Lake Holloman, and impacting areas adjacent to White Sands National Park.

Most recently we discovered a groundwater plume affecting 1 in 3 homes in La Cieneguilla and La Cienega communities just outside of Santa Fe. That plume has devastated those families as well as their home values.

Is that correct?

A. That was correct at that time.

Q. Just to be clear, the $1.4 million was just to implement all aspects of the PFAS Protection Act without the additional requirement of Labeling; correct?

A. I would need to confirm that the Fiscal Impact Report we submitted was not updated post the revision to the committee sub in order to line up your question about the $1.4 million and when Labeling was required.

Now that I'm saying that out loud, it probably...

Well I'm not going to speculate; I would just need to verify.

Q. I believe if I represented to you that the FR was updated and went from $1.4 to $1.8 million, would you have any reason to disagree with me on that?

MR. SMITHKIER: Objection; calls for speculation.

HEARING OFFICER ORTH: You're

right; he's already said he won't speculate.

Q. BY MR. TRUJILLO: At that point in time did you have an estimate that you gave to the Legislative Finance Committee as to what it would cost to implement the Labeling portion?

A. We tend not to.

We provide a Fiscal Impact Report based on the totality of our understanding of what the Act says and not portions thereof, so I wouldn't be able to break down the Labeling portion separate from the total for the Act itself.

I don't believe I included our Fiscal Impact Reports as part of my Testimony, and I don't...

That's probably as far as I can go on the Fiscal Impact Report and its broad statements related to the Act, as opposed to portions thereof.

Q. In Exhibit 57, on pages 6 and 7, you indicate that the Legislature did not provide you with recurring

General Fund revenue to implement the PFAS Act, instead the Legislature provided you startup funding. Is that correct?

A. That is correct.

Q. And that was for $1 million to get things set up. Is that correct?

A. That's correct.

Q. Is it really going to cost you a million bucks?

A. Maybe; it depends on how long this goes on for.

In all seriousness, with the appropriation we received, you heard a number of people moving into new roles who are experts. You heard from Dr. Eric Chapman, who was a hire that got started under this money.

We have an ERG contract that got started under this funding to build the IT system.

This hearing would be inclusive of paying for that.

The work that our team has done to go across the country and meet with

DR. BASU: I can wait for another 30 minutes.

MR. TRUJILLO: Thank you very much. Thanks for accommodating the Secretary; I appreciate that.

HEARING OFFICER ORTH: Thank you.

Let's see if we can wrap up the Secretary's examination in that time.

Thank you, Mr. Secretary, for rejoining us here at the front.

When we broke, Chair Ely was pursuing her line of Examination.

Go ahead, Chair.

CHAIR ELY: Thank you, Madam Hearing Officer and Secretary.

EXAMINATION CONTINUED

BY CHAIR ELY:

Q. When we broke I asked a very poorly worded question about Labeling in asking you to compare the requirements in the Proposed Rule regarding Labeling with Labeling

requirements in other states if you know them. In particular I was interested in whether other states were requiring products that were exempt from distribution and sale to also be labeled. Do you have an answer to that?

A. Yes, thank you, Chair Ely. I appreciate having something to do over lunch.

Just a quick synopsis:

There are various Labeling requirements out there, specifically Colorado and Connecticut might be more analogous. Minnesota -- what am I saying?

Connecticut does not have -- they have Exemptions in the Statute, but they don't have a pathway like we have through Rulemaking to continue to allow to sell products through a Label Exemption. They don't have an analogous pathway.

It seems like everybody texts me when I sit down.

They don't have -- it's not analogous, but the point being is that maybe they don't have labels on exempted products in Connecticut; okay?

Then Colorado, they have approached their law a little bit differently, and I'll take cookware as an example:

They have required labels on cookware until it sunsets, and then at that point there is no -- it sunsets, the difference being that in New Mexico fluoropolymers, and the next generation of PFAS known as fluoropolymers that are added to cookware, have the ability to be sold here; whereas in Colorado, my understanding is that they are not going to be sold there, so I think there is a distinction between what will still be in commerce here as a new product and what there would be there.

Maybe one last highlight for you, Chair Ely, to point towards is I

Exhibit 9

BEFORE HONORABLE FELICIA L. ORTH

Deposition of : VOL IV HEARING

taken on: February 26, 2026

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IN THE MATTER OF PROPOSED ADOPTION OF 20.13.2 NMAC, Per- and Poly-Fluoroalkyl Substances in Consumer Products.	EIB NO.: 25-61(R)

BEFORE THE HONORABLE FELICIA L. ORTH

THURSDAY, FEBRUARY 26, 2026

9:01 A.M.

EVIDENTIARY HEARING VOLUME IV

CERTIFIED TRANSCRIPT

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I N D E X

Page 1220

are the only polymeric PFAS that are identified by the OECD as precursors to per-fluoroalkyl acids.

Fluoropolymers and perfluoropolyethers do not degrade, therefore, they cannot be precursors.

If we go to the next slide, please.

In this slide we're contrasting the per-fluoroalkyl acids and fluoropolymers:

On the left, you see "Non-Polymers"; on the right you see "Polymeric PFAS."

On the left, "Non-Polymers, Low Molecular Weight"; on the right, "Polymeric PFAS, Very Large Molecular Weights."

On the left, per-fluoroalkyl acids are water soluble and are volatile; on the right, you see fluoropolymers that are neither water soluble nor volatile. This slide, however, only shows chemical and physical properties. The next slide

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will show biological properties.

Per-fluoroalkyl acids on the left have toxicity concerns, such as those outlined in the green boxes. We have "Repeated Dose of Chronic Toxicity" shown here.

There is a row on carcinogenicity, and one on biological half-life. That means how long it takes for one-half of the substance within the human body to be eliminated. We see that the half-life differs among per-fluoroalkyl acids.

HFPO dimer acid is measured in hours, whereas as PFOS is measured in years. Per-fluoroalkyl acids are toxic and bioaccumulative.

Next slide, please.

On the right I compare fluoropolymers to per-fluoroalkyl acids. We see fluoropolymers are very different; they are not toxic and they don't bioaccumulate.

On the next slide -- I'm hoping that you recognize now that all

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PFAS are not PFAS that into per-fluoroalkyl acids, poly-fluoroalkyl acids, per-fluoroalkyl acid precursors, and "other PFAS." That last category of other PFAS includes fluoropolymers and perfluoropolyethers.

Next slide, please.

So the chemical, physical, and biological data are significantly different for fluoropolymers and all other PFAS, and Toxicologists don't see PFAS the same way.

The major subclass differences are recognized, as is the importance of using the same terminology to distinguish between molecular structures.

As the OECD stressed in their 2021 terminology paper, fit-for-purpose working scopes for risk communication and risk management are recognized. Effective risk management requires differentiation.

Next slide please.

This slide reinforces the

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significant differences between per-fluoroalkyl acids and fluoropolymers. They are not all bioavailable; they are not all bioaccumulative. The excellent stability and resistance to degradation, otherwise known as "persistence," does not equal toxicity or bioaccumulation.

Because of the chemical and physical property differences:

Not all PFAS are taken up into plants;

Not all are water soluble; and,

Not all will volatilize or absorb to soil.

Mobility differs across the umbrella of PFAS.

Last slide, please.

Should Exemptions be excluded from Labeling as proposed by ACC?

Yes.

Risk is a function of bioavailable exposure and hazard. Without bioavailable exposure there can be no risk by definition.

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The term "PFAS" is not intended to communicate risk and the OECD has made that clear.

Telling a New Mexico customer of the presence of 1 fully fluorinated carbon does not inform about:

Bioavailable exposure;

Hazard; or,

Risk.

The term "PFAS" itself is too imprecise to be health-protective.

Fluoropolymers are too large for passive transport into the cell; they lack:

Lipid solubility to penetrate the cell membrane; and,

They are highly hydrophobic and have no hydrogen bond-donating potential.

They are not structurally similar to steroids or peptides or other substances larger than 1,000 daltons that are exceptions to the bioavailability described by Lipinski's Rule of 5.

Page 1225

Fluoropolymers do not enter cells by active transport; that depends on chemical structural properties like:

Molecular shape;

Volume; and,

Size.

Fluoropolymers are extremely large molecules. They lack rotational bonds and functional groups that interact with transporter proteins. They do not fit into cell surface receptors to bind and signal a cascade of events within the cell.

Fluoropolymers are not bioavailable like per-fluoroalkyl acids. Again, without bioavailable exposure even very persistent substances are not a risk.

Thank you very much for the opportunity to speak with you today.

MR. TRUJILLO: Thank you, Dr. Henry.

At this time, Madam Chair, we turn over our witness for questioning.

HEARING OFFICER ORTH: Thank you, Mr. Trujillo. Thank you, Dr. Henry.

Ms. Fiebig, do you have questions of Dr. Henry?

MS. FIEBIG: No questions.

HEARING OFFICER ORTH: Thank you.

Mr. Rosebrough or Mr. Smithkier.

MR. ROSEBROUGH: Yes, thank you, Madam Hearing Officer.

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CROSS-EXAMINATION

BY MR. ROSEBROUGH:

Q. Dr. Henry, good morning. My name is Mark Rosebrough. I am an Attorney for the New Mexico Environment Department.

You're Testifying today as a Toxicologist. Is that correct?

A. Yes.

Q. Thank you.

Are you aware of the definition of per- or poly-fluoroalkyl substance in New Mexico's PFAS Protection Act?

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A. I believe it says that a PFAS is a substance, an organic substance with 1 or more fully fluorinated carbon atoms.

Q. Yeah, that's correct. I'm going to read it exactly into the record just so we're all on the same page, and I'm quoting here:

"'Per- or poly-fluoroalkyl substance' means a substance in a class of fluorinated organic chemicals containing at least 1 fully fluorinated carbon atom."

So with that definition in mind I would ask you whether New Mexico's statutory definition is a chemistry-based definition.

A. It's a molecular-structural-chemical-based definition, yes.

Q. Thank you.

Are fluoropolymers a substance in a class of fluorinated organic chemicals containing at least 1 fully fluorinated carbon atom?

Page 1228

A. Yes.
Q. Thank you.
Are you aware of the language that the Department has proposed for its PFAS label?
A. Yes.
Q. Okay.
Specifically the label, just again, so we are all clear, requires the placement of an Erlenmeyer flask and the letters "PFAS" on the inside of it. I want to talk to you about those letters, "PFAS."
Is it true that a label placed on a product containing fluoropolymers which states only "PFAS" would be scientifically correct?
A. If the intent of the label is to identify the presence of a per- and poly-fluoroalkyl substance, yes. If the purpose is to inform about a hazard, or a risk, or potential bioavailable exposure, no.
Q. Okay. I did note that you talked about those OECD

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differentiations, but let's just stick, if we could, to science for a moment, so I'll ask that again:
Is a label on a product containing fluoropolymers which states only "PFAS" scientifically correct?
MR. TRUJILLO: Madam Chair; I would object; it's been asked and answered.
THE WITNESS: Yes.
HEARING OFFICER ORTH: All right. I think she just answered.
Go ahead, Mr. Rosebrough.
MR. ROSEBROUGH: Thank you.
Q. In addition to New Mexico's statutory definition of PFAS, I would like to discuss the scientific definition of PFAS:
We heard Testimony from Dr. DeWitt, and I know you're here today to rebut that Testimony, and I'm also aware that you are familiar with the Organisation for Economic Co-operation and Development, or OECD, because you testified about them

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today.
Dr. DeWitt testified that OECD utilizes a scientific definition similar to that used by the New Mexico Legislature, but that OECD allows for the possibility that other definitions may be used in a regulatory or management context. Do you agree with that general assessment of the OECD definition framework?
A. Yes. In fact, I think the OECD 2023 terminology paper specifically says that the OECD definition of PFAS is not intended to communicate harm or risk.
Q. Okay. Thank you.
In your Testimony here today, are you proposing the use of a different science-based definition from that used by OECD, or a non-science definition for regulatory purposes?
A. I think that the OECD intended for there to be a chemistry molecular structural definition of a PFAS, which is what New Mexico adopted as their

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definition of PFAS.
I think OECD clearly explains this concept of fit-for-purpose working scope in which another terminology, to communicate risk and to manage risk, was acceptable.
In fact, the OECD used the example of exemptions of certain PFAS substances from the European PFAS restriction proposal as an example of such fit-for-purpose terminology.
I think that you can be scientifically accurate and have a terminology intended for molecular and structural purposes, such as the OECD definition of 1 fully fluorinated carbon being a PFAS, and at the same time have a parallel definition intended for risk communication and risk management that is "fit-for-purpose working scope."
Q. Understood. Thank you.
But a label which only says "PFAS" doesn't communicate risk, does it.

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A. No, and I thank you for saying that, because that's exactly what I was trying to communicate.

If the purpose of this Rule is to inform customers so that they can make choices on consumer products that would reduce their risk or risk to the environment, the Erlenmeyer flask with those four letters is, in my opinion, not adequate to do that.

Q. Thank you.

Let's move into discussing risk to the environment and fluoropolymers:

In this proceeding Drs. Chapman and DeWitt presented evidence on the toxic effects caused by fluoropolymer production and disposal in addition to their use during their product life. They referred to this as the life cycle approach to considering fluoropolymers. I would like to talk to you about this life cycle concept:

Are you knowledgeable about the process of fluoropolymer

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production?

A. I'm not a Polymer Chemist, but yes, I am.

Q. Is it your understanding that hexafluoropropylene oxide dimer acid, which is known as HFPO-DA or GenX, is used in the production of fluoropolymers?

A. There are -- fluoropolymers, like most of the chemicals we have talked about today, is not a monolithic, one-recipe, one-size-fits-all category. HFPO dimer acid is 1 type of polymerization aid used by those fluoropolymer manufacturers who are making what's known as "fine powder fluoropolymers."

Fine powder fluoropolymers, or fine powder PPFE, are intended to have specific properties that enable them to be processed in a particular way. Other types of fluoropolymers that can be molded, for example, don't need to be manufactured in that way.

A recent evolution in

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technology is allowing for some fluoropolymers to be made in the absence of polymerization, fluorinated polymerization aids, which is a long way of saying, yes, HFPO dimer acid is used in the manufacture of some fluoropolymers.

Q. Thank you.

Is HFPO dimer acid itself a PFAS?

A. Yes.

Q. Does HPFO dimer acid have any known toxic effects?

A. Yes.

Q. So then considering that, is it an overgeneralization to state that all fluoropolymers are non-toxic?

A. If I may, I would like to refer to the life cycle of a fluoropolymer.

Q. Please.

A. The beginning stage of the life cycle in manufacturing is 1 stage. The end-use stage, when you actually have the fluoropolymer, is another stage. Then end-of-life, or disposal

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after the end of the intended useful life of the product is another stage of the life cycle.

When we talk about whether or not a fluoropolymer is hazardous, I'm talking about the fluoropolymer itself.

Q. Okay. Thank you.

You're not looking at the life cycle of the...

Let's say your Testimony here today only considers the fluoropolymer in between production and disposal; correct?

A. Well, yes and no.

In 2025 one of the papers that I referenced in my Testimony, my Written Testimony that was submitted, in 2025, Dr. Timmer and I published a paper in a peer-reviewed journal in which we looked at environmental fate and transport of a fluoropolymer. We demonstrated or provided data that shows that the fluoropolymer is not subject to biotic or abiotic degradation:

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It doesn't degrade;
It doesn't hydrolyze;
It doesn't photolyze;
It doesn't have oxidative degradation.
Microbial bacteria, whether it's aerobic or anaerobic, does not degrade the polymer and it doesn't absorb to soil.
We did that for the purpose of showing that it's possible to have a very persistent polymer that does not transform to a non-polymeric PFAS, and also to demonstrate that without that transformation and subsequent release of non-polymeric PFAS or substances of concern, persistence alone does not demonstrate toxicity or bioaccumulation.
It was an interesting process because we had to make this enormous supplement, which involved the publication of all of the reports from the laboratory, the independent accredited laboratory.
I included chemical analyses.

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I included the Reports and the data, as well as the publication of the manuscript which interpreted the data and showed application through polymer hazard assessment.
When we look at the chemical, physical, and biological properties that have been historically used for polymer hazard assessment dating back to the beginning of the Toxic Substance Control Act through the present, the chemical, physical, and biological properties of fluoropolymers are consistent with those polymers demonstrated to have low health and environmental hazard. In that respect that would be covering life as well as end-of-life.
Q. Thank you. I'm going to interrupt because I'm running short on time, and I want to ask you one more question:
Is it possible for non-polymer PFAS to be created when a fluoropolymer is incinerated?

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A. That's a very interesting question.
In recent publications, recent studies have shown that incineration at the appropriate temperatures and resonance time within the incinerator are capable of destroying or mineralizing the fluoropolymer to an efficiency of 99.9999 -- that's four 9s -- percent.
MR. ROSEBROUGH: May I ask a follow-up?
HEARING OFFICER ORTH: Yes.
MR. ROSEBROUGH: Thank you.
Q. What if they are done at an inappropriate temperature?
A. Incineration at temperatures less than that can produce what's known as polymers or products of incomplete combustion.
Q. And is that a non-polymer PFAS?
A. Yes, it could be, yes.
MR. ROSEBROUGH: Okay. No further questions. Thank you.

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HEARING OFFICER ORTH: All right. Thank you, Mr. Rosebrough.
We need to take our morning break, so let's come back at 10:55.
(The Evidentiary Hearing recessed from 10:40 a.m. to 10:55 a.m.)
HEARING OFFICER ORTH: Thank you, Dr. Henry.
Let's come back from the break.
Let's see here. Mr. Harris, do you have questions of Dr. Henry?
MR. HARRIS: No questions, Madam Hearing Officer.
HEARING OFFICER ORTH: He said, "No questions..."
Mr. Wetherbee, do you have questions of Dr. Henry?
MR. WETHERBEE: I do have 1 or 2 questions, Madam Hearing Officer.
HEARING OFFICER ORTH: Go ahead.
MR. WETHERBEE: All right. Thank you very much.
CROSS-EXAMINATION

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the reasons I'm talking today, is that PFAS is so big. Unless you tell people what you're talking about, they don't know. They assume it's all the same.

PFAS includes hundreds, if not thousands of compounds, so my motto is pretty simple, and I said that I think in my Testimony and elsewhere. To be clear, be specific and be descriptive when you're talking about PFAS.

Next chart.

You've heard this from us and you've heard this from Barb:

Fluoropolymers are fundamentally different. They meet the criteria of what we call "polymer of low concern," and as Barb said, and you might have missed it, but it's defined as:

"Polymer properties predictive of low health and environmental hazard."

I'll elaborate more when I do my Rebuttal, but you don't see the word "no" there. These are not

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"polymers of no concern," they are "polymers of low concern," and that's an important distinction.

What you need to do is you need to assess -- which is what we've done, and Barb did with her group in 2018. I did that with my colleagues in 2022 -- the world of fluoropolymers against 12, 13 different criteria.

What we look at is molecular weight or size.

We look at solubility in water.

We look at whether the structures are large and stable. Barb was talking about that in terms of degradation either in soil or in air.

Are they bioavailable?

Are they bioaccumulative?

Do they degrade into smaller pieces?

Are they precursors, which is a really, really important concept.

Environmental mobility concern generally does not apply to

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fluoropolymers because they are solids and they don't have solubility and they don't have vapor pressure.

Now is that an absolute? I can't say it's an absolute, but it's pretty good. It holds pretty good.

All right. One of things I want to talk about here, and I'm going to say it again in the Rebuttal in a little bit more detail, but there are 2 papers, one by Dr. Henry and her global colleagues in 2018, and another paper in 2022 by myself and 7 other global companies where we talk about "polymers of low concern."

These studies combined cover about 96% of the major global fluoropolymers, and include all the properties; residuals, monomers, extractables, and all the fundamental properties.

I am going to come back to that because it's really important, because there was a lot of questions yesterday and even today about life

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cycle.

Next chart.

There we go; two more charts, this one and the next one.

Before I finish with my final 2 slides, I want to reiterate that in both of the "polymer concern" papers both 2018 and 2022, that was online, and in 2023 in print. We not only discuss the end of life, which we heard today, the end of life properties of the fluoropolymer life cycle, but we also discuss beginning of life, which is how they are made, and end of life. I'll talk about the life cycle in a few minutes.

What do we see as the problems with the proposed Labeling? We've all talked about that for the past four days.

"All PFAS have the same properties and the same risk."

No, they don't, And a label that covers all of them, which is

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what's proposed, even though there are exceptions, doesn't make scientific sense in my view, and I am a scientist.

The scientific reality is that PFAS vary very significantly. Fluoropolymers differ fundamentally from the very small water soluble PFAS or the PFAAs that Barb talked about this morning.

There is growing scientific consensus that PFAS are diverse. As I said earlier, there are different groups that think about these, and I'm not sure we're ever going to get together. We, in good spirit, have spirited discussions and we end up agreeing to disagree.

Fluoropolymers -- and you heard this also -- are materially different from other PFAS because of the properties I talked about.

NMED's Warning Label approach fails to differentiate amongst the chemicals. It is inconsistent with

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current scientific understanding, some of which I talked about today. It's not scientific and robust.

You know, my question is, and we all have many questions, but I'm still trying to figure out what an Erlenmeyer flask with a "PFAS" symbol in it is really going to do here. I am not a label expert, but I've used many Erlenmeyer flasks in my day with "PFAS" in them. We're going to need to figure out what it really means in the end; not an expert there.

Last chart.

I'll finish up with the concept we've talked about 3 times already in this. It's important Because there's 2 major schools of thought:

The premise for treating PFAS the same as one, well, if you take it historically, historic or legacy long-chain, and you substitute it with another PFAS, that's called a "regrettable substitution."

"There is a large number

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of PFAS on the commercial market."

Well that's not really true and not conducive to classic risk assessment, and that's one of the reasons why we did our 2021 paper. We wanted to put perspective on how many of these chemicals really there were.

The big barrier, my view -- and I'm not an Epidemiologist, I'm an Organic Chemist. The big barrier to doing risk assessment is there's too many of them. The answer is no, there's not; that's what we concluded in 2021, but There's still a lot. Can you subgroup them and then do them as a risk assessment? That was our message coming out of that 2021 paper.

"The intrinsic property of persistence alone is sufficient justification."

That's what the one group thinks.

What you also heard Monday or Tuesday is that there's increased

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probability of adverse effects in human health and the environment if these are put in the environment Even if they are not bioavailable, not soluble, not bioaccumulative, and too big to do anything, but then there is the other side.

The other side is persistence is an intrinsic property, but not an intrinsic hazard, and it does not, by itself, imply an adverse effect just because it's persistent. It is not scientifically justified to classify inert solids, salts, liquids, and gases in a single class as 1, where properties like vapor pressure, environmental partitioning, aqueous solubility and hazard itself, as well as surface and material properties vary greatly. Thank you.

Q. Thank you, Dr. Korzeniowski.

Let me next turn to Rebuttal and ask you a few questions, and then we'll get into your summary.

A. All right.

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Q. Did you review the Direct Written Testimony of NMED's witnesses filed in this matter, particularly Dr. Chapman's, Dr. Olson's, and Dr. Ling's Testimonies?
A. I did.
Q. Did you also provide written Rebuttal Testimony of these NMED witnesses that was filed in this matter as ACC Exhibit 3?
A. I did.
Q. Do you have any corrections to your written Rebuttal Testimony?
A. They are not corrections, but what I did, and I discussed this with Dal, is I didn't change the headings, I didn't change the references, I just added some more text, so I'm happy to provide a copy of that to the Board and to the group.
Q. Okay. Thank you.
A. No corrections, it's just, again, the same references; no change in references, no change in context.
Q. Do you adopt your written

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Rebuttal Testimony, then, with those additions, as your own Testimony here today?
A. I do.
Q. Let's proceed with your summary.
For this round, before we begin, I'm going to ask you questions, and when you're done with your answer I'll ask you the next question?
A. Please do. Thank you.
Q. Thank you.
In your opinion, did the Testimony presented by NMED in this proceeding use scientifically precise terminology when referring to PFAS?
A. No.
The term "PFAS" is an umbrella term encompassing more than 14,000 substances, which we just talked about a few minutes ago, as included in databases and lists, but not in commerce, with very diverse chemical, physical, and toxicological properties.
To the best of my knowledge

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only a small subset of substances classified as PFAS are actually in commerce or of commercial relevance.
This set of commercially relevant PFAS, as I said a few minutes ago, likely numbers in the hundreds and not tens of thousands, and that's the Buck, et al., as a co-author with Bob and 2 others in 2021.
The Department's Testimony appeared to largely rely on data specific to PFAAs, or the per-fluoroalkyl acids, yet framed conclusions as applying to PFAS broadly. That approach does not reflect the scientific distinctions among PFAS subclasses and may create confusion in risk communication.
It would be helpful, and in most cases necessary, to be clear, specific, and descriptive when talking about PFAS and which ones are being referred to in each case.
As an example is the statement that:

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"PFAS are persistent and mobile."
This is an overgeneralization, as many PFAS are not considered mobile due to their very limited solubility and lack of vapor pressure.
Q. Does the scientific evidence presented by NMED support regulating or Labeling all products containing any substance with 1 fully fluorinated carbon atom in the same manner?
A. No.
A structure-based definition, which is what we're talking about, of PFAS that captures all substances with at least 1 fully fluorinated carbon does not align with hazards, exposure, and risk conclusions presented.
Much of the Department's Expert Testimony focused on PFAAs and certain related compounds. Extending those conclusions to all PFAS-containing products is not supported by the scientific data discussed in this proceeding.

Q. What types of PFAS substances have been phased out voluntarily or restricted via regulation in the United States?

A. I'm going to go off script for just a second:

We've heard that PFOA and PFOS are still sort of used and back in the U.S., and we can comment on that at some point.

PFOA and PFOS, and closely related substances, have been voluntarily phased out by industry. PFAS and related long-chain PFSAs, perfluorosulfonic acids, were phased out by the sole U.S. manufacturer in the early 2000s.

Nd PFOA and its related higher homologues and precursors were phased out through the U.S. EPA 2010/2015 PFOA voluntary Stewardship Program. This Program was global in nature and included the 8 major global manufacturers. The Program included both products and plant emissions.

The U.S. EPA, however, did grant a few SNUR Exemptions for PFOS-type products to be used until replacements were found. This could be the thinking that PFOS products are still coming back into the United States.

It has not been discussed here, but many of these products were used in very specific formulations. Like in the photographic industry, photolithography, the hydraulic fluid in your jets and your aircraft. There were no replacements even in the 2000s.

EPA provided at least 4 PFOS compound Exemptions, and then the right to manufacture outside the U.S., so that's like 5 SNURs. That might be the source of...

Listen, I don't know whether there's replacements yet; some of these were very difficult to requalify.

Some states are regulating products containing intentionally added

PFAS by restricting the distribution and selling of such products, and we've talked about this; Maine and Minnesota are 2 examples.

Q. How does this apply to international agreements such as the Stockholm Convention on Persistent Organic Pollutants?

A. The Stockholm Convention addresses specific non-polymeric PFAS, such as PFOA and PFOS, and other per-fluoroalkyl acids, normally hyperchain links like C9 to C20, or C9 to C21.

The Stockholm Convention does not address PFAS as a single undifferentiated class. Its listings reflect evaluations based on the combination of persistence, bioaccumulation, and toxicity rather than a blanket approach to all PFAS.

Q. Why is this distinction important for accurately characterizing the current Proposed Rule by the Department?

A. Suggesting that PFAS broadly

have been phased out or restricted implies a scientific and regulatory consensus that all PFAS present comparable risk.

In reality most regulatory actions have been narrowly focused on specific non-polymeric PFAS based on substance-specific evidence.

It should be noted that the New Mexico Legislature itself determined that certain classes of PFAS, such as fluoropolymers that are solids at standard temperature and pressure, do not present risk warning regulation, and NMED appropriately recognized that implementing Legislative judgment in the Proposed Rule.

It is important that the record and supporting Testimony accurately characterize those substances and not conflate them with PFAS classes that the Legislature expressly chose to treat differently.

Q. I'm going to move on to Labeling requirements now.

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A. Sure.
Q. Would Labeling all PFAS-containing products in the same manner accurately reflect differences in hazard, exposure, and potential risk?
A. No.
PFAS encompasses substances with significantly different chemical, physical, and toxicological properties that inform their uses and potential exposure and risk profiles. Applying a single uniform warning, like an Erlenmeyer flask with "PFAS" embedded in the middle implies comparable risk across all PFAS, which is not supported by the scientific distinctions discussed in this proceeding.
Q. How does that concern, then, apply to fluoropolymers?
A. Recognizing the diversity of physical and chemical properties within the PFAS family of chemistries is critical for understanding whether a particular PFAS, or subgroup of PFAS, might be of potential concern to human

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health or the environment.
Fluoropolymers do have a markedly different physical and toxicological characteristics compared to non-polymeric PFAS, such as PFOA or PFOS, even versus what you heard talked about this morning; these side-chain fluorinated polymers.
A general statement or pronouncement that, as a whole, PFAS are bioaccumulative, persistent, and mobile is simply incorrect and misleading.
In addition, 2 recently peer-reviewed publications that we talked about a few minutes ago -- 1 in 2018 by Dr. Barb Henry and her colleagues at Gore, and the other in 2022 online, and 2023 in print by myself and members of 7 global fluorocarbon manufacturers -- made a compelling case that fluoropolymers have a unique set of properties that set them apart from the other PFAS.
From one of the witness

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statements and Testimony on Monday, to label these important publication as tainted or conflicted because industry did them is a clear mischaracterization of the compelling analytical testing and toxicological data presented in these publications.
Another generalization noting that fluoropolymers in use or in life are not safe is directly contrary to what is published in the 2 journal articles cited above.
Directly contrary to what you have read in Exhibit 71 and heard on Monday in Testimony, fluoropolymer manufacturers have recognized that there are potential emissions of fluorinated species across the complete life cycle, manufacturing, which is beginning of life; end use or end life; and end of life disposal. That can be recycled; that can be incineration.
There are no disingenuous claims about no emissions and no

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claims about polymers of no versus low concern.
For example, the fluoropolymer manufacturing group in Europe called FPG have created and are executing a Manufacturing Emissions Reduction Program with defined goals.
You have also heard a fair amount of talk about the use of fluorinated polymerization aids. You heard that this morning, FPAs. They are no longer in use. These particular ones are generally no longer in use, not by at least the Stewardship companies. Some companies have replaced them with short-chain, and you heard that this morning also.
What is more important, though, about that is that the fluoropolymer industry has been working for years to eliminate the use of these fluorinated polymerization aids, and as of 2022 -- I don't have new data -- when we published our paper, about 55% of those FPAs have

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF STEPHEN H. KORZENIOWSKI, PH.D.

I, Stephen H. Korzeniowski, hereby declare and state as follows:

1. I have been retained by counsel for Plaintiffs as an expert in connection with the above-captioned litigation. I am a private consultant with nearly 50 years of experience in the chemical industry, including over 35 years in working with fluorotelomers and the last 10 years also working with fluoropolymers. I have over 25 years of experience in various industry groups, including multiple chair positions.

2. I have been asked to provide my expert opinions on: (1) the physical and chemical properties of PFAS as a class; (2) the diversity of physical and chemical properties within the PFAS class; and (3) the current state of scientific debate regarding how to define PFAS as a class.

3. I have actual knowledge of the matters stated herein. If called to testify in this matter, I would testify truthfully and based on my expert opinions.

4. In preparing this declaration, I reviewed the New Mexico Per- and Poly-Fluoroalkyl Substances Protection Act (the "PFAS Act"), N.M. Stat. § 74-15-1 *et seq.*, the New Mexico Environment Improvement Board's (the "EIB") implementing regulation, NMAC § 20.13.2, and all other documents cited herein. I am also relying on my scientific education and training, my industry experience, my research experience, and my knowledge of the scientific literature in the pertinent fields, as set out in my curriculum vitae, attached hereto as **Exhibit A**.

5. I served as an expert witness for Plaintiff American Chemistry Council in proceedings before the EIB regarding adoption of the PFAS labeling regulation. In that capacity, I provided both written testimony, as well as live testimony before the EIB. That testimony is attached hereto as **Exhibit B**.

6. The materials I have relied upon in preparing this declaration are the same types of materials that experts in my field regularly rely upon when forming opinions on these subjects. These materials are listed in **Exhibit C** to this Declaration.

7. I may wish to supplement the opinions stated in this declaration or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.

I. BACKGROUND AND QUALIFICATIONS

A. Qualifications

8. I hold a BA in Chemistry from Rutgers University (1972), a PhD in organic chemistry from Penn State University (1977), and an MBA from Widener University (1985). For the majority of my career, I was employed by DuPont. My roles at DuPont included Global Technology Manager for Surface Protection Solutions, and Global Business Manager for fluoroadditives and custom chemicals. I have extensive, first-hand knowledge of the regulatory, commercial, and scientific dimensions of fluorinated chemistries. Since leaving Chemours (a DuPont spinoff) in July 2015, I have remained active in matters related to fluorochemistry science and regulation. Currently, I am a self-employed consultant at BeachEdge Consulting, where I help businesses understand global trends in fluorotechnology and provide technical/scientific help as needed. I have published more than 50 papers, posters, and major talks throughout my industrial career, including 20 peer-reviewed journal articles, a majority of them focused on the topic of fluorotelomers.

B. Compensation

9. I am being compensated at a rate of $400 per hour. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

C. Previous Testimony

10. I have previously testified as an expert witness, including in the proceedings before the EIB regarding the regulation at issue in this litigation. My curriculum vitae, attached hereto as **Exhibit A**, identifies the proceedings in which I have previously provided expert testimony.

II. SUMMARY OF OPINIONS

11. PFAS is a broad category that may include more than 14,000 substances. The scientific community is still divided as to how to identify PFAS. The substances that fall under

the broad umbrella term "PFAS" all vary with respect to chemical and physical properties. And the differences across substances have a direct impact on how each PFAS interacts with human health and the environment.

12. I understand that New Mexico law defines PFAS broadly: as a "substance in a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." N.M. Stat. § 74-15-2(S). That is a very broad definition, and it is not the only one used to define PFAS. I also understand that New Mexico bans the sale and distribution of certain products that it defines as PFAS, but it has exemptions for certain categories and any products designated by regulators as a "currently unavoidable use"—meaning the use of PFAS in the product is "essential for health, safety, or the functioning of society" and "alternatives are not reasonably available." *Id.* §§ 74-15-2(H), 74-15-3(A)(15).

13. I also understand that, using the very broad definition provided by state law, the EIB adopted a rule requiring a warning label on *all* products containing intentionally added PFAS, even those exempted from the PFAS Act's phased statutory ban.

14. This approach fails to provide for any differentiation among different types of PFAS, including hazards, toxicity, or means of exposure. There is no scientific basis for treating all PFAS alike. To the contrary, New Mexico's approach contradicts the growing scientific consensus that all PFAS are not the same and should not be assumed to possess the same properties.

15. For example, fluoropolymers—a subcategory of PFAS that includes PTFE (polytetrafluoroethylene)—are large molecules that are neither water-soluble nor fat-soluble. This means they do not get into your drinking water. These high molecular weight polymers are too large to cross cell membranes. As a result, they are neither absorbed into nor accumulated in the human body. They are also regarded as stable and resist environmental degradation. This makes

them different from other types of PFAS—for example, non-polymeric, water-soluble PFAS, and precursors to perfluorocarboxylates (PFCAs), many of which have been voluntarily phased out by manufacturers.

16. PFAS encompass substances with significantly different chemical, physical, and toxicological properties that inform their uses, potential exposure, and risk profiles. Applying a single, uniform warning overtly implies comparable risk across all PFAS, which is not supported by any of the publicly available scientific evidence.

III. BACKGROUND

A. PFAS is a Broad Category of Substances and Encompasses Materials that are Critical Components in Everyday Products

17. Per- and polyfluoroalkyl substances—collectively referred to as "PFAS"—is a broad term for a category of more than 14,000 substances with diverse physical, chemical, and toxicological properties.

18. There is no universal definition of a "PFAS." At their most general definition, however, PFAS are characterized simply by the presence of covalent bonds between carbon and fluorine atoms, the strongest single bond in organic chemistry. The broadest definition says that a PFAS must have one single fully fluorinated carbon, such as a $-CF_3$ or $-CF_2-$. A simple figure that

shows the evolution of the definition is given below.

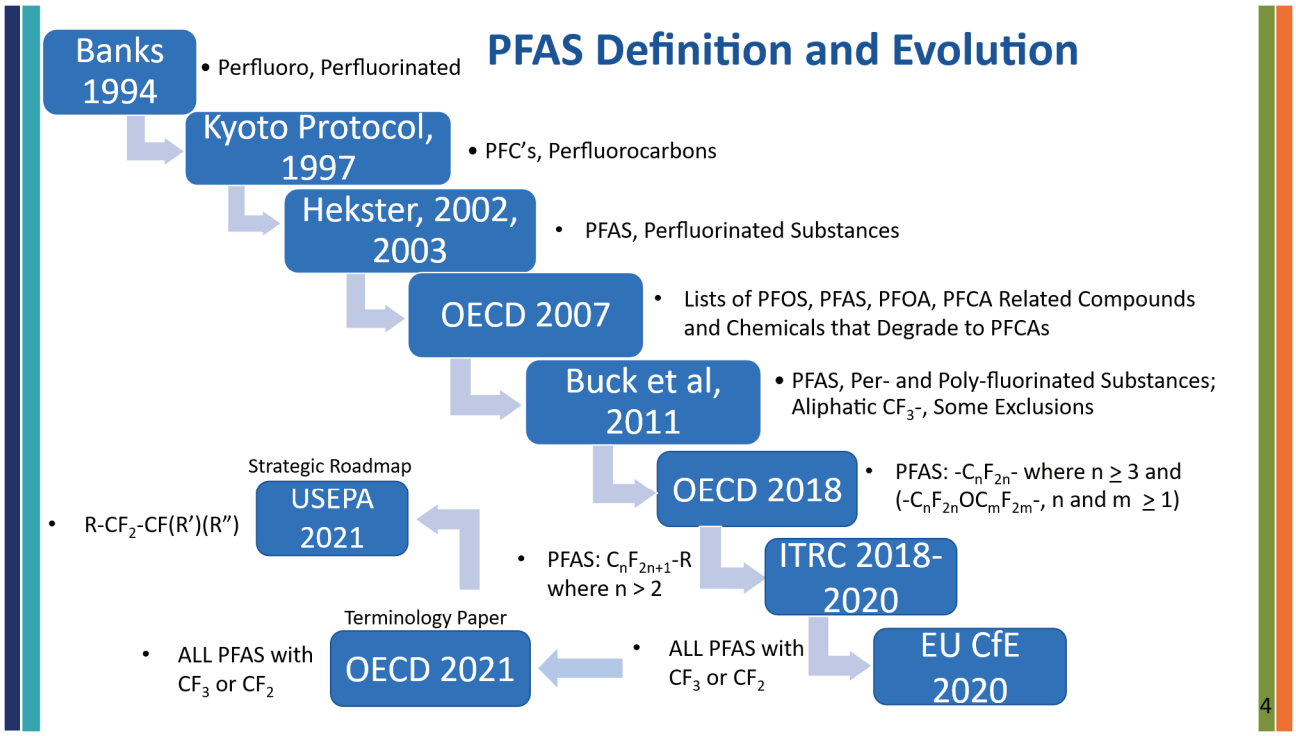

Figure 1. PFAS Definition and Evolution

19. As a result of this strong bond and other properties, many PFAS are water-resistant, grease-resistant, and chemically and thermally stable. These properties make PFAS uniquely useful across industries worldwide. Fluoropolymers, for example, are often characterized as having a unique combination of properties that provide the performance properties required in many end-use applications.

20. Many applications of PFAS involve highly technical materials that serve as critical enablers of industries underpinning modern life. In numerous contexts—such as healthcare, energy systems, transportation, electronics, and other infrastructure—these substances are essential to safety, durability, or performance, and viable alternatives are not reasonably available without compromising function or introducing other risks. As noted above, fluoropolymers have a set of properties that make them unique. While non-fluorinated polymers can offer some of the

desired properties, none of them can match the required end-use properties such as durability, dielectric properties, mechanical strength, low coefficient of friction, weatherability, barrier properties, optical clarity, chemical and thermal stability, among others. And fluoropolymers are used in critical applications precisely because they possess these properties, in a range of different products essential to everyday life: in the automotive industry, aerospace, medical devices, oil and gas and chemical/pharmaceutical processing, filtration media, electronics, batteries, semiconductors and internet and wireless communications (*i.e.*, 5G technology in our cell phones).

B. There is an Unresolved Scientific Debate About What Substances Qualify as "PFAS"

21. There is a legitimately unresolved scientific debate about how to define which substances can be described as PFAS. Some scientists, regulators, non-governmental organizations, and others apply broad definitions that capture more than 14,000 potential PFAS substances, while others use more precise definitions that encompass hundreds of substances. But these definitions ultimately do not reflect the differences in chemical properties, toxicology, health hazards, or environmental fate-and-transport effects.

22. One of the earliest definitions of PFAS was developed in 2011 by a multidisciplinary group of scientists led by Dr. Robert C. Buck. Under that definition, PFAS were defined as "aliphatic substances containing one or more C atoms on which all the H substituents presented in the nonfluorinated analogues from which they are notionally derived have been replaced by F atoms, in such a manner that … [a molecule] contains the perfluoroalkyl moiety C_nF_{2n+1}." I refer to this as the "Buck Definition." Or, in plain English, a PFAS molecule has a tail or backbone made entirely of carbon and fluorine, with no hydrogens. This fully fluorinated structure, either tail or backbone, is not expected to break down under normal operating or generally expected or encountered environmental conditions. Robert C. Buck et al., *Perfluoroalkyl*

and Polyfluoroalkyl Substances in the Environment: Terminology, Classification, and Origins, 7 Integrated Envn. Assessment & Mgmt. 513, 515 (2011). See Figure 1.

23. The Organisation for Economic Co-operation and Development defines "PFAS" as "fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group ($–CF_3$) or a perfluorinated methylene group ($–CF_2–$)." Zhanyun Wang et al., *A New OECD Definition for Per- and Polyfluoroalkyl Substances*, 55 Envtl. Sci & Tech. 15575, 15576 (2021). Again, in plain English, that means a chemical is a PFAS if the molecule contains at least one carbon atom that is fully fluorinated—the carbon can carry three fluorines ($–CF_3$), or two ($–CF_2–$). The OECD definition differs from the Buck Definition because it does not require the entire tail to be fully fluorinated, and it does not require the molecule to be shaped like a chain. See Figure 1.

24. Fluoxetine, the active ingredient in the antidepressant Prozac, is one example of a chemical that would qualify as a PFAS under the OECD definition, but not the Buck Definition. Emily Hammel et al., *Implications of PFAS Definitions Using Fluorinated Pharmaceuticals*, 25 iScience 104020 (2022).

25. The U.S. Environmental Protection Agency has a different view of how to define PFAS. In 2021, as part of the process for putting out a reporting rule under the Toxic Substances Control Act, the EPA provided a structural definition of PFAS: "per- and polyfluorinated substances that structurally contain the unit R-(CF2)-C(F)(R′)R″. Both the CF2 and CF moieties are saturated carbons and none of the R groups (R, R′ or R″) can be hydrogen." *TSCA Section 8(a)(7) Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances*, 86 Fed. Reg. 33,926, 33,929 (June 28, 2021). The EPA's 2021 definition differs from

the Buck and OECD definitions because it requires a pair of adjacent carbon-based moieties—one with two fluorines, the other with one—that are linked to one another.

26. In 2023, when EPA finalized the rule, it expanded the definition of PFAS to adopt two other structures: (1) "R–CF2OCF2-R′, where R and R′ can either be F, O, or saturated carbons," and (2) "CF3C(CF3)R′R″, where R′ and R″ can either be F or saturated carbons." *Toxic Substances Control Act Reporting and Recordkeeping Requirements for Perfluoroalkyl and Polyfluoroalkyl Substances*, 88 Fed. Reg. 70,516, 70,518 (2023). The first definition captures two fluorinated carbons that are connected by oxygen; the second is intended to cover a bundle of fluorinated carbons. In adopting the final rule, the EPA stated that it deliberately decided that it was "not appropriate" to adopt the OECD definition, because the "chemical substances covered by the OECD definition are unlike the structures of the PFAS of concern … which have more fluorinated carbons are more likely to be present in the environment." *Id.* at 70,533.

27. Applying just these three definitions of PFAS would lead to inconsistent results for a broad range of products. Take, for example, HFO-1234yf (2,3,3,3-tetrafluoropropene, or "R-1234yf"). R-1234yf is the refrigerant used for the air conditioning systems in most cars manufactured in the United States today; it is considered an eco-friendly successor to R-134a, which is commonly known as Freon.

28. R-1234yf is a three-carbon molecule. One carbon holds two hydrogen atoms, and it is double-bonded to another carbon that holds a single fluorine. The single-fluorine carbon is bonded on the other side to a carbon holding three fluorine.

29. R-1234yf would not be considered PFAS at least under the EPA's definition, because it does not meet any of the three physical structures identified by the EPA. The EPA definition excludes unsaturated fluorinated compounds (olefins) and single fluorinated

compounds. Buck et al.'s 2011 classic peer-reviewed publication did exclude compounds that were registered and regulated by other agencies such as the FDA and those that fall under the Montreal Protocol (i.e., refrigerants).

30. New Mexico, in effect, adopted the definition of PFAS put forth by OECD. All New Mexico requires is "at least one fully fluorinated carbon atom." The OECD's definition is also based on a fully fluorinated carbon atom.

31. Needless to say, because the scientific community does not yet have a consensus on what a PFAS is, there is no consensus that all PFAS should be assumed to have the same properties and treated the same. To the contrary, if any consensus is emerging, it is that all PFAS are *not* the same, and that PFAS chemicals should not be uniformly assumed to possess the same properties.

32. PFAS chemicals are grouped together mainly because of their inherent persistent quality and the common carbon-fluorine bond, but that does not mean the same broad brush should be used to paint all PFAS as toxic and hazardous. Persistence, by itself, does not make a substance hazardous, and calling a chemical hazardous based on its persistent quality alone contradicts the existing science.

33. For example, Anderson et al. reports on the opinions of an expert panel "convened to provide insight and guidance on per- and polyfluoroalkyl substances (PFAS) grouping for the purposes of protecting human health from drinking water exposures, and how risks to PFAS mixtures should be assessed." Janet K. Anderson, et al., *Grouping of PFAS for human health risk assessment: Findings from an independent panel of experts*, Regul. Toxic. & Pharmacol., Oct. 2022, at 1. Most of the panelists agreed that PFAS should not be grouped together for risk

assessment purposes and that it is scientifically inappropriate to assume equal toxicity/potency across the diverse class of PFAS. *Id.* at 7.

34. The OECD, for its part, also recognizes that not all PFAS are the same. In 2021, it issued a report developed under the auspices of its Chemicals and Biotechnology Committee that states, "PFASs are a chemical class with diverse molecular structures and physical, chemical and biological properties, it is highly recommended that such diversity be properly recognized and communicated in a clear, specific and descriptive manner. The term 'PFASs' is a broad, general, non-specific term, which does not inform whether a compound is harmful or not, but only communicates that the compounds under this term share the same trait for having a fully fluorinated methyl or methylene carbon moiety." OECD, *Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance* 8 (July 9, 2021), https://one.oecd.org/document/ENV/CBC/MONO(2021)25/En/pdf.

35. The Drinking Water and Groundwater Protection Division of Vermont's Department of Environmental Conservation was specifically charged by the state legislature to develop a class regulation or to explain why such a regulation was not possible. In its final report, the Department said: "The Review Team spent over a year deliberating, researching, and discussing the potential to regulate PFAS as a Class. After reviewing the current peer-reviewed literature, as well as the available toxicology data for PFAS, the Review Team determined that at the current time it is not feasible to regulate PFAS as a Class." Agency of Nat. Res., Dep't of Env't Conservation, *Drinking Water and Groundwater Protection Division. Advance Notice on the Regulation of Perfluoroalkyl, Polyfluoroalkyl Substances (PFAS) as a Class* (August 14, 2020), https://dec.vermont.gov/sites/dec/files/PFAS/20180814-PFAS-as-a-Class.pdf.

36. In a Congressionally-mandated report, the U.S. Department of Defense recognized the diversity of PFAS chemistries, cautioning that "Congress and the Federal regulatory agencies should avoid taking a broad, purely 'structural' approach to restricting or banning PFAS. It is critical that future laws and regulations consider and balance the range of environmental and health risks associated with different individual PFAS, their essentiality to the U.S. economy and society, and the availability of viable alternatives." Dep't of Def., *Report on Critical Per- and Polyfluoroalkyl Substance Uses* (Aug. 2023), https://www.acq.osd.mil/eie/eer/ecc/pfas/docs/reports/Report-on-Critical-PFAS-Substance-Uses.pdf.

37. The U.S. Food and Drug Administration ("FDA") has similarly recognized that all PFAS are not the same. Based on a review of more than 1,700 published and peer-reviewed scientific articles, FDA concluded that fluoropolymers do not present health or safety concerns when used in medical devices. FDA, *PFAS in Medical Devices* (Aug. 6, 2025), https://www.fda.gov/medical-devices/products-and-medical-procedures/pfas-medical-devices.

C. Fluoropolymers are Chemically Distinct From Other Categories of PFAS

38. As noted above, fluoropolymers are a category of PFAS known as fluorinated polymers and include materials such as PTFE (polytetrafluoroethylene) and PVDF (polyvinylidene fluoride). These two fluoropolymers are the number-one and number-two fluoropolymers globally. They provide an example of why the identification of PFAS is such a complicated and controversial area, transcending chemical and physical properties alone given how unique these two compounds are and their myriad use cases (which are valuable and important).

39. Fluoropolymers do meet the structural definitions for PFAS. But knowing the structure alone is not nearly enough to determine whether a molecule is harmful to human health and the environment. And making assumptions about hazard is simply bad science.

40. I was the lead author of a paper first published in 2022, which explained why fluoropolymers should be of low concern despite the fact that they meet some definitions of PFAS. Stephen H. Korzeniowski et al., *A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers*, 19 Integrated Env't Assessment & Mgmt. 326 (2023). I, along with my co-authors (including Dr. Buck, who was the lead author of the study that provided the Buck Definition), concluded that structural makeup was not enough to determine what might cause harm. Instead, we proposed evaluation of a broad range of chemical properties to assess the level of concern that should be ascribed to a PFAS chemical: (1) polymer composition (structure and elemental composition); (2) molecular weight; (3) molecular weight distribution; (4) particle size; (5) percent of low molecular weight oligomers; (6) electrical charge; (7) reactive functional groups; (8) presence of low molecular weight residues that might leach from the PFAS; (9) resistance to physical, chemical, and biological transformation; and (10) thermal stability. This scientific work built on the prior peer-reviewed paper of Dr. Barb Henry and her colleagues. Barbara J. Henry et al., *A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers*, 14 Integrated Env't Assessment & Mgmt. 316 (2018).

41. In the 2022 Korzeniowski et al. publication, the various fluoropolymers were assessed against over ten criteria to determine whether these polymers would be considered "polymers of low concern." Each of the 14 assessed fluoropolymers met the criteria to be considered polymers of low concern for human health and the environment. This and the prior study noted above by Henry et al. in 2018 encompass approximately 96% of the global fluoropolymer market. These two studies are considered to be "In-Life" studies that deal with the fluoropolymers during their industrial and consumer use.

42. These fluoropolymers are large molecules, meaning they have a large molecular weight. The European Union has concluded that "most potential health concern polymers have an average molecular weight" of less than 1,000 Da (Daltons), and oligomer content of more than 1%. *See* Henry et al. at 323. Fluoropolymers are somewhere between *50 to 300 times larger* than the molecules identified as polymers of health concern. Large molecules such as fluoropolymers are not water-soluble and cannot cross cell membranes, meaning their ability to adversely affect critical bodily functions has a low to no probability.

43. Another factor is the degree of reactivity of the polymer: the more reactive the polymer is, the higher the association with adverse effects on human health and the environment. Fluoropolymers don't have the atoms or group of atoms necessary for a reaction to occur—what our paper described as "reactive functional groups."

44. Fluoropolymers are also resistant to physical, chemical, and biological transformation—in other words, they remain stable and do not break down. They are abiotically stable, meaning sunlight, water, and oxygen do not cause fluoropolymers to break down. They are biotically stable, meaning bacteria and enzymes (and other organisms and biological molecules) cannot break down fluoropolymers, either. And they are thermally stable up to certain specified high temperatures that significantly exceed the range of normal use conditions. Each fluoropolymer has a given operating temperature, and these guidelines must be followed to maintain the fluoropolymer integrity. That means the current evidence shows fluoropolymers do not break down in a manner that they can become a risk to human health or the environment under normal operating conditions.

45. However, not all PFAS have these "low concern" characteristics, even if they may have some structural similarities with fluoropolymers (because they have one or more fully

fluorinated carbons). Consider perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). PFOA and PFOS share some overlap with fluorinated polymers in that all three are made of several fully fluorinated carbons—the carbon-fluorine bond makes them "persistent." But PFOA and PFOS differ vastly on the factors described above. They are, for example, much, much smaller in size than fluoropolymers—small enough to enter the human body in various environmental compartments (air and water). Because of their size and water solubility, they are much more mobile in the environment. Both PFOA and PFOS have been voluntarily phased out by industry. *See* EPA, *Fact Sheet: 2010-2015 PFOA Stewardship Program* (Feb. 26, 2026), https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program; EPA, *EPA And 3M Announce Phase Out of PFOS* (May 16, 2000), https://perma.cc/KA6N-WANC.

46. Because of these differences, I, along with other scientists who study fluoropolymers and other chemicals that might be categorized as "PFAS," disagree with any approach to PFAS that groups fluoropolymers with other characteristically different chemicals, like PFOA and PFOS. New Mexico's approach to PFAS does just that.

IV. OPINIONS

47. The regulation's generalization of PFAS is not supported by science and runs contrary to a growing scientific consensus that all PFAS are not the same and they should not be assumed to possess the same properties.

48. The regulation's warning labeling provisions are based on an incorrect understanding and interpretation of PFAS chemistry. A single PFAS label does not differentiate between the various types of PFAS and therefore implies all PFAS are the same—which is directly contrary to the current scientific evidence.

49. EIB's approach appears to be based on an assumption that all PFAS are the same and therefore possess the same properties and potential risk to human health and the environment. As explained above, that is simply not the case.

50. PFAS encompass substances with significantly different chemical, physical, and toxicological properties that inform their uses, potential exposure, and risk profiles. There is a legitimately unresolved scientific debate about what substances qualify as "PFAS," with some definitions encompassing more than 14,000 substances and others encompassing significantly fewer substances.

51. At the same time, there is a growing scientific consensus around the diversity of PFAS chemistries and that such diversity should have been accounted for in PFAS regulation. Experts agree that PFAS should not be grouped together for risk assessment purposes and that it is scientifically inappropriate to assume equal toxicity/potency across the diverse class of PFAS. *See supra* ¶¶ 33-37.

52. Recognizing the diversity of physical and chemical properties within the PFAS family of chemistries is critical for understanding whether a particular PFAS or subgroup of PFAS might be of potential concern to human health or the environment. For example, fluoropolymers have markedly different physical and toxicological characteristics compared to non-polymeric PFAS. As peer-reviewed journal articles have shown, fluoropolymers have a unique combination of properties that set them apart from other PFAS. In particular, fluoropolymers are neither bioavailable nor bioaccumulative, nor do they transform into non-polymeric PFAS under normal environmental conditions. As such, they are properly classified as polymers of low concern for human health or environment.

53. EIB's approach, which fails to differentiate among different types of PFAS, stands in stark contrast to the scientific consensus that PFAS is a diverse class of substances with vastly different physical and chemical properties.

54. PFAS are not monolithic in their properties or uses. A uniform, one-size-fits-all warning would obscure these distinctions and could mislead consumers into believing all of these materials pose similar risks, which is not consistent with the available scientific evidence.

55. In many contexts—such as healthcare, medical devices and implants, electronics, telecommunications, automotive and aerospace transportation, and energy systems, chemical processing and pharmaceuticals—viable alternatives to PFAS are not reasonably available without significantly compromising critical functionality or introducing other often substantial risks.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 1st day of July, 2026, in Media, Pennsylvania.

DocuSigned by:
Stephen Korzeniowski
51FA74897414441...

Stephen H. Korzeniowski, Ph.D.

EXHIBIT A

STEPHEN H. KORZENIOWSKI

Media, PA 19063 and Point Pleasant Beach, NJ 08742 **610.316.8205**
www.beachedgeconsulting.com **shkorzo@gmail.com**

Consulting Business: Aug 2015 - Present

Adjunct Professor at Penn State Brandywine teaching Corporate Finance	Jan 2016-May 2021
Consultant in Fluorotechnology Industry with two major active clients, one in the AFFF industry and the other in various fluorotechnology end-uses	Jan 2016 - Present
Participant and Member of the Fire Fighting Foam Coalition	Jan 2016 - Present
Participant in the Industry Group FluoroCouncil (now PFP and ATCS) for the two two noted clients advising on Global PFAS Regulatory and Science Matters	Jan 2016 - Present
Science Work Group Chairman of FluoroCouncil	Jan 2017-Dec 2019
ITRC PFAS Team, Analytical and AFFF Workgroup	2017 - Present

EXPERIENCED TECHNOLOGY AND BUSINESS MANAGER: 1994 - 2015

Project Management & Major Technology Program Leader

Led multiple cross-functional teams through complex projects and a global technology transformation, meeting critical milestones and driving delivery of on-time, sustainable results. Expert in business and technology strategic options creation and execution, with critical results delivered year-over-year. Recognized subject matter expert in fluorotelomer technology industry; sought out to tackle and resolve difficult issues by business and industry groups. Forward thinker who fosters collaboration and has demonstrated multiple team development successes.

Core competencies:

- Plant project and integrated supply chain management
- Complete global transformation of 'long-chain' to 'short-chain' Capstone® fluorotelomer products
- Technology and business interface with global regulatory agencies
- Leadership roles in Telomer Research Program, FluoroCouncil and Fire Fighting Foam Coalition
- Product stewardship and advocacy
- Profit & loss and strategy development for surfactants & coatings business
- Commercial business development, including acquisition expertise

PROFESSIONAL EXPERIENCE

THE CHEMOURS COMPANY, Wilmington, DE (July 2015)
E.I. DU PONT DE NEMOURS & CO, INC., Wilmington, DE

Global Technology Manager, Surface Protection Solutions 2002 – 2015

- Oversaw research & development and plant project execution for 4 major projects, including: 2 at plants, 1 integrated complete supply chain transformation and 1 international technology transfer.
- Led completion of Capstone® products technology development and market introductions in textiles, coatings, AFFF surfactants and telomer intermediates.
- Acted as a global regulatory agency interface primarily in USA, Germany, Canada, England as well as Australia, S. Korea and China.

- Led fluorotelomer business' US EPA 2010 / 2015 voluntary product stewardship program through developing and execution of detailed plant and product changes to essentially eliminate unwanted impurities, unwanted long-chain materials and minimize all global plant emissions.
- Led fluorotelomer technology global stewardship program and supply chain transformation that helped provide for a sustainable product line and meet all critical regulatory deadlines for both the US and Canada.
- Earned Corporate Marketing Excellence, Engineering Excellence and Sustainable Growth awards. Selected as the only DuPont "Triple Crown" award winner.

Global Business Manager, Fluoroadditives and Custom Chemicals 1996 – 2002

- Directed business and marketing responsibility for multiple complex small business units with total revenues of >$50MM.
- Detailed fluoroadditives business analysis and strategy development, laying foundation for significant future growth.
- Managed DuPont Chemoswed Active Pharmaceutical Intermediates site in Malmo, Sweden, directing all business and marketing activities.
- Received Corporate Marketing Excellence Award for Stone & Tile business development.

Business Development Manager, Specialty Chemicals 1994 – 1996

- Performed commercial business development to scope out custom chemicals as a strategic segment. Ultimately decided not to move forward.
- Completed long-range strategic planning, resulting in complete restructuring of business unit into a significantly healthier set of businesses.
- Executed pharmaceutical acquisition to help build out custom chemicals capability.

Prior Positions Held: 1977 - 1994

Marketing Manager, White Pigments

Regional Sales Manager, White Pigments

Tech Service / Market Development / R&D Manager

Field Sales, Industrial Chemicals

Research & Development/Technical Service / Market Development

Business and Financial Analysis

EDUCATION

MBA, Finance / Marketing, Widener University, Chester, PA

PhD, Organic Chemistry, Penn State University, University Park, PA

BA, Chemistry, Rutgers University, New Brunswick, NJ

ADDITIONAL TRAINING / EXPERIENCE

Industry group leadership: Global Regulatory Interface Experiences (2000 – 2015)

Former business manager of spouse-owned veterinary business; responsibility for all business, marketing and personnel matters of 6-doctor AAHA-certified hospital (1984 – 2011)

Stephen H. Korzeniowski, Ph.D

Record of Expert Testimony (as of July 1, 2026)

1. *In Re Aqueous Film-Forming Foams Products Liability Litigation*, No. 2:18-mn-2873 (D.S.C.) (deposition testimony).

2. *City of Rome, Georgia v. 3M Company*, No. 19CV02405JFL003 (Ga. Super. Ct., Floyd Cnty.) (deposition testimony).

3. *Parris v. The 3M Company*, No. 4:21-cv-40 (N.D. Ga.) (deposition testimony).

4. *State of Vermont v. 3M Company*, No. 2:25-cv-660 (D. Vt.) (deposition testimony).

5. *Woodward Iodine Corporation vs. E. I. du Pont de Nemours and Company* (deposition and arbitration hearing testimony).

6. *New Jersey Dep't of Env't Protection v. E. I. Du Pont de Nemours & Co.*, No. 1:19-cv-14758 (D.N.J.) (deposition and in-court testimony).

7. *Town of Lyerly v. 3M Company*, No. 24SCA4052 (Ga. Super. Ct., Chattoga Cnty.); *Moss Land Co., LLC v. City of Calhoun*, No. 24CV73929 (Ga. Super. Ct., Gordon Cnty.); *Brooks v. City of Calhoun*, No. 24CV74289 (Ga. Super. Ct., Gordon Cnty.); *Stephens v. 3M Co.*, No. 25CV75072 (Ga. Super. Ct. Gordon Cnty.) (deposition testimony).

8. *Moss Land Co., LLC v. City of Calhoun*, No. 24CV73929 (Ga. Super. Ct., Gordon Cnty.) (deposition testimony).

9. *The Water Works and Sewer Board of the Town of Centre v. 3M Company*, (Ala, Cherokee Cnty.) (trial testimony).

10. *In the Matter of Proposed Adoption of 20.13.2 NMAC, Per- and Polyfluoroalkly Substances in Consumer Products*, N.M. Env. Dep't, Env't Improvement Bd. Dkt. No. 25-61(R) (administrative hearing testimony).

Upcoming:

1. *Christiana Ins. LLC EIDP, Inc. v. Everen Specialty Ltd.* (arbitration testimony)

EXHIBIT B

ACC Exhibit 2

STATE OF NEW MEXICO
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED
ADOPTION OF 20.13.2 NMAC
Per- and Poly-Fluoroalkyl Substances in Consumer Products **No. EIB 25-61(R)**

DIRECT TESTIMONY OF DR. STEPHEN KORZENIOWSKI

ON BEHALF OF AMERICAN CHEMISTRY COUNCIL

January 16, 2026

DIRECT TECHNICAL TESTIMONY OF
DR. STEPHEN KORZENIOWSKI

EIB 25-61 (R)

My name is Stephen Korzeniowski, and I am submitting direct testimony on behalf of the American Chemistry Council. I am a self-employed consultant. My company is BeachEdge Consulting. For the majority of my career, I was employed by DuPont. Among my roles was Global Technology Manager for surface protection solutions and Global Business Manager for fluoroadditives and custom chemicals. I have extensive, first-hand knowledge of the regulatory, commercial, and scientific dimensions of fluorinated chemistries. Since retiring in 2015, I have remained active in the matters related to fluorochemistry science and regulation. I hold a PhD in organic chemistry from Penn State University. My resume and qualifications are provided in ACC Exhibit 1.

I have reviewed the text of the proposed rule in this matter, particularly the text provided as an exhibit to the Petition filed by the New Mexico Environment Department ("NMED") on October 8, 2025. My testimony will refer to that version as the "proposed rule." The purpose of my testimony is to support the ACC's position that the warning label provisions in the proposed rule treat all PFAS as if they are the same, when PFAS are in fact a diverse group of substances with different physical and chemical properties. The proposed rule would require that all products, including those exempt from the reporting and currently unavoidable use provisions of the law, bear a warning label, which implies that all types of PFAS and all types of products containing intentionally added PFAS present similar concerns. However, recognizing the diversity of physical and chemical properties within the PFAS family of chemistries is critical for understanding whether a particular PFAS or sub-group of PFAS might be of potential concern to human health or the environment.

NMED's generalization of PFAS is not supported by science and runs contrary to a growing scientific consensus that all PFAS are not the same and should not be assumed to possess the same properties. For example,

a. Anderson et al. reports on the opinions of an expert panel "convened to provide insight and guidance on per- and polyfluoroalkyl substances (PFAS) grouping for the purposes of protecting human health from drinking water exposures, and how risks to PFAS mixtures should be assessed." Most panelists agree that PFAS should not be grouped together for risk assessment purposes and that it is scientifically inappropriate to assume equal toxicity/potency across the diverse class of PFAS.

b. Two peer-reviewed scientific papers, one for which I was the primary author, demonstrate that fluoropolymers, a specific subset of PFAS, meet criteria that can be used to identify polymers of low

concern for human health or environment.[1,2] Those criteria include consideration of chemical properties such as:

- Polymer composition (structure and elemental composition);
- Molecular weight;
- Molecular weight distribution (consistency of molecule size in a sample);
- Particle size;
- Percent of low molecular weight oligomers;[3]
- Electrical charge;
- Reactive functional groups;
- Presence of low molecular weight residues that might leach from the fluoropolymer;
- Resistance to physical, chemical, and biological transformation; and
- Thermal stability.

The authors of the two papers conclude that fluoropolymers are large, stable, and insoluble substances that have properties fundamentally different from those of non-polymeric, water soluble PFAS. Because fluoropolymers are insoluble in water, concerns about environmental mobility do not apply to fluoropolymers. Fluoropolymers are neither bioavailable nor bioaccumulative and do not transform into non-polymeric PFAS in the environment.

c. In 2021, the 38-nation Organisation for Economic Co-operation and Development (OECD) issued a report developed under the auspices of its Chemicals and Biotechnology Committee that states, "PFASs are a chemical class with diverse molecular structures and physical, chemical and biological properties, it is highly recommended that such diversity be properly recognized and communicated in a clear, specific and descriptive manner. The term "PFASs" is a broad, general, non-specific term, which does not inform whether a compound is harmful or not, but only communicates that the compounds under this term share the same trait for having a fully fluorinated methyl or methylene carbon moiety."[4]

[1] Henry, B.J., Carlin, J.P., Hammerschmidt, J.A., Buck, R.C., Buxton, L.W., Fiedler, H., Seed, J. and Hernandez, O. (2018), A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers. Integr Environ Assess Manag, 14: 316-334, https://doi.org/10.1002/ieam.4035.
[2] Korzeniowski, S.H., Buck, R.C., Newkold, R.M., El kassmi, A., Leganis, E., Matsuoka, Y., Dinelli, B., Beauchet, S., Adamsky, F., Weilandt, K., Soni, V.K., Kapoor, D., Gunasekar, P., Malvasi, M., Brinati, G. and Musio, S. (2022), A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. Integr Environ Assess Manag, https://doi.org/10.1002/ieam.4646.
[3] Oligomers are a polymer or polymer intermediate containing relatively few structural units. See https://www.merriam-webster.com/dictionary/oligomer. Accessed January 14, 2026.
[4] Organisation for Economic Co-operation and Development. Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance. 2021. OECD Environment, Health and Safety

d. The Drinking Water and Groundwater Protection Division of Vermont's Department of Environmental Conservation was specifically charged by the state legislature to develop a class regulation or to explain why such a regulation was not possible. In its final report, the Department said, "The Review Team spent over a year deliberating, researching, and discussing the potential to regulate PFAS as a Class. After reviewing the current peer-reviewed literature, as well as the available toxicology data for PFAS, the Review Team determined that at the current time it is not feasible to regulate PFAS as a Class."[5]

e. In a Congressionally mandated report, the Department of Defense recognized the diversity of PFAS chemistries, cautioning that "Congress and the Federal regulatory agencies should avoid taking a broad, purely 'structural' approach to restricting or banning PFAS. It is critical that future laws and regulations consider and balance the range of environmental and health risks associated with different individual PFAS, their essentiality to the U.S. economy and society, and the availability of viable alternatives."[6]

f. The U.S. Food and Drug Administration (FDA) has similarly recognized that all PFAS are not the same and based on a review of more than 1,700 published and peer reviewed scientific articles, FDA concluded that fluoropolymers do not present health or safety concerns when used in medical devices.[7]

In conclusion, the warning labeling provisions in NMED's proposed rule are based on an incorrect understanding of PFAS chemistry. NMED would require a warning label on all products containing intentionally added PFAS, even those exempt from the public reporting and currently unavoidable use provisions of the law. NMED's approach appears to be based on an assumption that all PFAS are the same and therefore possess the same properties and potential risk to human health and the environment. The work cited previously on fluoropolymers demonstrates that NMED's approach is not robust. The agency does not differentiate among different types of PFAS with different physical and chemical properties, which is in stark contrast to the growing

Publications Series on Risk Management No. 61. Paris, France. Available at https://one.oecd.org/document/ENV/CBC/MONO(2021)25/en/pdf. Accessed January 14, 2026.

[5] Agency of Natural Resources, Department of Environmental Conservation, Drinking Water and Groundwater Protection Division. Advance Notice on the Regulation of Perfluoroalkyl, Polyfluoroalkyl Substances (PFAS) as a Class. August 14, 2020. Available at https://dec.vermont.gov/sites/dec/files/PFAS/20180814-PFAS-as-a-Class.pdf. Accessed January 14, 2026.

[6] Department of Defense. Report on Critical Per- and Polyfluoroalkyl Substance Uses. August 2023. Available at https://www.denix.osd.mil/cmrmp/denix-files/sites/14/2025/07/2025-DoD-Update-on-PFAS-Critical-Uses.pdf. Accessed January 14, 2026.

[7] U.S. Food and Drug Administration. PFAS in Medical Devices. Available at https://www.fda.gov/medical-devices/products-and-medical-procedures/pfas-medical-devices Accessed January 15, 2026.

scientific consensus around the diversity of PFAS chemistries and that such diversity should be accounted for in PFAS regulation.

/s/ Dr. Stephen Korzeniowski
Dr. Stephen Korzeniowski

STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED
ADOPTION OF 20.13.2 NMAC
Per- and Poly-Fluoroalkyl Substances in Consumer Products

No. EIB 25-61 (R)

NEW MEXICO ENVIRONMENT DEPARTMENT,
Office of Strategic Initiatives

PETITIONER.

REBUTTAL TESTIMONY OF DR. STEPHEN KORZENIOWSKI ON BEHALF OF AMERICAN CHEMISTRY COUNCIL ("ACC")

February 16, 2026

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Stephen Korzeniowski. I am currently a self-employed consultant. My company is BeachEdge Consulting, located at 350 Darlington Rd, Media, PA 19063.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING REBUTTAL TESTIMONY?

A. I am submitting rebuttal testimony on behalf of the American Chemistry Council ("ACC").

Q. DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS CASE?

A. Yes. My direct testimony is identified as ACC Exhibit 2.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the direct testimony of the New Mexico Environment Department ("NMED") and other parties to this proceeding. More specifically, I will address the numerous PFAS generalizations and lack of specificity in the testimony of various NMED witnesses regarding the fact that PFAS are a diverse group of substances with different properties and should not be treated in regulation as if they are all the same.

Q. HAVE YOU REVIEWED THE NOTICES OF INTENT TO PRESENT TECHNICAL TESTIMONY AND EXHIBITS FILED BY NMED?

A. Yes.

III. REBUTTAL TESTIMONY

Q. HAVE YOU REVIEWED NMED'S WITNESS – DR. MITCHELL OLSON, DR. ERIC CHAPMAN, AND DR. ALISON LING'S WRITTEN TESTIMONY AND ASSOCIATED EXHIBITS?

A. Yes.

Q. IN YOUR OPINION, DID THE TESTIMONY PRESENTED BY NMED IN THIS PROCEEDING USE SCIENTIFICALLY PRECISE TERMINOLOGY WHEN REFERRING TO "PFAS"?

A. No. The term "PFAS" is an umbrella term encompassing more than 14,000 substances with diverse physical, chemical, and toxicological properties, and, to the best of my knowledge, only a small subset of substances classified as PFAS are in commerce.[1] The Department's testimony largely relied on data specific to perfluoroalkyl acids (PFAAs), yet framed conclusions as applying to "PFAS" broadly[2]. That approach does not reflect the scientific distinctions among PFAS subclasses and may create confusion in risk communication. It would be helpful, and in most cases necessary, to be clear, specific and descriptive when talking about PFAS – which ones are being referred to in each case. An example is the statement that PFAS are persistent and mobile.[3] This is an over generalization as many PFAS are not mobile in any manner i.e., fluoropolymers and fluoroelastomers.

Q. DOES THE SCIENTIFIC EVIDENCE PRESENTED BY NMED SUPPORT REGULATING OR LABELING ALL PRODUCTS CONTAINING ANY SUBSTANCE WITH ONE FULLY FLUORINATED CARBON ATOM IN THE SAME MANNER?

[1] Buck et al. 2021. Identification and classification of commercially relevant per- and poly-fluoroalkyl substances (PFAS). J. Integr Environ Assess Manag 17(5):1045-1055. doi: 10.1002/ieam.4450.
[2] *See e.g. NMED Exhibit 32* at 2; *NMED Exhibit 3 at 6-8; NMED Exhibit 57 at 6, 14*
[3] *NMED Exhibit 32* at 2

A. No. A structure-based definition of PFAS that captures all substances with at least one fully fluorinated carbon does not align with the hazard, exposure, and risk conclusions presented. Much of the Departments expert testimony focused on PFAAs and certain related compounds.[4] Extending those conclusions to all PFAS-containing products is not supported by the scientific data discussed in this proceeding.

Q. WHAT TYPES OF PFAS SUBSTANCES HAVE BEEN PHASED OUT VOLUNTARILY OR RESTRICTED VIA REGULATION IN THE UNITED STATES?

A. PFOA, PFOS, and closely related substances have been voluntarily phased out by industry.[5] PFOS was phased out by the sole U.S. manufacturer in 2000, and PFOA was phased out through a voluntary stewardship program with the U.S. EPA by 2015. Some states are regulating products containing intentionally added PFAS by restricting the distribution and selling of such products.

Q. HOW DOES THIS DISTINCTION APPLY TO INTERNATIONAL AGREEMENTS SUCH AS THE STOCKHOLM CONVENTION ON PERSISTENT ORGANIC POLLUTANTS?

A. The Stockholm Convention addresses specific non-polymeric PFAS, such as PFOS, PFOA, and other perfluoroalkyl acids. The Stockholm Convention does not address PFAS

[4] *See e.g. NMED Exhibit 32* at 2; *NMED Exhibit 3* at 6-8; *NMED Exhibit 57* at 6, 14

[5] United States Environmental Protection Agency, FACT SHEET: 2010-2015 PFOA STEWARDSHIP PROGRAM https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program (last accessed February 16, 2026); United States Environmental Protection Agency, EPA AND 3M ANNOUNCE PHASE OUT OF PFOS, May 16, 2000, https://www.epa.gov/archive/epapages/newsroom_archive/newsreleases/33aa946e6cb11f35852568e1005246b4.html

as a single, undifferentiated class.[6] Its listings reflect evaluations based on persistence, bioaccumulation, and toxicity, rather than a blanket approach to all PFAS.

Q. WHY IS THIS DISTINCTION IMPORTANT FOR ACCURATELY CHARACTERIZING THE CURRENT PROPOSED RULE BY THE DEPARTMENT?

A. Suggesting that PFAS broadly have been phased out or restricted implies a scientific and regulatory consensus that all PFAS present comparable risks.[7] In reality, most regulatory actions have been narrowly focused on specific non-polymeric PFAS based on substance-specific evidence.

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[6] United Nations Environment Programme. 2009. Decision SC-4/17. Listing of perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride. In: Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants. Geneva (CH). http://www.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP.4-SC-4-17.English.pdf

United Nations Environment Programme. 2019a. Decision SC-9/4: Listing of perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride. In: Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants. Geneva (CH). [accessed 2020 Sep 15]. http://www.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP.9-SC-9-4.English.pdf

United Nations Environment Programme. 2019b. Decision SC-9/12: Listing of perfluorooctanoic acid (2019), its salts and PFOA-related compounds. In: Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants. Geneva (CH). [accessed 2020 Sep 15]. http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP.9-SC-9-12.English.pdf
United Nations Environment Programme. 2019c. Decision SC-10/13. 2023. Listing of perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds. http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP.10-SC-10-13.English.pdf

United Nations Environment Programme. 2025. UNEP/POPS/COP.12/32/Add.1. Decisions adopted by the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants at its twelfth meeting. https://www.pops.int/TheConvention/ConferenceoftheParties/Meetings/COP12/tabid/9744/Default.aspx

[7] *NMED Exhibit 46* at 12

It should be noted that the New Mexico Legislature itself determined that certain classes of PFAS - such as fluoropolymers that are solids at standard temperature and pressure[8] - do not present risks warranting regulation, and NMED appropriately recognized and implemented that legislative judgment in the proposed rule.[9] It is important that the record and supporting testimony accurately characterize those substances and not conflate them with PFAS classes that the Legislature expressly chose to treat differently.

IV. LABELING REQUIREMENTS

Q. WOULD LABELING ALL PFAS-CONTAINING PRODUCTS IN THE SAME MANNER ACCURATELY REFLECT DIFFERENCES IN HAZARD, EXPOSURE, AND POTENTIAL RISK?

A. No. PFAS encompass substances with significantly different chemical, physical, and toxicological properties that inform their uses and potential exposure, and risk profiles. Applying a single, uniform warning implies comparable risk across all PFAS, which is not supported by the scientific distinctions discussed in this proceeding.

Q. HOW DOES THAT CONCERN APPLY TO FLUOROPOLYMERS?

A. Recognizing the diversity of physical and chemical properties within the PFAS family of chemistries is critical for understanding whether a particular PFAS or sub-group of PFAS might be of potential concern to human health or the environment. Fluoropolymers have markedly different physical and toxicological characteristics compared to non-polymeric PFAS such as PFOA or PFOS. A general statement or pronouncement that 'as a whole,

[8] NMSA 1978 § 74-15-3 (A)(16)
[9] *NMED Exhibit 2* at 4

PFAS are bioaccumulative, persistent and mobile,' is simply incorrect and misleading.[10] In addition, two recently peer-reviewed journal publications[11] make a compelling case that fluoropolymers have a unique set of properties that set them apart from other PFAS. For one of the witness statements to label these important publications as "tainted"[12] because industry did them, is a clear mischaracterization of the compelling property, analytical, testing and toxicology data presented in these publications. Another generalization noting that fluoropolymers are not safe[13] is directly contrary to what is published in the two journal articles cited above. A uniform, one-size-fits-all warning could mislead consumers into believing all of these materials pose similar risks, which is not consistent with the available scientific evidence.

Q. HOW DOES THAT CONCERN APPLY TO THE OTHER EXEMPTIONS IN THE STATUTE?

A. The same concern about misleading consumers applies to blanket labeling of the other exemptions listed in the statute.[14] PFAS are not monolithic in their properties or uses, and many of the exempted applications involve highly technical materials that serve as critical enablers of industries underpinning modern life. In numerous contexts - such as health care,

[10] *NMED Exhibit 3* at 44
[11] Henry BJ, Carlin JP, Hammerschmidt JA, et al. 2018. A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers. *Integrated Environmental Assessment and Management* 14: 316–3

Korzeniowski SH, Buck RC, Newkold RM, et al. 2023. A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. *Integrated Environmental Assessment and Management* 19: 326–54.

[12] *NMED Exhibit 3* at 48
[13] *Id*. at 46
[14] *NMED Exhibit 3* at 48

energy systems, transportation, electronics, and other infrastructure - these substances are essential to safety, durability, or performance, and viable alternatives are not reasonably available without compromising function or introducing other risks. Applying a uniform label to these categories would obscure these distinctions, potentially confuse consumers, and fail to reflect the careful policy judgments already embedded in the statutory exemptions. Due to these concerns, the American Chemistry Council is proposing to exclude the proposed exemptions in Section 20.13.2.10 NMAC[15] from labeling requirements.[16]

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

/s/ Stephen Korzeniowski
Stephen Korzeniowski

[15] *NMED Exhibit 2* at 3
[16] *See ACC Exhibit 6*

Proposed Adoption of PFAS in Consumer Products

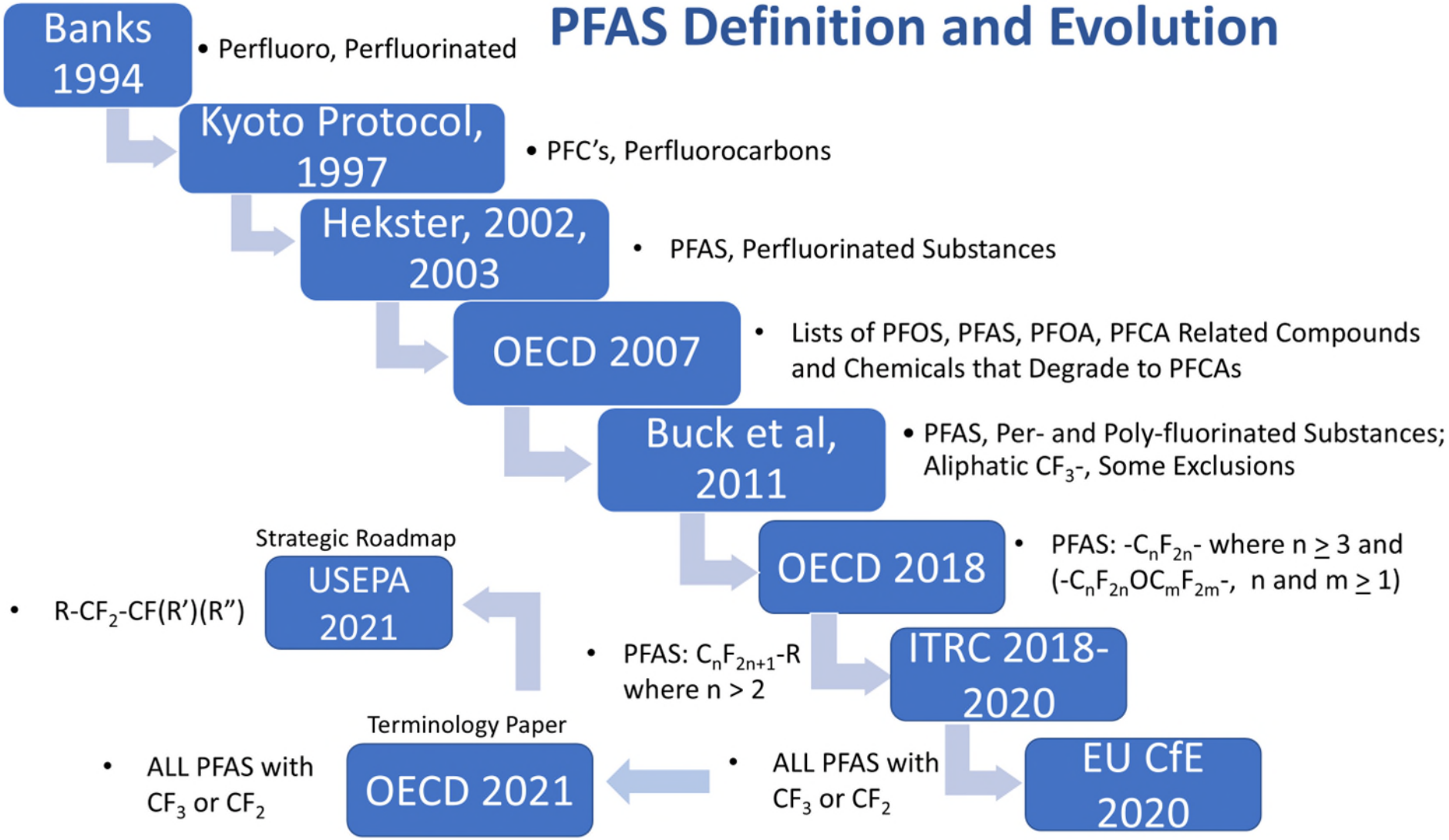
Dr. Stephen Korzeniowski

American Chemistry Council

Purpose of Testimony

- Central concern:
  - Proposed rule treats **all PFAS as the same**
  - Requires warning labels on **all products with intentionally added PFAS**
  - Includes products otherwise exempt under reporting and unavoidable use provisions

PFAS Definition and Evolution



PFAS Are Not One Uniform Substance

- PFAS = Diverse group of chemicals
- Significant variation in:
  - Physical properties
  - Chemical properties
  - Environmental behavior
  - Toxicological profiles
- Assuming equal risk across all PFAS is not scientifically supported

An Important Question - Are They All The Same?

A Big Universe of Very Different Substances

SOLID

Polyethylene

$H(CH_2CH_2)_xH$

LIQUID

Ethyl Alcohol

CH_3CH_2OH

GAS

Propane

$CH_3CH_2CH_3$

C-H Compounds

We would never group them together and say "they are the same," because they are Not the same.

Fluorocarbons – Also a Big Universe of Very Different Substances

C-F Compounds

Fluorocarbons: C-F Substances

SOLID

Polytetrafluoroethylene

PTFE $F(CF_2CF_2)_nF$

A Fluoropolymer

LIQUID

6:2 Fluorotelomer Alcohol

$C_6F_{13}CH_2CH_2OH$

A Fluorotelomer

GAS

HFC-134a

CF_3CH_2F

A Refrigerant

We should Not group them together, because they are Not "the same."

Hydrocarbon Examples

Common Chemical Examples

$CH_3 – CH_2 - OH$

Ethanol or
Ethyl Alcohol

Common Use: Alcoholic Beverages; Beer; Wine

Ingestion Effects: Light Headed; Intoxication

$CH_3 - OH$

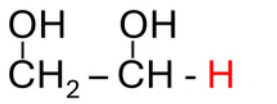
Methanol or
Methyl Alcohol

Common Use: Windshield Washer Fluid

Ingestion Effects: Abdominal Pain; Blurred Vision and/or Blindness

Common Chemical Examples

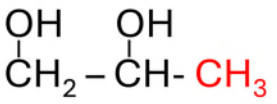
Ethylene Glycol



Common Use: Automotive Antifreeze & Engine Coolant

Ingestion Effects: Toxic to Humans & Wildlife; Dogs, Cats – Kidney Damage, Failure & Death

Propylene Glycol

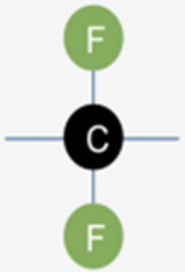


Common Uses: “Non-toxic” Antifreeze; Food & Pharma

Ingestion Effects: Generally Regarded As Safe (GRAS) by FDA and Much Safer

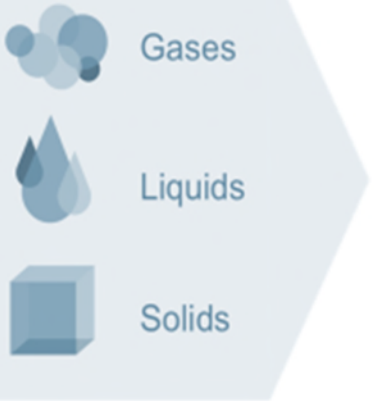
PFAS* include many different substances with *very different* properties

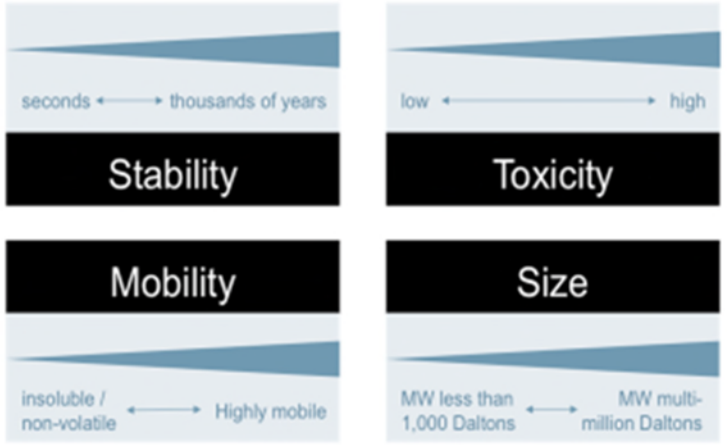
Similarities



1 fully fluorinated carbon
or CF_2-CF_2-CF_2- or ....

Differences





*Per- and Poly-Fluoroalkyl Substances

Be Clear, Specific and Descriptive

Fluoropolymers are Fundamentally Different

- Fluoropolymers meet “polymer of low concern*” criteria
- Key characteristics:
  - High molecular weight
  - Insoluble in water
  - Large, stable structures
  - Not bioavailable
  - Not bioaccumulative
  - Do not degrade into smaller PFAS
- Environmental mobility concerns do not apply to fluoropolymers.

*defined as polymer properties predictive of low health and environmental hazard

Problems with NMED's Proposed Labeling

- **Proposed Rule Assumption**
  - All PFAS = Same properties + Same risk
- **Scientific Reality**
  - PFAS vary significantly
  - Fluoropolymers differ fundamentally from small, water-soluble PFAS
- **Uniform warning labels imply uniform hazard**
  - Growing scientific consensus: PFAS are diverse
  - Fluoropolymers are materially different from other PFAS

- **NMED's warning label approach:**
  - Fails to differentiate among chemistries
  - Is inconsistent with current scientific understanding
  - Is not scientifically robust

PFAS Regulation and Grouping: As One Group or Class

- Premise for Treating All PFAS the Same – as ***One* or "The Chemical Class of PFAS"***
  - Regrettable substitution of long chains; large number of PFAS on commercial market; not conducive to classic risk assessment; intrinsic property of persistence alone is sufficient justification to group as ***One***; increased probability of adverse effects on human health and environment; irreversible and increasing contamination
- Considerations:
  - Persistence is an intrinsic property but not an intrinsic hazard and it does not by itself imply an adverse effect
  - Not scientifically justified to classify inert solids, salts, liquids and gases in a single class – as ***One*** – where properties like vapor pressure, environmental partitioning, hydrophobicity/lipophilicity, aqueous solubility and hazard itself**, as well as surface and material properties vary greatly

***Strategies for grouping per- and polyfluoroalkyl substances (PFAS) to protect human and environmental health**
Ian T. Cousins, Jamie C. DeWitt, Juliane Glüge, Gretta Goldenman, Dorte Herzke, Rainer Lohmann, Mark Miller, Carla A. Ng, Martin Scheringer, Lena Vierkej and Zhanyun Wang ***Environ. Sci.: Processes Impacts***, 2020,**22**, 1444-1460

***Scientific Basis for Managing PFAS as a Chemical Class** Carol F. Kwiatkowski, David Q. Andrews, Linda S. Birnbaum, Thomas A. Bruton, Jamie C. DeWitt, Detlef R. U. Knappe, Maricel V. Maffini, Mark F. Miller, Katherine E. Pelch, Anna Reade, Anna Soehl, Xenia Trier, Marta Venier, Charlotte C. Wagner, Zhanyun Wang, and Arlene Blum *Environmental Science & Technology Letters* **2020** 7 (8), 532-543

****Application of a Framework for Grouping and Mixtures Toxicity Assessment of PFAS: A Closer Examination of Dose-Additivity Approaches**
Philip E. Goodrum, Janet K. Anderson, Anthony L. Luz, and Graham K. Ansell *Toxicological Sciences,* ***2020:*** *doi: 10.1093/toxsci/kfaa123*

Rebuttal Testimony of Dr. Korzeniowski

Overgeneralization in NMED Testimony

- NMED relied primarily on data for **Perfluoroalkyl acids (PFAAs)**
- Conclusions framed as applying to **all PFAS**
- This approach:
  - Ignores PFAS subclasses
  - Risks misleading risk communication

ACC Recommendation

- Exclude statutory exemptions in **Section 20.13.2.10 NMAC** from labeling requirements
- Align labeling with:
  - Science
  - Risk-based regulation
  - Legislative judgments already embedded in statute

BEFORE HONORABLE FELICIA L. ORTH

Deposition of : VOL IV HEARING

taken on: February 26, 2026

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STATE OF NEW MEXICO

ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF PROPOSED ADOPTION OF 20.13.2 NMAC, Per- and Poly-Fluoroalkyl Substances in Consumer Products.	EIB NO.: 25-61(R)

BEFORE THE HONORABLE FELICIA L. ORTH

THURSDAY, FEBRUARY 26, 2026

9:01 A.M.

EVIDENTIARY HEARING VOLUME IV

CERTIFIED TRANSCRIPT

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INTERPRETER
AMELIA CARDEÑA
INTERPRETER

MELINDA MAASS
INTERPRETER

I N D E X

A. Yes.
Q. Okay. I just wanted a little clarification. I had heard "molecular weight," and that makes sense to me.
BOARD MEMBER BITZER: That's all I have. Thank you.
HEARING OFFICER ORTH: Thank you.
Member Carrasco.
Let's see, Member Carrasco, do you have questions of Dr. Henry?
Member Curry, do you have questions of Dr. Henry?
BOARD MEMBER CURRY: I do not.
HEARING OFFICER ORTH: Thank you.
Counsel.
MR. UGARTE: No questions, Madam Hearing Officer. Just a comment to tell Dr. Henry that I grew up in Beaver Falls, Pennsylvania, so I figured I'd get a smile from you.
THE WITNESS: I did; the land of Joe Namath.
MR. UGARTE: Yes, and Geneva

College.
THE WITNESS: And Geneva College.
MR. UGARTE: Thank you.
HEARING OFFICER ORTH: All right. Any reason not to excuse Dr. Henry?
Will you offer exhibits?
MR. TRUJILLO: Madam Chair, I move for the admission of the exhibits associated with Dr. Henry.
HEARING OFFICER ORTH: I'll pause for a moment in the event there are objections. No.
They are admitted. Thank you.
(ACC Exhibit 4 was received in evidence.)
(ACC Exhibit 5 was received in evidence.)
HEARING OFFICER ORTH: Thank you very much, Dr. Henry.
THE WITNESS: Thank you very much.
MR. TRUJILLO: Madam Chair, next we'd call -- I call him Dr. K.

I've got to get used to saying his name; Dr. Korzeniowski.
Thank you, Dr. K.
HEARING OFFICER ORTH: All right.
Dr. Korzeniowski, would you -- good morning -- spell your first and last name, please.
THE WITNESS: Stephen, S-T-E-P-H-E-N; last name is K-O-R-Z-E-N-I-O-W-S-K-I.
HEARING OFFICER ORTH: Thank you.
Do you swear or affirm to tell the truth.
THE WITNESS: I do.
HEARING OFFICER ORTH: Thank you very much.
Go ahead, Mr. Trujillo.

STEPHEN H. KORZENIOWSKI, PH.D.,
after having been first duly sworn, was examined and testified as follows:
///
///

DIRECT EXAMINATION
BY MR. TRUJILLO:
Q. Good morning, Dr. K.
Who is your current employer?
A. My current employer is my own company, BeachEdge Consulting. I started my company ON August 1st, 2015, when I retired from my corporate job.
Q. And on whose behalf are you Testifying today?
A. ACC, or the American Chemistry Council.
Q. Did you provide a Resumé filed as ACC Exhibit 1?
A. I did.
Q. And that states your employment history, qualifications, and experience.
A. Through today, yes.
Q. Can you briefly summarize your relevant experience for the Board.
A. Yeah, I guess I can.
I started in this chemistry, and they didn't call it "PFAS" at the time, but I started in 1977. I worked

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for about 7 years, 6, 7 years in the lab and doing a few other things in this kind of chemistry.

Like many large companies I got the opportunity to do many other jobs between 1984 and 1996.

Then I came back in 1996, and for the last 30 years, I've been in this business, so about 36 years direct experience in fluorochemical technology.

Q. Thank you.

Can you briefly describe any peer-reviewed papers you have authored that are important to this proceeding?

A. What I've done is as an industry person you often don't get a lot of chance to publish, but I was fortunate. I got a chance to publish as well as do a number of posters and major talks, and so I have about 60, about 20 of which are peer-reviewed publications.

Those publications are on:

Analytical chemistry;

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Toxicology;

Pharmacokinetics;

Degradation or biodegradation;

Sources;

Fate; and,

Transport.

We, me and 3 other authors, did the first major publication to figure out where PFOA came from, from the companies and in the environment in 2006.

Then we published one of the "Polymers of Low Concern" papers in 2022/2023.

In that span I did a whole host of different chemistries, but I think my publication days are done.

Q. Thank you, Dr. K.

Did you provide Written District Testimony that was filed in this matter as ACC Exhibit 2?

A. I did.

Q. Do you have any corrections to your Written Direct Testimony?

A. I do not.

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Q. Do you adopt your Written Direct Testimony as your own Testimony for this matter?

A. I do.

Q. What is the purpose of your Direct Testimony?

A. What I wanted to do was to take a few moments -- and I'm only going to take about 15 or 16 in my Direct, and I have about 11 or 12 in the Rebuttal, just to frame for the Board and those in the room some of the things that I saw in the Testimony that was given by others that didn't quite make sense to me.

I wanted to take the opportunity to give my point of view, as did Dr. Henry, on what we see and what the Board needs to hear from an alternative point of view from chemistry and science.

Q. Go ahead and please present your summary of your Direct Testimony today.

A. Okay. Madam Hearing Chair and

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the Members of the Board, good day to you all. Thank you for allowing me to be here today.

I'm an Organic Chemist, as you heard, who started in fluorochemistry in 1977. I have a Bachelor's of Arts degree in Science and Chemistry from Rutgers. I went and got a Ph.D. in Organic Chemistry from Penn state University. Then after 3 or 4 years of working, I went back and got an MBA in finance.

I transitioned to many roles, as I described, and all of those roles where science and business allowed me to take the science as well as put in perspective what it means in:

Business;

Environmental; and,

Other worlds.

I've been a member of ITRC, as Dr. Olson had testified the other day, the same thing since 2017.

I've been a member of the Fire Fighting Foam Coalition since 2021;

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that's the uses AFFF or firefighting foam with fluorinated surfactants.

I've been a member of a number of industry groups since 2000, of which ACC has been a partner for many of those years.

I'm here today on behalf of ACC in support of the ACC position that the Warning Label provisions in the Proposed Rule treat all PFAS the same, when PFAS, as we know, are quite different. I'll spend a fair amount of time describing that today:

There are very, very diverse group of substances with vastly different physical and chemical properties. The central concern is that this Proposed Rule treats all PFAS the same despite the huge differences, and I'll explain some of those differences.

It requires a Warning Label on all products with intentionally added PFAS, but it includes products otherwise exempt under Reporting and

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Unavoidable Use provisions.

As you've heard over the past 3 days of hearings, and in the documents you have received, there are several...

Well there is a few schools of thought on how to treat the PFAS chemicals. Since they all have carbon and fluorine, they have a fully fluorinated carbon in their structure, and more on this in a minute.

One group says, and you've heard this many times this week, that if it meets the PFAS definition, and given that persistence is sufficient, PFAS should be grouped together and treated as 1, group them as 1.

Others, like me myself, say that PFAS are not the same. Even if they have a fully fluorinated carbon, they should not be treated -- they should be treated separately and not grouped as 1.

If the question is whether there is a consensus, absolutely not.

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There is no consensus. I'm not sure there is ever going to be consensus.

You all have seen and agreed on the definition of PFAS; that, over the past few days in the Rule, 1 fully fluorinated carbon, and Barb Henry talked about that a few minutes ago. This definition was proposed by OECD in 2021.

As the definition has changed, so have the number of potential number of PFAS compounds in the list. You've heard nonstop either today and the past 3 days, as well as in all the Testimony how many PFAS really are there.

I put this chart together, and it's evolved, obviously. The last time I put this together was 2021, but what's the definition and what does it mean? Really, are there 14- or 15,000 PFAS compounds hanging around? The answer is no.

There is lists and databases where you can say there is 14,000, but

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the fact of the matter is, as the definition has evolved, the number of PFAS have evolved that are captured in that list.

I mean I charted this back to 1994. There were no real numbers at that point, and Hekster in the Netherlands starting using "PFAS," but only mentioned "perfluorinated substance," not "PFAS" as we know it today.

The OECD in 2007 created sort of the first list. That was 982 when the OECD in 2007. 982 compounds is a far cry from where we are today.

Buck in 2011, they are credited with the first creation of the definition of PFAS in 2011, the Buck/Franklin paper.

HEARING OFFICER ORTH: Please keep it slow.

THE WITNESS: Okay. Then in the OECD paper in 2018, which we base one of our studies on, which I'll talk about in a moment, because the

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definition changed, and there was that 4730.

When the EU called for evidence in 2020, it was about 8,000.

Then you have got the new OECD definition from 2021 and EPA database and lists, and now it's about 14,000.

I said this a minute ago, the 14,000 are based on lists and databases, not a commercial context, and we heard that this morning.

The EPA list was 7- or 800; when we did our study it was 600, so same ballpark.

The work we did and we published in a peer-reviewed article in 2021 took the OECD list from 2018, and of the 4730, and we found 6%. The survey we did, it was 256, but it was only 3 companies, so we extrapolated that to be maybe it was 6- or 700 directly on top of what you just heard this morning.

If you're looking at what compounds are relevant and important

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in commerce and potentially consumer products, it's hundreds, not thousands.

Next chart.

PFAS are not 1 uniform substance; Dr. Henry gave you a little flavor of that this morning.

Also Drs. Chapman and Olson gave a broad overview of what PFAS is with their Testimony, and I don't need to repeat that. I don't think you want a chemistry lesson this morning; enough is enough. You will see some chemistry in a few minutes.

You have heard that PFAS are a diverse group of chemicals that vary very significantly in their physical and chemical properties:

Their environmental behavior;

Environmental fate and effects;

Their toxicological profiles.

Assuming equal risk across all PFAS is simply not scientifically justified.

On the other hand, many believe,

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and you heard this a few minutes ago too, despite what I just said here, many believe that if you have a PFAS with a fully fluorinated carbon -- go back one -- and given that they are viewed as persistent, persistence is sufficient. My view is it's not. I am not in that camp; we are opposed to the grouping as 1.

Now you can change the chart.

All right. Perspective:

I want to give you some examples, and, you know, you hear me say that they are not the same, but give me a moment here to provide a little education and then see if I can help you as to why we believe they are not the same: This is on Labeling and grouping at a high level. After this -- don't change yet -- I'm going to go to a granular level:

An important question that we've been asking for several days now is are they all the same? Let me start with carbon and hydrogen compounds:

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You see the solid, which is "polyethylene," which is a tubing that you use in your home and water systems.

You see "ethyl alcohol," and we'll talk a little bit about that in a minute. You know what ethyl alcohol is and where it's used, and where it comes from.

Then if you're like me at home, I have no services in my house. I have to have propane for heat so I have gas.

These are carbon and hydrogen compounds. Are they the same? Would you group them the same just because they have carbon and hydrogen in their backbone? The answer is no.

That is the same question you should ask for fluorocarbons. They are also really a large universe of very different, very diverse substances.

For the carbon and fluorine compounds, you can say they're CF3s; solid is PTFE,

polytetrafluoroethylene.

The liquid could be what we call the 6:2 fluorotelomer alcohol. This alcohol is what you've heard over the past few days as the newer chemistry, or the short chains, but that's a liquid.

Then for gas would be refrigerants or blowing agents.

And so, you know, you look at these and you say, "Okay. Are these compounds the same?" The answer is I don't think so.

Let's go to a more granular example, actually 2 of them on the next chart. These substances will be very familiar to you:

These are hydrocarbon examples, and I'll follow with fluorocarbon in just a second.

On the left-hand side you have 2 common chemical examples. You have ethanol, and you know what ethanol is. It's in your beer, your wine, your spirits. It's used as a solvent.

Then if you just change the structure and you get rid of that CH2 in the middle, you have ethanol. They look the same. They are carbon, hydrogen, and oxygen, they are alcohols, but they have vastly different hazards. Ethanol you can drink; methanol, if you drink it, you go blind.

Saying something is in the same family implying the same hazards makes no sense with 2 simple hydrocarbon examples.

Let me give you one more on the right-hand side:

For those of you who have ever worked on a car, you know you need antifreeze. Ethylene glycol was the common antifreeze that's been used for years and years and years. It's great if you don't have a pet, because if that antifreeze is leaking and your dog or cat licks that antifreeze, they can have kidney failure or die. My Wife's a veterinarian, so I get this story all the time.

However many years ago you may remember there was an alternative glycol called propylene glycol that just had one more carbon, but had vastly different properties such that it's generally regarded as safe by the FDA.

The fact that you have a structure, 2 simple examples, doesn't mean they have the same hazards and they don't require the same labels.

Next chart please.

All right. You heard a fair amount of this from Mark:

> "PFAS include many different substances with very different properties."

They are similar, yes. They have CF3, but from that point on it changes because you do have gases, liquids, and solids. I said that a few minutes ago.

Barb started to highlight some of the key features you have to really think about when you think about PFAS

as a class. In this case you've got stability from seconds to thousands of years. Do they degrade?

Do they photolyze?

Do they degrade in soil?

Mobility? Barb talked about this also.

Are they insoluble or are they highly mobile and soluble in the environment, either in te air or in water?

Toxicity.

There is different grades. You heard Dr. DeWitt talk about the gradation. This is low to high. There is gradients in between, and size.

How big are these? From really large back to really small; Barb highlighted that in several of her charts.

One of the things that I have been saying and my colleagues have been saying over the years, and that's one of my major criticisms and one of

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the reasons I'm talking today, is that PFAS is so big. Unless you tell people what you're talking about, they don't know. They assume it's all the same.

PFAS includes hundreds, if not thousands of compounds, so my motto is pretty simple, and I said that I think in my Testimony and elsewhere. To be clear, be specific and be descriptive when you're talking about PFAS.

Next chart.

You've heard this from us and you've heard this from Barb:

Fluoropolymers are fundamentally different. They meet the criteria of what we call "polymer of low concern," and as Barb said, and you might have missed it, but it's defined as:

"Polymer properties predictive of low health and environmental hazard."

I'll elaborate more when I do my Rebuttal, but you don't see the word "no" there. These are not

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"polymers of no concern," they are "polymers of low concern," and that's an important distinction.

What you need to do is you need to assess -- which is what we've done, and Barb did with her group in 2018. I did that with my colleagues in 2022 -- the world of fluoropolymers against 12, 13 different criteria.

What we look at is molecular weight or size.

We look at solubility in water.

We look at whether the structures are large and stable. Barb was talking about that in terms of degradation either in soil or in air.

Are they bioavailable?

Are they bioaccumulative?

Do they degrade into smaller pieces?

Are they precursors, which is a really, really important concept.

Environmental mobility concern generally does not apply to

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fluoropolymers because they are solids and they don't have solubility and they don't have vapor pressure.

Now is that an absolute? I can't say it's an absolute, but it's pretty good. It holds pretty good.

All right. One of things I want to talk about here, and I'm going to say it again in the Rebuttal in a little bit more detail, but there are 2 papers, one by Dr. Henry and her global colleagues in 2018, and another paper in 2022 by myself and 7 other global companies where we talk about "polymers of low concern."

These studies combined cover about 96% of the major global fluoropolymers, and include all the properties; residuals, monomers, extractables, and all the fundamental properties.

I am going to come back to that because it's really important, because there was a lot of questions yesterday and even today about life

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cycle.

Next chart.

There we go; two more charts, this one and the next one.

Before I finish with my final 2 slides, I want to reiterate that in both of the "polymer concern" papers both 2018 and 2022, that was online, and in 2023 in print. We not only discuss the end of life, which we heard today, the end of life properties of the fluoropolymer life cycle, but we also discuss beginning of life, which is how they are made, and end of life. I'll talk about the life cycle in a few minutes.

What do we see as the problems with the proposed Labeling? We've all talked about that for the past four days.

"All PFAS have the same properties and the same risk."

No, they don't, And a label that covers all of them, which is

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what's proposed, even though there are exceptions, doesn't make scientific sense in my view, and I am a scientist.

The scientific reality is that PFAS vary very significantly. Fluoropolymers differ fundamentally from the very small water soluble PFAS or the PFAAs that Barb talked about this morning.

There is growing scientific consensus that PFAS are diverse. As I said earlier, there are different groups that think about these, and I'm not sure we're ever going to get together. We, in good spirit, have spirited discussions and we end up agreeing to disagree.

Fluoropolymers -- and you heard this also -- are materially different from other PFAS because of the properties I talked about.

NMED's Warning Label approach fails to differentiate amongst the chemicals. It is inconsistent with

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current scientific understanding, some of which I talked about today. It's not scientific and robust.

You know, my question is, and we all have many questions, but I'm still trying to figure out what an Erlenmeyer flask with a "PFAS" symbol in it is really going to do here. I am not a label expert, but I've used many Erlenmeyer flasks in my day with "PFAS" in them. We're going to need to figure out what it really means in the end; not an expert there.

Last chart.

I'll finish up with the concept we've talked about 3 times already in this. It's important Because there's 2 major schools of thought:

The premise for treating PFAS the same as one, well, if you take it historically, historic or legacy long-chain, and you substitute it with another PFAS, that's called a "regrettable substitution."

"There is a large number

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of PFAS on the commercial market."

Well that's not really true and not conducive to classic risk assessment, and that's one of the reasons why we did our 2021 paper. We wanted to put perspective on how many of these chemicals really there were.

The big barrier, my view -- and I'm not an Epidemiologist, I'm an Organic Chemist. The big barrier to doing risk assessment is there's too many of them. The answer is no, there's not; that's what we concluded in 2021, but There's still a lot. Can you subgroup them and then do them as a risk assessment? That was our message coming out of that 2021 paper.

"The intrinsic property of persistence alone is sufficient justification."

That's what the one group thinks.

What you also heard Monday or Tuesday is that there's increased

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probability of adverse effects in human health and the environment if these are put in the environment Even if they are not bioavailable, not soluble, not bioaccumulative, and too big to do anything, but then there is the other side.

The other side is persistence is an intrinsic property, but not an intrinsic hazard, and it does not, by itself, imply an adverse effect just because it's persistent. It is not scientifically justified to classify inert solids, salts, liquids, and gases in a single class as 1, where properties like vapor pressure, environmental partitioning, aqueous solubility and hazard itself, as well as surface and material properties vary greatly. Thank you.

Q. Thank you, Dr. Korzeniowski.

Let me next turn to Rebuttal and ask you a few questions, and then we'll get into your summary.

A. All right.

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Q. Did you review the Direct Written Testimony of NMED's witnesses filed in this matter, particularly Dr. Chapman's, Dr. Olson's, and Dr. Ling's Testimonies?
A. I did.
Q. Did you also provide written Rebuttal Testimony of these NMED witnesses that was filed in this matter as ACC Exhibit 3?
A. I did.
Q. Do you have any corrections to your written Rebuttal Testimony?
A. They are not corrections, but what I did, and I discussed this with Dal, is I didn't change the headings, I didn't change the references, I just added some more text, so I'm happy to provide a copy of that to the Board and to the group.
Q. Okay. Thank you.
A. No corrections, it's just, again, the same references; no change in references, no change in context.
Q. Do you adopt your written

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Rebuttal Testimony, then, with those additions, as your own Testimony here today?
A. I do.
Q. Let's proceed with your summary.
For this round, before we begin, I'm going to ask you questions, and when you're done with your answer I'll ask you the next question?
A. Please do. Thank you.
Q. Thank you.
In your opinion, did the Testimony presented by NMED in this proceeding use scientifically precise terminology when referring to PFAS?
A. No.
The term "PFAS" is an umbrella term encompassing more than 14,000 substances, which we just talked about a few minutes ago, as included in databases and lists, but not in commerce, with very diverse chemical, physical, and toxicological properties.
To the best of my knowledge

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only a small subset of substances classified as PFAS are actually in commerce or of commercial relevance.
This set of commercially relevant PFAS, as I said a few minutes ago, likely numbers in the hundreds and not tens of thousands, and that's the Buck, et al., as a co-author with Bob and 2 others in 2021.
The Department's Testimony appeared to largely rely on data specific to PFAAs, or the per-fluoroalkyl acids, yet framed conclusions as applying to PFAS broadly. That approach does not reflect the scientific distinctions among PFAS subclasses and may create confusion in risk communication.
It would be helpful, and in most cases necessary, to be clear, specific, and descriptive when talking about PFAS and which ones are being referred to in each case.
As an example is the statement that:

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"PFAS are persistent and mobile."
This is an overgeneralization, as many PFAS are not considered mobile due to their very limited solubility and lack of vapor pressure.
Q. Does the scientific evidence presented by NMED support regulating or Labeling all products containing any substance with 1 fully fluorinated carbon atom in the same manner?
A. No.
A structure-based definition, which is what we're talking about, of PFAS that captures all substances with at least 1 fully fluorinated carbon does not align with hazards, exposure, and risk conclusions presented.
Much of the Department's Expert Testimony focused on PFAAs and certain related compounds. Extending those conclusions to all PFAS-containing products is not supported by the scientific data discussed in this proceeding.

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Q. What types of PFAS substances have been phased out voluntarily or restricted via regulation in the United States?

A. I'm going to go off script for just a second:

We've heard that PFOA and PFOS are still sort of used and back in the U.S., and we can comment on that at some point.

PFOA and PFOS, and closely related substances, have been voluntarily phased out by industry. PFAS and related long-chain PFSAs, perfluorosulfonic acids, were phased out by the sole U.S. manufacturer in the early 2000s.

Nd PFOA and its related higher homologues and precursors were phased out through the U.S. EPA 2010/2015 PFOA voluntary Stewardship Program. This Program was global in nature and included the 8 major global manufacturers. The Program included both products and plant emissions.

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The U.S. EPA, however, did grant a few SNUR Exemptions for PFOS-type products to be used until replacements were found. This could be the thinking that PFOS products are still coming back into the United States.

It has not been discussed here, but many of these products were used in very specific formulations. Like in the photographic industry, photolithography, the hydraulic fluid in your jets and your aircraft. There were no replacements even in the 2000s.

EPA provided at least 4 PFOS compound Exemptions, and then the right to manufacture outside the U.S., so that's like 5 SNURs. That might be the source of...

Listen, I don't know whether there's replacements yet; some of these were very difficult to requalify.

Some states are regulating products containing intentionally added

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PFAS by restricting the distribution and selling of such products, and we've talked about this; Maine and Minnesota are 2 examples.

Q. How does this apply to international agreements such as the Stockholm Convention on Persistent Organic Pollutants?

A. The Stockholm Convention addresses specific non-polymeric PFAS, such as PFOA and PFOS, and other per-fluoroalkyl acids, normally hyperchain links like C9 to C20, or C9 to C21.

The Stockholm Convention does not address PFAS as a single undifferentiated class. Its listings reflect evaluations based on the combination of persistence, bioaccumulation, and toxicity rather than a blanket approach to all PFAS.

Q. Why is this distinction important for accurately characterizing the current Proposed Rule by the Department?

A. Suggesting that PFAS broadly

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have been phased out or restricted implies a scientific and regulatory consensus that all PFAS present comparable risk.

In reality most regulatory actions have been narrowly focused on specific non-polymeric PFAS based on substance-specific evidence.

It should be noted that the New Mexico Legislature itself determined that certain classes of PFAS, such as fluoropolymers that are solids at standard temperature and pressure, do not present risk warning regulation, and NMED appropriately recognized that implementing Legislative judgment in the Proposed Rule.

It is important that the record and supporting Testimony accurately characterize those substances and not conflate them with PFAS classes that the Legislature expressly chose to treat differently.

Q. I'm going to move on to Labeling requirements now.

A. Sure.
Q. Would Labeling all PFAS-containing products in the same manner accurately reflect differences in hazard, exposure, and potential risk?
A. No.
PFAS encompasses substances with significantly different chemical, physical, and toxicological properties that inform their uses and potential exposure and risk profiles. Applying a single uniform warning, like an Erlenmeyer flask with "PFAS" embedded in the middle implies comparable risk across all PFAS, which is not supported by the scientific distinctions discussed in this proceeding.
Q. How does that concern, then, apply to fluoropolymers?
A. Recognizing the diversity of physical and chemical properties within the PFAS family of chemistries is critical for understanding whether a particular PFAS, or subgroup of PFAS, might be of potential concern to human

health or the environment.
Fluoropolymers do have a markedly different physical and toxicological characteristics compared to non-polymeric PFAS, such as PFOA or PFOS, even versus what you heard talked about this morning; these side-chain fluorinated polymers.
A general statement or pronouncement that, as a whole, PFAS are bioaccumulative, persistent, and mobile is simply incorrect and misleading.
In addition, 2 recently peer-reviewed publications that we talked about a few minutes ago -- 1 in 2018 by Dr. Barb Henry and her colleagues at Gore, and the other in 2022 online, and 2023 in print by myself and members of 7 global fluorocarbon manufacturers -- made a compelling case that fluoropolymers have a unique set of properties that set them apart from the other PFAS.
From one of the witness

statements and Testimony on Monday, to label these important publication as tainted or conflicted because industry did them is a clear mischaracterization of the compelling analytical testing and toxicological data presented in these publications.
Another generalization noting that fluoropolymers in use or in life are not safe is directly contrary to what is published in the 2 journal articles cited above.
Directly contrary to what you have read in Exhibit 71 and heard on Monday in Testimony, fluoropolymer manufacturers have recognized that there are potential emissions of fluorinated species across the complete life cycle, manufacturing, which is beginning of life; end use or end life; and end of life disposal. That can be recycled; that can be incineration.
There are no disingenuous claims about no emissions and no

claims about polymers of no versus low concern.
For example, the fluoropolymer manufacturing group in Europe called FPG have created and are executing a Manufacturing Emissions Reduction Program with defined goals.
You have also heard a fair amount of talk about the use of fluorinated polymerization aids. You heard that this morning, FPAs. They are no longer in use. These particular ones are generally no longer in use, not by at least the Stewardship companies. Some companies have replaced them with short-chain, and you heard that this morning also.
What is more important, though, about that is that the fluoropolymer industry has been working for years to eliminate the use of these fluorinated polymerization aids, and as of 2022 -- I don't have new data -- when we published our paper, about 55% of those FPAs have

already been eliminated from use in manufacture; I don't know whether it's 70 today or 75. I don't know what the percentage is, but it's clear the industry understands there is potential emissions and is doing what it needs to do to eliminate them.

As far as end of life -- you heard about it this morning also -- there have been several incineration studies since 2019 with several more in the works. Many of these studies show, as Barb said, several '9s destruction -- I think she said 99.9999%, something like that -- of the fluoropolymer and what they call PICs, or "Products of Incomplete Combustion."

The studies that have been done recently are done in commercial-waste-to-energy plants, and they are getting several '9s destruction.

Now can you get incomplete destruction in PICs, if you do backyard burning, which is illegal,

sure you can. If you do the destruction and incineration in a regulated facility, and that facility is operating properly, the potential for emissions is extremely low. I can't say it's zero, but extremely low, and many other studies are going on at the moment.

In 2018 and 2022 papers that we have talked about as conflicted covered 96% of the global fluoropolymer market in terms of polymer types, 18 major types of fluoropolymers. If one actually reads these 2 papers, the actual assessment data and criteria as described in excruciating detail either in the paper or the supplementary information, it is clear that there is complete life cycle discussion particularly in the 2022 paper.

The "Conflict" designation, which we've heard a few times in the Testimony, appears to arise because, like myself no longer, but I was an industry guy. That "Conflict" means

that the work we were doing wasn't good and wasn't genuine, but the fact of the matter is that these authors, including myself, we have to sign a Conflict of Interest or a Disclaimer Statement from the journal or we can't publish the paper; it's a requirement.

Does the fact that we signed Disclaimers and Conflict statements, does that mean that there is something wrong? No, it raises no flags; it's required. You see that in all major journals, and I've always had to sign a Disclaimer.

A uniform one-size-fits-all warning could mislead consumers into believing that all of these materials pose similar risks, which is not consistent with the available scientific evidence as described above and elsewhere.

Q. Dr. K, my final question is how does that concern apply to other Exemptions in the Statute?

A. The same concern about

misleading consumers applies to blanket Labeling of the other exceptions listed in the Statute.

PFAS are not monolithic in their properties and uses. Many of the exempted applications involving highly technical market materials are critical in the industry to serve as the underpinning for modern life in numerous contexts such as:

Healthcare;

Energy systems;

Transportation;

Electronics; and,

Other infrastructure. These substances are essential to:

Safety;

Durability; and,

Performance.

Viable alternatives are not reasonably available without compromising function or introducing other risks.

Applying a uniform label to these categories would:

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Obscure these distinctions;
Potentially confuse consumers;
and,
Fail to reflect the careful policy judgments already embedded in the statutory Exemptions.
Due to these concerns the American Chemistry Council is proposing to exclude the proposed Exemptions in Section 20.13.2.10 from the Labeling requirements.

Q. I believe that concludes your Testimony.

A. It does.

MR. TRUJILLO: Madam Hearing Officer, we offer Dr. K up for questioning.

HEARING OFFICER ORTH: All right. Thank you very much, Mr. Trujillo.

Ms. Fiebig, do you have questions of Dr. K?

MS. FIEBIG: Just a couple. Thank you.

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CROSS-EXAMINATION

BY MS. FIEBIG:

Q. Dr. K, you've been present in the hearing room for the duration of these proceedings.

A. Monday I was actually online. But yes, I've been here every day, yes.

Q. You've been observing how things have gone.

A. I have, yes.

Q. I wanted to ask you a couple of questions about some of the information that we've learned over the course of the week:

In your report, or in your Written Testimony, and as you've described today, you've highlighted the relatively safe nature of fluoropolymers as a subclass of PFAS chemicals; right?

A. I have, and Barb has also. We both have, yes.

Q. Right, due in large part to they don't really bioaccumulate, they are not soluble in water, those sorts of characteristics.

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A. Understood, yes.

Q. We've also seen some concern raised over the course of the week by different witnesses about, you know, learning information later on about risks. You know, science is such that it evolves. Sometimes we learn later there are risks associated with products that we didn't appreciate earlier.

With that context I wanted to ask you if there are any fluoropolymers that have a lengthy history of safe use.

A. Well I think I'm going to agree with Barb; I'm not going to use the same, when I was 18, I thought I knew everything. I'm not going to use the same language she did.

Barb should have done herself justice. Her and her Gore colleagues published a paper in 2018. This was the first of the 2 "Polymers of Low Concern" studies, but what Barb didn't mention, but is a good example, is

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these fluoropolymers, particularly PTFE and things like PTFE, have been used in body for 40-, 50 years as implants and so on.

The significant amount of data that Barb put in that paper, as well as all the requirements that fluoropolymers need to be used in the body is a pretty good example of a 40- or 50-year history of safe fluoropolymer use.

PTFE is the largest, by the way, about 50% or 65% of the global fluoropolymer use. If we're looking at the majority of the fluoropolymers, and there is various PTFE grades, as Barb talked about, but that's a really good example of in your body and being safe.

Q. Are there any other examples of PFAS substances, fluoropolymer or otherwise, that have a long history of safe use?

A. Well I think, you know, one of the things that I did as part of my

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work with T.J. and his colleagues at ACC is, you know, you've heard about doing your own regulatory Rulemaking process here, but Europe has been very active in this area.

One of the things that we needed to do was to provide substantiation of the safety and use and utility of fluoropolymers in commerce. One of the things we heard -- I'm thinking it was Monday or Tuesday -- was from the coatings industry where he was talking about how it would impact coatings.

Most people don't appreciate the value of fluoropolymers in coatings and not necessarily in body, but in the external world as an example.

There is PBDF, which is a fluoropolymer. There is the Lumiflon fluoropolymer, and these are used in solar panels, building panels, bridges and thinks like that. Without these materials, as an example, you would see your bridges full of scaffolding.

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They would have to replace and repair every 5 to 7 years. If you use the fluoropolymers like the Lumiflon or PBDF in solar panels, you're 50- to 100-year replacement. They not only work, but they are very effective in what they do.

These products are used in sunlight and weather and saltwater, and they function perfectly fine, so it is a good example of how tough they are as an example.

Q. My last question:

In your Written Testimony, you had referred to the proposal that the Erlenmeyer flask be added. We've been characterizing that as sort of a Warning Label. I think we have heard some evidence this week to suggest that the Department is contending that it's really just intended to be informative and not a warning. I wanted to hear your reaction to that.

A. Well I'm going to start off first by saying I've got great respect

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for what you're doing, and I don't disagree that labels can have significant importance.

I also don't disagree with the fact that Labeling and informing consumers is a really good thing to do; I have no issue with that. I think to the extent that you can educate the consumers on a subject like this is really important.

I mean I've been in this a long time, so I've been involved in the ups and downs for all these years and seen all that's gone on in the company I worked for. It is important to educate, and we are learning new things.

The question for this label is what is it going to do, particularly an Erlenmeyer flask? I made a model for my cell phone, but it was blue, or about what color your water is. My water was blue. But does it have the appropriate impact on a set of chemistries that are, by the

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literature that we see and literature that we're adding every day with properties, hazards, exposure, which is largely completely different than the other PFAS.

That's what I was concerned about. Is that label going to have benefit to consumer products when there is no real exposure in most cases?

The risk of that exposure, given what I'll cautiously say is the potential inertness of fluoropolymers, that inertness also has a graduated meaning, but I'm not sure it's appropriate.

That's my thoughts. Nothing against the Labeling, and noting that it might not have a benefit for other consumer products who want to know what's in their products, and I think it's a good idea. The question is where is that label applied?

Q. Do you think it's likely to be perceived as a warning?

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A. Well --
MR. ROSEBROUGH: Madam Hearing Officer, I object to the question; he stated he is not an expert on Labeling.
HEARING OFFICER ORTH: Can you rephrase this question, Ms. Fiebig.
MS. FIEBIG: I will. I was just -- he had referred to it as a "warning" in his papers, and so I just wanted to see if he still perceives it as potentially sending that message.
HEARING OFFICER ORTH: I happen to remember that actually.
THE WITNESS: When I see a label I try to figure out what it means. Normally when I see a label, it's on products, and it's usually a warning. It's implying some risk. It often will prompt you to go look, especially if you don't know what the label means.
If there is an explanation with the label, then you don't have to go look any further. But with an Erlenmeyer flask with "PFAS" in the

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middle, if I weren't doing this for a living I'd be scratching my head.
The idea is it might prompt consumers to go look, and if that's what it does, that's probably a good thing, but it is a Warning Label in some form.
MS. FIEBIG: Thank you.
HEARING OFFICER ORTH: All right. We are 6 minutes before noon, so rather than proceeding to the next examiner, let's take our lunch break. We will return at 1:00 for Public Comment.
Sir, as soon as the Public Comment is over we will go back to you. Thank you.
(The Evidentiary Hearing recessed from 11:54 a.m. to 1:00 p.m.)
HEARING OFFICER ORTH: Good afternoon. Let's come back from the lunch break.
We are at Day 4 of the hearing in EIB 25-61, the Per- and Poly-Fluoroalkyl Rulemaking. We've reached

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our fourth Public Comment session.
I have at least 3 names here to call on, and I'll issue a general invitation.
Just a few things about Public Comment:
The hearing is being recorded and transcribed in its entirety by David Lee of Cumbre Reporters, so he will be trying to capture your words.
The hearing is also being interpreted between English and Spanish and Spanish and English, so we also have Interpreters trying to catch your words, so I would just ask you to speak slowly and clearly.
Ms. O'Grady, would you please tell people how to find the interpretation.
MS. O'GRADY: Madam Hearing Officer, clarification:
Do you want me to explain for the afternoon session how to find the channels again, or just for the Public Comment?

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HEARING OFFICER ORTH: For the Public Comment.
MS. O'GRADY: Thank you.
(Speaking Spanish.)
If there is anybody present in this hearing room that would also like to offer Public Comment, would you please let us know, and that way we can be ready when you're ready. Thank you.
HEARING OFFICER ORTH: Thank you, Ms. O'Grady.
Just 2 more things:
One, I'll ask you to Comment just once. You can submit as much written Public Comment as you'd like, But I'll ask you to keep your oral Comments to 3 minutes;
I will ask you to spell your first and last name; and,
Pursuant to the Board rules I'll ask if you swear or affirm to tell the truth.
We'll start with Mr. Meiklejohn.

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Mr. Meiklejohn, if you'd come up to this lighted microphone at the front of the room.
MR. DOUGLAS MEIKLEJOHN: Thank you, Madam Hearing Officer.
HEARING OFFICER ORTH: Would you spell your first and last name, please.
MR. DOUGLAS MEIKLEJOHN: Yes, certainly.
The first name is Douglas, D-O-U-G-L-A-S; last name is Meiklejohn, M- as in Mary, E-I-K-L-E-J-O-H-N. That's all one word.
HEARING OFFICER ORTH: All right. Thank you.
Do you swear or affirm to tell the truth.
MR. DOUGLAS MEIKLEJOHN: Yes.
HEARING OFFICER ORTH: I'll start your time.
MR. DOUGLAS MEIKLEJOHN: Thank you, Madam Hearing Officer, Board Members:

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As I said, my name is Douglas Meiklejohn. I'm an Attorney, and I work on water quality issues for Conservation Voters New Mexico.
Conservation Voters applauds the Environment Department and the Environmental Improvement Board for addressing the proliferation of PFAS -- pardon me, I can't pronounce the full name of that -- and the pollution that they cause, particularly pollution of water, and especially pollution of groundwater, which, as you know, is the source of drinking water for many people in New Mexico.
Conservation Voters has some concern about some of the Exemptions that are in the proposed regulations. We recognize that some of those Exemptions are not discretionary; that is, they are required by the Statute passed by the Legislature or required by the preemptive effect of federal law.

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On the other hand, some of the Exemptions are discretionary with the Board and possibly also the Department. They are generally classified as Currently Unavoidable Use.
Conservation Voters urges that because of the problems that PFAS have caused in the environment, that those and any other discretionary Exemptions be construed and applied as narrowly as possible.
Finally, as an Attorney who spent several decades litigating for protection of communities and the environment, I personally am gratified to see the meaningful enforcement provisions that were enacted by the Legislature included in the proposed regulations. Thank you very much.
HEARING OFFICER ORTH: Thank you, Mr. Meiklejohn.
Is there anyone else in the room here to offer Public Comment? I know we have a few folks online.
No. All right.

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Let's turn to Lindsey "Hueer" or "Hueer." If I'm mispronouncing your name, please just let me know.
MS. LINDSEY HUEER: No worries.
Good afternoon; I'll spell my name.
HEARING OFFICER ORTH: Thank you.
MS. LINDSEY HUEER: It is L-I-N-D-S-E-Y, and my last name is H-U-E-E-R.
HEARING OFFICER ORTH: Do you swear or affirm to tell the truth?
MS. LINDSEY HUEER: Yes, I do.
HEARING OFFICER ORTH: Thank you. I'll start your time.
MS. LINDSEY HUEER: Thank you.
Good afternoon, Madam Hearing Officer and Members of the Board:
Again, my name is Lindsey Hueer and I'm with The Toy Association. The Toy Association represents more than 800 businesses, some inventors, designers, manufacturers, and

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retailers, all committed to bringing safe, fun, educational toys to children.

In New Mexico specifically the toy sector generates $238 million in annual economic impact. We're deeply invested in ensuring that children and families in the state continue to have access to safe and affordable play.

We share many of the concerns expressed by other associations, but for my public comments today I want to focus specifically on concerns related to toys.

Toy safety and environmental stewardship are core values of our industry. PFAS is found only in a small percentage of toys, primarily in internal electronic components. In those cases the materials serve critical fire prevention and heat resistant functions. We don't want Kids' toys to catch fire due to overheating.

The components are fully

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enclosed, inaccessible to children during play, and present no risk of exposure to the child or the caregiver.

Additionally, there is no suitable alternative yet available to ensure safety of these products.

The products are expressly exempted from the ban in Senate Bill 212, but they would fall under the Labeling and reporting requirements in the Proposed Rule.

For toys, a mandate to label these products doesn't empower consumer choice over non-exposure. On the contrary, requiring a Warning Label on a product that presents no exposure risk would mislead consumers into believing that a toy poses a danger when it does not, undermining consumer confidence in safe products.

As a Mom myself, I know that a Warning Label should be a meaningful notice of a bona fide toxic risk, which is not the case with toys.

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Over-Labeling will lead consumers to not knowing the actual risk presence and leading to consumer fatigue for the label itself.

We think that the goals of Senate Bill 212 can be met with a few changes. We submitted comments, but again, for today's Public Comment, I want to focus on a couple of toy-specific items:

First, while we appreciate that there has been a label Exemption process in the proposed rules, we ask to outright exempt Labeling requirements where the PFAS in a toy is fully enclosed and inaccessible in those electronic component. A label is inappropriate for these products and should not be required to go through a recurring waiver process.

Second is having practical label standards for small toys and packaging. As we all know toys can be incredibly small, and requiring larger packaging to accommodate a label

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actually is worse for the environment.

Last, toy manufacturers are continually introducing new products. We would like to see streamlined reporting requirements at the product category level rather than SKU by SKU with the fees applying per manufacturer, not per product.

I appreciate your consideration of these issues and for the opportunity to provide comment today.

HEARING OFFICER ORTH: Thank you, Ms. Hueer.

We go now to Mr. Parkhomenko, Konstantin Parkhomenko.

MR. KONSTANTIN PARKHOMENKO: Can you hear me? I will spell my name.

HEARING OFFICER ORTH: Thank you.

MR. KONSTANTIN PARKHOMENKO: K-O-N-S-T-A-N-T-I-N, Konstantin; Parkhomenko is P-A-R-K-H-O-M-E-N-K-O.

HEARING OFFICER ORTH: Thank

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you. Do you swear or affirm to tell the truth?

MR. KONSTANTIN PARKHOMENKO: I do.

HEARING OFFICER ORTH: Thanks. I'll start your time.

MR. KONSTANTIN PARKHOMENKO: Thank you. Madam Hearing Officer, esteemed members of the Board:

My name is Konstantin Parkhomenko. I am an Environmental Attorney for the Sandia National Laboratories complex.

You may be asking yourselves, you know, if this is about protecting consumers, why is a National Laboratory Attorney giving Public Comment here?

Well as we all understand very well, the devil is really in the details in these kind of rules. We have some concerns about potentially an overbroad, potentially an unintentionally overbroad definition of "consumer" that will rope in

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organizations such as ours, which are really very sophisticated laboratories who really know what they are doing in the industry and understand the chemicals they are working with, and engaged in very important and sometimes classified work for the good of the nation. E are concerned about potentially overbroad rules that might impact the mission.

I do have some more specific comments, and they are a little bit technical, so please bear with me:

So we all know the Act defines "consumer product"; right?

"'Consumer Product' means tangible personal property that's distributed in commerce, normally used for personal, family, or household use, including product categories that are normally used in households," so on and so forth.

We are aware of that

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definition. We are also aware of the definition of "product," which, strictly speaking, is:

"An item created, produced, assembled, packaged, or otherwise prepared for sale to a consumer," and it goes on.

The Rule proposes to define "consumer" in a very broad way as:

"An individual, partnership, corporation, state agency, or subdivision of a state who seeks or acquires to purchase or lease any goods or services."

My comment, my supplemental comment, and I did submit written comments, which I do encourage everybody to review. My supplemental comment deals with the fact that I think the definition of the term "consumer" really should be defined in a way that's compatible with the definition of "consumer product" in

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the Act such that we don't get overbroad with the definition and rope in unintentional parties that really weren't ever meant to be within that scope.

As to Labeling, the Board may adopt rules to carry out the provisions of the Per-Fluoroalkyl Substances Act, including the requirement of Labeling products in English and Spanish. This appears to allow the Labeling of products as defined by the Act, but the Act really only concerns products sold to a consumer.

Organizations such as the National Laboratories, we are never really meant to be "consumers" within that scope of the Act. Therefore, I would encourage this body to adopt a suitably broad exception that will exclude or clarify the definition of "consumer" in a way that really makes it clear that it doesn't apply to entities such as ours.

HEARING OFFICER ORTH: Thank

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you, Mr. Parkhomenko.
MR. KONSTANTIN PARKHOMENKO: Thank you. I will submit written comments as well.
HEARING OFFICER ORTH: Sir, a Board Member has a question.
Chair Ely.
CHAIR ELY: Thank you for your comments this afternoon. I'm just wondering if your comments are comments from the lab, or are they your own personal comments? Thank you.
MR. KONSTANTIN PARKHOMENKO: Yes, my comments today do represent the position of the Sandia National Laboratories.
HEARING OFFICER ORTH: Thank you very much.
Let's see. Next we have Bill Rodgers.
There you are.
Are you unmuted?
Mr. Rodgers.
Okay. We'll wait a minute.

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MR. BILL RODGERS: How's that?
HEARING OFFICER ORTH: Much better, sir.
If you would spell your first and last name, please.
MR. BILL RODGERS: Yes, my name is Bill Rodgers. That's "B" as in boy, I-L-L; R-O-D as in dog, G-E-R-S.
HEARING OFFICER ORTH: Do you swear or affirm to tell the truth?
MR. BILL RODGERS: I do.
HEARING OFFICER ORTH: I'll start your time.
MR. BILL RODGERS: Good afternoon, Members of the Environmental Improvement Board and Hearing Officer:
My name is Bill Rodgers and I live in La Cieneguilla. My Wife and I bought our home in 2016 and learned in 2025 that we live within a massive groundwater plume of PFAS chemicals. Tests of our water told us that we have 4 times the level of PFAS that the EPA deems safe.

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I reported on this for 505OMATIC, and my neighbors talk to me about it almost every time they see me because they, like me, are afraid what this means for themselves and their families.
Though we are getting a filter system through the State, we have unknowingly drank, ate, and bathed in dangerous cancer-causing chemicals for almost 10 years. I cannot describe the terror we have lived with since getting these results.
I don't want people like ourselves to have to navigate this issue on their own. This issue is so esoteric that even my doctor didn't know what to advise when I told her I was exposed to these chemicals.
No one should have to live with this fear. No one should suffer fatal health consequences because of the companies who have exposed us to these chemicals and hid information about how harmful they are.

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I am grateful to see our state working to address these issues. The prohibition of some PFAS and Labeling are good first steps, but New Mexico is offering polluters loopholes that would limit the benefit people could get from these rules. That would be unacceptable to people like myself who cannot do something as simple as drink a glass of water from their tap.
We need to ban all PFAS for all the harms from its production, use, and disposal. I hope that this task force approved in this Legislative session will make sure we are truly and fully safe.
Please help us. Approve this Rule, but make it stronger by closing any Labeling loopholes and give New Mexicans greater safety, safety that industry and malfeasance has so far kept from us. Thank you.
HEARING OFFICER ORTH: Thank you, Mr. Rodgers.
Let me ask if there is anyone

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else on the platform who would like to offer Public Comment in this Public Comment session, which is very likely our final oral comment session.

I see Mr. Holm. John Holm.

Can you unmute yourself?

Pam or Luis, please...

I think you should be able to unmute now.

MR. JOHN HOLM: Thank you. Hi, my name is John Holm.

HEARING OFFICER ORTH: You're going to have to speak much closer to your microphone.

MR. JOHN HOLM: I'm so sorry. Can you hear me now? John Holm.

HEARING OFFICER ORTH: Yes, thank you.

Spell your first and last name, please.

MR. JOHN HOLM: Sure. John, J-O-H-N; last name Holm, H-O-L-M.

HEARING OFFICER ORTH: Do you swear or affirm to tell the truth?

MR. JOHN HOLM: I do swear to

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tell the truth.

HEARING OFFICER ORTH: Thank you. I'll start your time.

MR. JOHN HOLM: Hi. My name is John Holm, and I reside in Washington, D.C. I'm speaking on behalf of my organization, the Circular Supply Chain Coalition, and a lot of the work that we're doing, both in New Mexico and broadly across the United States and the globe.

I'm providing this comment today in strong support of the New Mexico Environment Department's Proposed Rule which implements the PFAS protocol. I urge the Board to adopt the Environmental Department's Rule as proposed.

Specifically, a lot of the work that we're focusing on is around leveraging urban mining, leveraging material reuse. When we look at PFAS in the space of materials and look at the landscape for materials, PFAS are known to be harmful; harming local

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communities of which we're operating in, harming the drinking waters of which is ubiquitous across the United States and across the globe.

New Mexico's way of looking and dealing with this within this Rule really provides clear context about how to be proactive about dealing with the PFAS solution by leveraging the power to design out PFAS's from inception and bring in materials that consumers can use that will not have this component in it that is harming and causing so much environmental and human harm.

Moving forward, I would really like to say that I thank the Environment Department for drafting such a strong and protective Rule.

Thank you to the Board and Hearing Officer for your time and commitment to protect New Mexicans and leveraging this as a model that can potentially be lifted across the other 48 states that do not have this type

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of proposal. I strongly urge you to adopt the Environment Department's Rule. Thank you.

HEARING OFFICER ORTH: Thank you very much, Mr. Holm.

Elena F.

MS. ELENA FERNANDEZ: Thank you. My name is Elena Fernandez. I am a Project Specialist for Amigos Bravos.

HEARING OFFICER ORTH: Hold on please.

If you would spell your first and last name.

MS. ELENA FERNANDEZ: My apologies; Elena, E-L-E-N-A, last name Fernandez, F-E-R-N-A-N-D-E-Z.

HEARING OFFICER ORTH: Thank you.

Do you swear or affirm to tell the truth.

MS. ELENA FERNANDEZ: Yes, I do.

HEARING OFFICER ORTH: I'll start your time.

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MS. ELENA FERNANDEZ: Thank you.

Again, my name is Elena Fernandez. I am a Project Specialist with Amigos Bravos. Amigos Bravos serves the entire State of New Mexico for water quality, protection, and restoration.

One of my projects is concerned with toxic pollutants across the State. I have worked closely with the Environment Department and communities that are impacted by toxic pollutants.

PFAS doesn't cause just physical harm, it causes mental harm or psychological fear from the unknown. I'm asking that the Environmental Improvement Board please adopt the PFAS Substances Consumer Protection Act.

New Mexico should adopt this Act to protect the health and well-being of New Mexicans and our State from the harms from intentionally added PFAS in our consumer products,

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which provide only minor convenience when compared to the very real dangers to ourselves and the State.

The choice to reject this Act will have big consequences for New Mexicans' long-term health, negative impacts to medical treatment, and affordability from diseases related to long and constant exposure to PFAS, as well as the constant remediation of waters, lands, and agricultural.

Essentially, all New Mexicans and our State's well-being will be negatively affected by continued PFAS pollution and prolonged exposure. Please choose New Mexicans and choose New Mexico to be a leader against PFAS pollution.

Lastly, Labeling provides New Mexicans information such that they can make informed personal independent choices and decisions as to which products they deem safe or appropriate for their everyday use and livelihood.

Transparency is not punishment

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or blame, it is the right thing to do. Industry is good at adapting to business needs, and doing the right thing by consumers would be a positive change.

I thank you for your time, and I send my thoughts to the people of La Cieneguilla who have been impacted by the groundwater pollution. Thank you.

HEARING OFFICER ORTH: Thank you, Ms. Fernandez.

Member Curry, do you have your hand raised?

BOARD MEMBER CURRY: I do, Madam Hearing Officer. I just wanted to follow up on Chairman Ely's question from the gentleman from Sandia. He said he had a written statement, and I was just curious if he is still on the line or if we've got it.

Does the written statement also reflect the position of Sandia Labs?

HEARING OFFICER ORTH: Let's

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see.

Mr. Parkhomenko, are you still on the platform?

MR. KONSTANTIN PARKHOMENKO: Hello. Can you hear me?

HEARING OFFICER ORTH: Yes, hello.

MR. KONSTANTIN PARKHOMENKO: Yes, I'm still on the platform.

It is on our letterhead, so it should reflect that. There will also be a supplemental set of Public Comments, which will also be on official letterhead and it will also state that it's our official position.

BOARD MEMBER CURRY: Thank you.

MR. KONSTANTIN PARKHOMENKO: Thank you.

HEARING OFFICER ORTH: Thank you, Member Curry, and thank you Mr. Parkhomenko.

Is there anyone else on the platform here in what, I believe, will be our final oral Public Comment

session?
I see no hands. I don't see that anyone has joined us, and no in the room.
I think we'll return to the Technical Case. Please know if you are aware of someone who would like to offer Public Comment for this Rulemaking, written Public Comment may still be submitted here for several days more.
All right. Let's see. Dr. K, would you rejoin us at the front of the room?
Thank you very much. Good afternoon.
Let's see, Mr. Smithkier.
All right. Mr. Knight.
MR. KNIGHT: Thank you.

CROSS-EXAMINATION

BY MR. KNIGHT:
Q. Dr. Korzeniowski, I take it from your Testimony, and I think you may have stated this, that you consider

yourself to be an expert on PFAS. Is that correct?
A. I don't think anybody can be an expert on all PFAS, but certainly I'm a Subject Matter Expert in telomer chemistry with a fair amount of knowledge in fluoropolymers also, no refrigerants.
Q. So what specific type of PFAS, if you know what specific types of PFAS are used in food packaging for example.
A. They would have been, in general, fluorotelomer-based polymers. There is also some oxygenated materials from companies like Solvay and others, small PFPEs or small molecules, but largely fluorotelomer-based products.
They have largely been phased out, but those were generally what was used to provide the oil and water, particularly the oil or grease repellants that was needed on paper products.
Q. And what about a product like

Scotchgard, what specific types of PFAS, as far as you know, are used in a waterproofing product such as Scotchgard?
A. Well I mean, you know, Scotchgard wasn't made by us, it was made by 3M. They had a different set of chemistry and different backbone, but they would start with either the PFOS, which we heard about a lot here, as a raw material, or what we would call the sulfonyl chloride, the PFOS here and the sulfonyl chloride here. They would bolt on different additives and make polymers out of it.
They would be applied in the same manner. They are different chemistries, but the end function would be the same for particularly oil, oil and grease repellency.
Q. How about a product such as Rain-X; are you familiar with that product?
A. Rain-X I thought was silicone based.

Q. So not containing PFAS.
A. Not that I know of.
Q. Okay. Baking paper or something also known as parchment paper.
A. Parchment paper.
Q. Yes.
A. In the old days, many, many -- this is 25, 30 years ago, they would use some of the fluorotelomer products or some of the PFAS products, particularly polymers to coat the butter paper, but that's long done. That's long been done.
People at FDA that I worked with, I personally spent a lot of time at FDA because some of the products that we had made would have to go through FDA registration, so I spent a lot of time there, but never worked on parchment paper.
Q. Do you know whether parchment paper commonly contains PFAS as sold today?
A. I don't know that. I think, I

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mean, we all know, and really know, because of the amount of news on PFAS chemistries, many companies have market deselection. They decided they don't want to deal with PFAS chemistries any longer.

Many end-use applications have decided to give up the properties of oil repellency. Textiles is a good example. That industry has largely moved to durable water repellents that have no fluorine.

What that means is you will get water repellency, but you couldn't get the durability. You won't get the severe weather protection, and you certainly won't get oil protection, but it works.

If you don't need something in hazard areas, then you don't need it, So many markets have moved away for obvious reasons.

Q. And what do you know about the use of PFAS in common brands of dental floss? Is; that still something that

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commonly contains PFAS to your knowledge?

A. Dental floss is a polymeric, like a floor polymer, not telomer-based, and that's been studied. I believe that dental floss is still FDA approved.

Q. Can you briefly describe the differences between a fluorotelomer and a fluoropolymer?

A. Sure. You ready?

Q. Go ahead.

A. I promised I wasn't going to do chemistry; I lied.

For fluorotelomer chemistry, we'll do polymer and polymer. I think that's the easiest way because that's what I think we want to compare:

A fluorotelomer-based polymer has a hydrocarbon backbone, not a fluorinated backbone, so just carbon and hydrogen in the backbone. It has appendages, like if you look at a comb or pull out a comb, you've got the backbone and you've got tines in the

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comb. There is side chains that sit on the side of that backbone of carbon and hydrogen.

Now they work relatively well. I mean they do their job. But as we've heard today and during the week and in the literature, they can fall apart. They can hydrolyze.

Now it's going to depend on what the media is. We have done studies that show half life of some of these polymers in soil, sediment, and sludge is thousands of years. Others who have done studies say it's hundreds of years, but they will break down.

When they break down, they give what we heard about as precursors, And those precursors will break down to PFAAs. That is a fact. It might take a long time, but that'll work.

Now fluoropolymers have a backbone of carbon and fluorine. Some of them have oxygen, and that's the perfluoropolyethers. That completely changes the properties. They are not

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going to break down into the PFAA precursors that we've heard talked about.

The fundamental difference is the backbone and how much fluorine is in that molecule. With fluoropolymers it's carbon and fluorine. With fluorotelomer, you've got a hydrocarbon backbone, and the appendages which can be labile depending on what the polymer is and what it's treated with.

Q. These side-chain fluorinated polymers represent a high percentage of all PFAS-containing products. Is that correct?

A. No, I would not agree with that.

Q. What percentage of all PFAS-containing products would you say side-chain fluorinated polymers represent if you could attach a number to it?

A. Well I don't think I can answer that now because, as I said a minute ago, there has been very significant market deselection. The textile and carpet industry has

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basically gone from these chemicals and they have been for years.

The textile market has been under tremendous siege, particularly in Europe and the U.S., so people have gone away from those, or away from fluorine, those were side-chain fluorinated polymers.

The paper industries may still use some, but they are largely moving away. They are trying to create non-fluorinated alternatives that may not give you the right performance, but they will give you some.

We have firefighting foams. We have talked about that, too, where they have gone to fluorine-free foams, but they don't work as well.

The military, at least in land-based systems, not ocean or not water-based systems, land-based system have shifted to fluorine free.

I mean a lot of it is public pressure and political pressure, so the market has shifted so

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dramatically. I mean I can't keep up.

All I know is it is significantly different than 10 years ago, and another 5 years from now it will be significantly different also.

Q. All right. Your typical non-stick skillet, is that using fluoropolymers or something else?

A. Well I mean there are some non-stick skillets that are ceramic and they have other technologies.

If you're looking at a skillet coated with PTFE, for example, if it was PTFE from DuPont, now Chemours, it was branded "Teflon," but Teflon is a brand that goes with performance.

But yes, this is an FDA-regulated use, and my colleagues -- I wasn't in the fluoropolymer business 25 years ago, but they spent a lot of time at FDA. In order for you to get FDA approval, you have to do what they call "Extraction Tests." Those Extraction Tests are based on the use that pan is going to get. That's

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normal use, that's not 500 degrees centigrade. It's normal use of what you would cook at home.

They would take the oils, they'd take the pan itself, they heat it up, and then you would measure what transferred from that pan or skillet into the oil, and then they'd measure it. They'd calculate the potential hazard based on the hazard of the coating and what extracted. That's how you get FDA certification. As far as I know, it's still certified.

FDA obviously continues to look at this because this is an area that's got a lot of people's focus for sure.

Q. But you would acknowledge that a non-stick pan that is left on the stove too long and gets too hot is going to emit fluorinated gases or vapors. Is that right?

A. I'm not saying -- I think anything you abuse has the potential to do that. I mean you're not supposed to put your pan on and walk away. If

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you put the pan on and walk away or you put the pan on and you turn it up to a degree it's not supposed to use, it has the potential to degrade in some manner.

Normally what you will see, and you can argue, if you like, that you're not supposed to do that to the pan. Do people make mistakes? Probably. Should they replace the pan? Absolutely.

Q. Thank you for that.

A. Sure.

Q. Your Testimony acknowledges that there are environmental effects from the manufacture of fluoropolymers. Isn't that correct?

A. I think that history is long out there. I mean I think the emissions from the fluoropolymer manufacturers has been probably the major issue for this industry for many years.

As I mentioned when T.J. was asking me about my background, myself

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and 3 other colleagues, 2 of which were from the University of Stockholm, we decided in 2004 that we wanted to look at particularly PFOA, but it was PFCAs. We wanted to look at where PFOA was coming from, And it was, I guess, all of a 2-year project.

What we did is we looked at every emission source or potential source for PFOA in the environment, and fluoropolymer manufacturing was at the top of the list, yes.

Q. And as I think I heard in your Testimony, you stated that the manufacture of fluoropolymers still to this day typically involves the use of non-polymeric PFAS. Is that correct?

A. What they do is, as I said -- and I don't have a current number, but I think Barb did say this:

If the technical end use requires a certain specification of fluoropolymer that the only way you can get that is using a polymerization aid, those companies are still doing

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that, But they are also doing something else.

They are doing everything they can to switch all the other uses over to the non-fluorinated polymerization aids, and they are trying to work on creating new ones. They want to get out of using the small molecules, the fluoropolymerization aids, and I've said that.

We've been talking about this for 20 years, And they've made significant progress. I think PVDF, which is the second largest fluoropolymer, is largely out of using the fluorinated polymerization aids.

As Barb talked about today, there are some specific uses for PTFE, that's still needed because the customer requirements require it. In other words, the technical purity or the technical properties of the fluoropolymer are required.

But the goal is to find a way, and I can tell you this: If the

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industry could find a way to not use them, they would, and that's their goal.

Q. Well that's great to hear, but they are not quite there yet. Is that right?

A. You're correct.

Q. As you pointed out in your Testimony, "low concern" is not the same as "no concern"; correct?

A. That's what I said, yes.

Q. Okay.

MR. KNIGHT: I think that's all the questions I have.

THE WITNESS: Thank you.

HEARING OFFICER ORTH: Thank you, Mr. Knight.

Mr. Harris, any questions?

MR. HARRIS: No questions, Madam Hearing Officer.

HEARING OFFICER ORTH: He said "No questions..."

Mr. Wetherbee, do you have questions of Dr. K?

He may have stepped away.

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All right. Is there Redirect?

MR. TRUJILLO: At this time, I do have some Redirect questions, Madam Hearing Officer.

HEARING OFFICER ORTH: Great. Go ahead.

REDIRECT EXAMINATION

BY MR. TRUJILLO:

Q. Dr. K, thank you for your Testimony. I do have a couple questions for you:

I want to return to your comments on Labeling at the end of your Direct Testimony.

A. Okay. Sure.

Q. Can you give us some context on your comments?

I'm summarizing here, but "Labeling can't be good." Can you give us the context of --

A. What I was saying about that is I was giving credit to the State and for having a program to work with their constituents, and clearly based

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on the comments you heard today and yesterday, it's an important thing to do. My comments were particularly related to -- I'll answer your question in a second:

In the Bill you have a list of exempted products. Our position is they should not be labeled because of what I had said this morning and again this afternoon, which is that the risk of exposure from a fluoropolymer...

In the days that I've been in this industry there is no such thing as zero, but it's vanishingly small if there is going to be any risk of exposure from a fluoropolymer given all the testing that's been done over the years.

What I also did say, though, is that if there is consumer products that have PFAS chemicals that can expose the population, and they can and it does potentially have a risk that can be quantified, then it's possible then that a label would be

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beneficial.

My comments also were -- again, I may get counseled on this, but it is that I'm not sure that label would do it, but that's an aside. I'm not a label expert, but to me, as a Chemist, I wouldn't know what to do with that.

Q. One last question:

Do you have any final thoughts that you would like to leave with the Board relative to your Testimony?

A. Listen, the Board needs to understand that I really do appreciate being able to come here today.

I would hope, because you've heard lots of Testimony, and you've heard completely different testimonies from different people, especially Barb and I, but I would hope you would take into consideration our backgrounds, our experience, and then take into consideration some of the things that we've given you to think about today. Thank you.

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MR. TRUJILLO: That's all of my questions. Thank you very much, Madam Hearing Officer.

HEARING OFFICER ORTH: Thank you, Mr. Trujillo, and Dr. K.

We'll move to the Board:

Vice Chair Suina, do you have questions?

VICE CHAIR SUINA: No questions. Thank you.

HEARING OFFICER ORTH: All right. Chair Ely.

CHAIR ELY: Good afternoon, Dr. K. Thank you for being here, too. I appreciate your Testimony.

THE WITNESS: Thank you.

EXAMINATION

BY CHAIR ELY:

Q. You talked about some studies that looked at incineration of fluoropolymers and --

A. I did, yes.

Q. -- and the potential for a 99+ destruction rate, provided the

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temperature was high enough. Is that right?

A. Yeah, there is no question, no question whatsoever that if you don't have something above 900 C, for example, or 980 C, you have a significant potential of not finishing the job, that's true.

Most municipal waste incinerators, if they're running on their permit and following their permit, are going to run at 1,000, 1,000 degrees. Hazardous waste may be 11-, 1150.

We have done a lot of work studying this. When you look at the studies that have been done under controlled conditions, as well as commercial conditions, as Barb said, we're getting several '9s destruction, and you need that.

Just for the Board to understand, 99.9% is a wonderful thing, but that's 1,000 parts per million that's still left over, and

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that is very different from PPTs, which is what we're talking about today. You need several '9s destruction.

What you need to do is you need to run the equipment the way it's supposed to. You need to have your proper emission controls in place, and you need to have the right analytical. As long as you do all of that, you have a really good chance of...

You know, I mean you're supposed to operate with no emissions, so we're pretty close to that, but we have to get agreement with EPA.

Our particular group has been working back and forth with the U.S. EPA; they have extensive experience in incineration.

We have been working with a lab out of North Carolina to try to get guidance so that when we do our work, they will say it's okay. They are hard to get to say it's okay, but that's what we're doing.

The studies Barb cited and

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what I cited are really good. The thing that people don't want to see, and you heard this today, is the little things that don't get burned, or the PICs, but the products that get complete combustion. They are the small non-polymerics.

Developing the analytical methods to measure those has been a huge challenge, but they are now in place. We can now measure what's coming out to a very, very small amount.

Q. So you're talking about needing the 900 C.

A. You probably need to be above that.

It depends on the polymer also. PTFE is the hardest fluoropolymer to destruct, so if you're using Number 2, which is PPDF, 900 probably would be fine.

Q. Okay.

A. But we've started with PTFE because that's the hardest, and most

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people have done the same thing.

There is one study that used a mixture and, you know, I didn't design the study and I find it hard to interpret, but the whole idea is if you can get the PTFE to completely burn, you probably got the conditions you need to be safe.

Q. I'm just thinking of conditions where, say in New Mexico, I've seen people burning their trash, you know. What kind of --

A. Do you want me to cringe now or later?

Q. It may not be legal, but it happens.

A. Yeah.

Backyard burning, you can't control it. That's where a public service campaign would probably be good, though I don't work in New Mexico except for this week.

Backyard burning is not a good idea, especially with these products. They are likely not to do you any

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harm, but the fact of the matter is you're then putting emissions in the air, and that can travel.

And it may not be you, but backyard burning, you know, I worked for many years with the U.S. military and the Department of Defense. A lot of work I had done has been in firefighting foams and related products.

I spent a lot of time at DOD, and they are just like us today. You really want to discourage burning of these kinds of products.

I mean they have armaments. The military coats a number of their products with fluoropolymers and the like to keep them waterproof, and, you know, they need to destroy them.

Armament destruction or warfare destruction is a big program. That's where I read about all the backyard burning stories; not a good idea.

Q. I think back to the days when my Mother would burn our family trash;

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I shutter and wish I could go back and tell her.
A. If I cringe, I'm sorry.
Q. Please stop.
All right. You mentioned waste-to-energy plants.
A. Yes.
Q. Those are regulated.
A. They are regulated, yes.
Q. In New Mexico I think we only have 1, and I believe they are outlawed in the State's jurisdiction. Do you know of waste-to-energy plants in New Mexico?
A. I do not.
Just to be on the up-and-up, incineration is tough to do because there is not enough incinerators, so that's the second issue. If you wanted...
You know, the...
A lot of states, for their own reasons, won't take waste like this, hazardous waste. If you try to find a hazardous waste incinerator, sometimes

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you have to go to other states. Then if they will take it, great; if they won't, you have to go to Plan B.
CHAIR ELY: All right. That's all of my questions. Thank you.
THE WITNESS: Thank you.
HEARING OFFICER ORTH: Thank you.
On the platform, Member Bitzer, do you have questions of Dr. K?
Member Carrasco, do you have questions of Dr. K?
BOARD MEMBER BITZER: Sorry, I couldn't get to the button properly; it wasn't expanding for me.
HEARING OFFICER ORTH: Okay.
BOARD MEMBER BITZER: Yeah, no, I don't have any questions. I'm just also old enough to remember burning trash out in the backyard with my Dad once a week. We lived in the Bay Area of California, too; it was pre-EPA days.
Anyway, thank you; it's been

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informative.
THE WITNESS: Thank you.
HEARING OFFICER ORTH: Thank you.
Member Curry, do you have questions of Dr. K?
All right. Anything further before we excuse Dr. K?
No. Thank you very much, sir.
THE WITNESS: Pleasure. Thank you.
HEARING OFFICER ORTH: Let me ask the parties if there is anything else they are aware of that we would need to do?
We do have a request from the Board for a bit of additional Testimony, but let me ask the parties first. No.
MR. MOELLENBERG: Madam Hearing Officer, nothing.
Our Technical Testimony has concluded and other than the post-hearing proceedings, I don't think we have anything else.

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HEARING OFFICER ORTH: All right. Thank you very much.
Chair Ely, would you like to describe what you would like to hear? I might mangle it otherwise.
CHAIR ELY: Probably not any worse than me, Madam Hearing Officer.

EXAMINATION

BY CHAIR ELY:
Q. I have a question on Labeling of Complex Durable Products; it's in the Rule. I don't know if Dr. Chapman would be the best person to answer that question probably. It relates to Paragraph 2.13D(1).
You were talking about all the "mays" and "shalls" earlier today, and I'm particularly interested in the last sentence there.
The way I read this paragraph, it looks like the Erlenmeyer flask with "PFAS" is a requirement, and there is additional language that needs to be included, or an additional

EXHIBIT C

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF SARAHANN M. RACKL, PH.D., P.E.

I, Sarahann M. Rackl, Ph.D., P.E., hereby declare and state as follows:

1. I have been retained by counsel for Plaintiffs as an expert in connection with the above-captioned litigation.

2. I have been asked to provide my expert opinions on the variability of potential risks across the broad range of chemicals that would be considered PFAS under the New Mexico Per- and Poly-Fluoroalkyl Substances Protection Act ("PFAS Act"), N.M. Stat. § 74-15-1 *et* seq. In particular, I have been asked to focus on the differences in PFAS hazards and exposures from the various ways in which PFAS is applied. I have also been asked to discuss the impact of PFAS

treatment and disposal options available to manufacturers which might reduce or limit the release of PFAS into the environment. In addition, I have been asked to consider the essential role that PFAS plays in certain applications, based on its persistent characteristics.

3. I have actual knowledge of the matters stated herein. If called to testify in this matter, I would testify truthfully and based on my expert opinions.

4. In preparing this declaration, I reviewed the PFAS Act, the New Mexico Environmental Improvement Board's (the "EIB") implementing regulation, NMAC § 20.13.2, and all other documents cited herein. I am also relying on my scientific education and training, my industry experience, my research experience, and my knowledge of the scientific literature in the pertinent fields, as set out in my curriculum vitae, attached hereto as **Exhibit A**.

5. The materials I have relied upon in preparing this declaration are the same types of materials that experts in my field regularly rely upon when forming opinions on these subjects. These materials are listed in **Exhibit B** to this Declaration.

6. I reserve the ability to supplement the opinions stated in this declaration or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.

I. BACKGROUND AND QUALIFICATIONS

A. Qualifications

7. I hold a B.S. in biology from the College of William and Mary (1997), a M.S. in civil and environmental engineering from University of Colorado, Boulder (2002), and a Ph.D. in civil and environmental engineering from University of Colorado, Boulder (2004). I have been practicing in the field of environmental science and engineering for more than 25 years as a researcher and consultant.

8. I have extensive, first-hand knowledge of the regulatory, commercial, and scientific dimensions of PFAS.

9. I am currently employed as a Principal Engineer in the Environmental & Earth Sciences practice at Exponent, Inc. where I specialize in conducting human and environmental risk assessments for chemicals of concern, including PFAS. I provide consulting services in the areas of engineering, microbiology, analytical chemistry, water quality, consumer product safety, and human and environmental risk assessments for chemicals of concern.

10. Since 2017, I have been conducting risk assessments for PFAS, including for the purpose of compliance with California's Safe Drinking Water and Toxic Enforcement Act of 1986, which is commonly referred to as "Proposition 65." I rely on my multidisciplinary technical background and industry experience to support manufacturers who have historically utilized PFAS during the manufacturing process. I also work with product manufacturers to identify the presence of PFAS in their products and develop strategies to identify and eliminate unnecessary PFAS sources. I have experience working with a broad range of products—such as food, apparel, textiles, food packaging, and personal care products—to assess the potential presence and impact of PFAS by using different testing methodologies.

11. My work on PFAS is backed by a strong understanding of consumer product and environmental regulations. I have developed numerous compliance and product stewardship programs for companies with extensive product lines; including food and beverage, food packaging, apparel, textiles, cosmetics, personal care products, common consumer household and office products, and specialty industrial products. As part of this work, I support manufacturers in evaluating and conducting root cause analyses for PFAS emissions and discharges. I have also supported clients in evaluating the removal and treatment of water and wastewater for PFAS.

B. Compensation

12. I am being compensated at a rate of $455 per hour. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

C. Previous Testimony

13. I have not previously testified as an expert witness.

II. SUMMARY OF OPINIONS

14. New Mexico's definition of "PFAS" covers thousands of different chemicals, which have diverse and unique chemical properties. That broad coverage comes from the law's broad definition, which is structural: it defines PFAS as "a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." N.M. Stat. § 74-15-2(S).

15. Whether a particular chemical poses a risk to human health and the environment cannot be discerned from chemical structure alone; assessing risk requires evaluating the hazards posed by a chemical, and how it might be introduced to a person or into the environment. Chemicals identified as PFAS might be used in different products in different ways; thus, the risk potential for each PFAS and its specific applications can be extremely different.

16. Existing scientific research does not support treating a broadly defined group of PFAS with a broad brush, as if all PFAS posed the same risk to human health and the environment. As explained below, PFAS risk depends on a number of factors, just one of which is chemical structure. Assessing PFAS risk requires an evaluation of hazard and exposure; that evaluation, in turn, requires a holistic examination of factors such as how a PFAS is used and the ways in which humans and the environment might come into contact with the chemical (or not).

17. Moreover, existing and emerging technologies can reduce PFAS emissions by safely disposing of or destroying PFAS from manufacturing facilities that make or utilize PFAS in producing consumer products.

18. Certain PFAS used for specific applications have been identified as having potential risks to human health and environment that outweigh their beneficial use in products. Many of these PFAS applications have been and are being phased out. Other PFAS and their applications do not have the same risk profiles and are essential to the durability and function to many products used by the consumer public every day.

III. BACKGROUND

A. Background on chemical risk assessments

16. Chemical risk assessments are used to characterize risk and inform safety decisions relating to that chemical. These assessments involve a systematic process for identifying and analyzing the potential hazards and exposure scenarios for chemicals or groups of substances—in other words, for determining what dangers a chemical might pose (hazard), and how that chemical might be introduced to people or to the environment (exposure). Risk assessments are the foundation for making decisions to protect public health and the environment, and they help drive regulatory decision making.[1] The potential environmental or human health risk associated with a chemical depends on not just a chemical's structure, but also the hazards associated with the chemical, and exposure to that chemical.[2]

17. In its simplest form, Risk = Hazard × Exposure.

[1] National Research Council of the National Academies, *Science and Decisions: Advancing Risk Assessment* 422 (2009).

[2] U.S. EPA, EPA 100-B-00-002, *Risk Characterization* 10 (2000), https://www.epa.gov/sites/default/files/2015-10/documents/osp_risk_characterization_handbook_2000.pdf.

18. "Hazards" are the harmful effects associated with a chemical. A hazard assessment involves identifying the potential harmful effects of a chemical, including relevant routes of exposure, and the dose levels or exposure thresholds at which those effects could occur.[3] Assessing hazard to human health, for example, may mean evaluating the levels (or concentration) at which a chemical has been demonstrated to cause cancer. Determining environmental hazard would require examining the levels at which a chemical might cause harm to the environment—either causing harm to organisms directly, or impairing their ability to have viable offspring.

19. "Exposure" is the amount of a chemical that enters and interacts with, or causes biological harm to, the human body and other organisms. An exposure assessment considers the potential magnitude and route of exposure and may also assess the frequency and duration of the exposure at a specific magnitude.[4] There are many routes of exposure, including inhalation, dermal, and oral (direct ingestion or indirect hand-to-mouth).[5] The impact of the route of exposure for a specific chemical can also be unique to humans and other organisms. The routes of exposure relevant to a chemical depend on the chemical's properties.[6] For example, a chemical's potential to volatilize may affect whether it can be inhaled, its potential to cross skin barriers may determine whether it can be absorbed through the skin, and its solubility in water or food may determine whether it can be ingested.

20. Bioaccumulation occurs when an organism absorbs or consumes chemicals from their environment and retains those chemicals within their tissue faster than they can be eliminated. When an organism consumes (direct ingestion exposure pathway) another organism that has been

[3] *Id.*

[4] *Id.*

[5] *Id.*

[6] Hans-Joerg Burger & Michael Schwenk, *Importance of Physicochemical and Physical Properties for Toxicological Risk Assessment, in* Regulatory Toxicology 1 (Franz-Xaver Reichl & Michael Schwenk eds., 2021).

accumulating a chemical within their tissue (e.g., big fish eating a small fish), this is considered biomagnification. Through this exposure pathway, some chemicals can be passed along within the food web.

21. The fact that a person merely touches a product or material does not mean that the person will be exposed to every chemical in that product or material. The chemicals that make up the material or product would need to migrate, be released, or be leached out of the product or material, so that the chemicals can interact with or enter the body. That is how "exposure" occurs. If a chemical does not migrate, release, or leach out of products, it is often considered chemically inert.[7] Similarly, if a chemical does not interact with the human body or organisms, it is generally considered biologically inert.[8] For example, if a person holds a device, it does not mean the person is exposed to internal components or the chemicals that comprise those components. Another example is an implantable medical device—a person relying on the device will obviously come in high contact with the device's materials, but chemicals that comprise the materials are typically chemically inert or chemically stable and do not leach or interact with the body in any way.

22. Risk can only be meaningfully characterized by considering both hazard and exposure together, such that the risk of a chemical with significant hazards is low if there is no meaningful exposure. For example, lightning can harm people and animals, but lightning becomes a higher risk when standing outside during a thunderstorm versus staying inside a building.

23. The concept of harm and exposure jointly informing "risk" is embodied in many federal and state regulations that require risk assessments in connection with the use of chemicals.

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[7] Int'l Union of Pure & Applied Chemistry, *Inert in* IUPAC Compendium of Chemical Terminology (5th ed. 2025), https://goldbook.iupac.org/terms/view/I03026.

[8] H. Murali Rao et al., *Bioinert and Bioactive Materials – Narrative Review*, 13 J. Pharm. Negative Results 2251, 2251-52 (2022).

The U.S. Environmental Protection Agency ("EPA"), for example, looks at the hazard and potential exposure to evaluate and quantify risk in implementing and enforcement of regulations. EPA's rules under the Toxic Substances Control Act ("TSCA") specify that if an eligible chemical substance has a "significant new use," EPA's risk assessment for that use must consider potential exposures arising from the conditions of use.

24. California's Proposition 65, which requires a warning label for consumers if a product contains chemicals that are known to cause cancer, birth defects, or reproductive harm, also takes a hazard- and exposure-focused approach to its labeling requirements. Manufacturers are not required to label a product simply because it contains a chemical that might be carcinogenic; instead, Proposition 65 requires a label only after the state has confirmed the identity of the chemical and the associated hazard, and the manufacturer knows consumers might be significantly exposed to the listed chemical (above a chemical- and hazard-specific threshold).[9]

B. PFAS terminology utilized for purposes of this declaration only

25. New Mexico's definition of "PFAS" can cover many thousands of molecules with unique structural, chemical, and physical properties. Although there are different ways to group and categorize the subcategories of PFAS, I refer mainly to three categories throughout this declaration, which I describe below.

26. **Non-polymeric or "small molecule" PFAS**. PFAS have different molecular weights. The phrase "small molecule" is used to refer to PFAS that weigh somewhere between 200 to 500 Daltons,[10] as opposed to the fluoropolymers that might have a mass of more than

[9] Cal. Code Regs. tit. 27, §§ 25701, 25801.

[10] For example: PFBA (C4) is ~300 Daltons and PFDA (C10) is ~500 Daltons. PubChem, *Compound Heptafluorobutyric acid*, National Center for Biotechnology Information, https://pubchem.ncbi.nlm.nih.gov/compound/9777 (last visited June 29, 2026); PubChem, *Perfluorodecanoic Acid*, National Center for Biotechnology Information, https://pubchem.ncbi.nlm.nih.gov/compound/9555 (last visited June 29, 2026).

100,000 Daltons.[11] Small molecule PFAS include long chain PFAS, generally defined as having six or more fluorinated carbons ("C6"), and short chain PFAS, generally defined as having less than six fluorinated carbons.[12] The chemical structures of small molecule PFAS lend to their surfactant properties, which have historically made them useful in diverse applications (e.g., fire suppression, water- and stain-resistant treatments, lubricants). Many small molecule PFAS are referred to by the number of fluorinated carbons. For example, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are both called "C8."

27. **Polymeric PFAS**. "Fluorinated polymeric compounds" include any polymer containing fluorine anywhere in its structure. This includes side-chain fluorinated polymers, polymeric perfluoropolyethers, and other partially fluorinated polymers. These compounds are often designed for surface functionality (e.g., stain resistance, oil/water repellency) and may potentially degrade or break down at different rates to produce small molecule PFAS depending on their structure and environmental conditions.[13] Fluorinated polymeric substances may contain lower molecular weight components or degradable side chains that can result in environmental mobility and formation of smaller PFAS.[14]

28. **"Fluoropolymers"** are a subset of fluorinated polymeric compounds that consist of long, high molecular weight chains of carbon atoms bonded to fluorine atoms, and bonded

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[11] Barbara J. Henry et al., *A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers*, 14 Integrated Env't Assessment & Mgmt. 316, 322 (2018).

[12] Organisation for Economic Co-operation and Development, *Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance* 17 (July 9, 2021), https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/07/reconciling-terminology-of-the-universe-of-per-and-polyfluoroalkyl-substances_a7fbcba8/e458e796-en.pdf.

[13] Organisation for Economic Co-operation and Development, *Synthesis Report on Understanding Side-Chain Fluorinated Polymers and Their Life Cycle* 21, 25, 30-31 (Nov. 15, 2022), https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/11/synthesis-report-on-understanding-side-chain-fluorinated-polymers-and-their-life-cycle_5c473fc6/e13559f7-en.pdf.

[14] Henry, *supra* note 11, at 317.

together in repeating units (i.e., the polymer backbone is carbon-based, and fluorine atoms are attached to the backbone).[15] The large size and lack of water-solubilizing functional groups in fluoropolymers result in materials that do not have surfactant properties (like the small molecule PFAS), are considered immobile in the environment, and are stable under many chemical, biological, and environmental conditions.[16]

IV. Opinions

A. The vast physical and chemical differences in PFAS result in significant differences in hazards

29. There is no universally accepted definition of "PFAS" or a universally accepted understanding of what constitutes "PFAS." As the Department of Defense has noted, the definitions are "structural," and they do not "inform whether a substance is harmful."[17] They "only communicate that the substances share common structural traits to varying degrees."[18]

30. Many government bodies and nongovernmental organizations have cautioned that a structural definition alone is not sufficient to identify whether a PFAS chemical poses a risk to human health and the environment. Rather, these bodies have cautioned that any risk assessment must involve evaluation of hazard and exposure, not just consideration of structure alone.

31. The Organisation for Economic Co-operation and Development ("OECD"), for example, published a report in 2021 that defined PFAS as essentially any chemical with at least one fully fluorinated carbon atom (e.g., all hydrogens on a carbon atom are replaced by fluorine),

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[15] *Synthesis Report*, *supra* note 13, at 16.

[16] Henry, *supra* note 11, at 330.

[17] U.S. Dep't of Defense, *Update on Critical Per- and Polyfluoroalkyl Substance Uses* 10 (Jul. 17, 2025) ("2025 DOD Report"), https://www.denix.osd.mil/cmrmp/denix-files/sites/14/2025/07/2025-DoD-Update-on-PFAS-Critical-Uses.pdf.

[18] *Id.*

with a few exceptions.[19] New Mexico has essentially followed this definition for its own PFAS legislation. But OECD stated that it provided this definition of PFAS "from the chemical structure point of view" and that ***the definition "does not conclude that all PFASs have the same properties, uses, exposure and risks***."

32. OECD acknowledged that PFAS, as defined, is a "***broad, general, non-specific term***, which does not inform whether a compound is harmful or not" and is "not connected to decisions on how PFASs should be grouped in regulatory and voluntary actions." OECD also recommended using chemical-specific criteria or specifications as a starting point—not an end point—for regulatory or guidance purposes rather than their broad and general PFAS definition.

33. Using only the approximately 13,000 chemistries that meet the EPA TSCA PFAS definition, which is more restrictive than the OECD PFAS definition, EPA scientists employed a category approach to group together different PFAS based on chemical structure, considering key structural characteristics and potential degradation products.[20] The scientists identified **more than 100 groups that could be used to approach hazard assessments** for PFAS. They acknowledged that "the landscape of PFAS substances is substantially large and diverse" and requires a strategic approach to hazard and risk assessment.

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[19] "PFASs are defined as fluorinated substances that contain at least one **fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it)**, i.e. with a few noted exceptions, any chemical with at least a perfluorinated methyl group ($–CF_3$) or a perfluorinated methylene group ($–CF_2–$) is a PFAS." Organisation for Economic Co-operation and Development, *Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance* 17 (July 9, 2021), https://one.oecd.org/document/ENV/CBC/MONO(2021)25/En/pdf.

[20] G. Patlewicz et al., *Development of Chemical Categories for Per- and Polyfluoralkyl Substances (PFAS) and the Proof-of-Concept Approach to the Identification of Potential Candidates for Tiered Toxicological Testing and Human Health Assessment*, 31 Computational Toxicology 5-7 (Sept. 2024).

34. There is significant diversity in PFAS toxicity within subsets of small molecule PFAS,[21,22] and fluoropolymers are not bioavailable or bioaccumulative (i.e., do not interact with the human body or other organisms) because they are too large to be able to pass through cellular membranes.[23] This demonstrates that not all chemicals that fall under broad PFAS definitions present the same hazards. PFAS are a broad class of chemistries with diverse physicochemical properties and can exhibit different mechanisms of persistence and bioaccumulation potential. A recent peer reviewed publication noted that "PFAS differ significantly in their behavior based on molecular size, structure, perfluorinated chain length, water solubility, vapor pressure, and functional group charges, all of which influence cell membrane penetration and environmental fate."[24]

35. Within the subgroups of small molecule PFAS, there are distinct differences in toxicology and hazards. Small molecule PFAS are often grouped together based on their similarities in size, fluorinated chain length, and composition of alkyl chains with either sulfonic or carboxylic ends; however, even these groupings have differences in toxicology despite the structural similarities.[25]

36. The EPA has published updated interim health advisory levels for PFOA and PFOS, and final health advisory levels for GenX chemicals, and perfluorobutanesulfonic acid

[21] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Perfluoroalkyls* 4 (May 2021), https://www.atsdr.cdc.gov/ToxProfiles/tp200.pdf.

[22] Sara Hearon et al., *A comprehensive review of the regulation of fluorinated pesticide ingredients by the U.S. Environmental Protection Agency*, 2 J. Toxicology and Regulatory Policy 1, 5 (2026).

[23] Henry, *supra* note 11, at 325.

[24] Lorenzo Secundo, Pierangelo Metrangolo, & Valentine Dichiarante, *Current Approaches in the Classification of PFAS: An Overview*, 20 Chemistry – An Asian Journal, May 2025, at 4.

[25] Hearon, *supra* note 22, at 5.

(PFBS), based on assessments of available animal toxicology and epidemiology studies. EPA based these health advisories on different key adverse effects identified for each PFAS.[26]

37. Elimination half-lives, indicators of bioaccumulation potential, vary significantly even within a subgroup of similarly structured small molecule PFAS. PFAS elimination half-lives in humans, based on declines in blood serum measures in the same individuals over time after elevated exposure, range from several days to one month for shorter chain PFAS (C4-C6) to several years for longer chain PFAS (C6-C9).[27]

38. **Polymeric PFAS have significantly different PFAS hazards; this is particularly true of fluoropolymers**. Numerous evaluations by regulatory authorities, toxicologists, and other experts, evaluating the usage of fluoropolymers like polytetrafluoroethylene ("PTFE") have concluded that fluoropolymers "do not meet the criteria to be mobile or toxic" and "are distinctly different from other polymeric and nonpolymeric PFAS and should be separated from them for hazard assessment or regulatory purposes."[28] Compared to PFAS that are often considered "small molecules," fluoropolymers are very large molecules that typically do not cross the cell membrane; "[t]he average molecular weight of PTFE is too large for the polymer to cross a cell membrane, which means it is not bioavailable or toxic."[29] Additionally, the available toxicology studies for PTFE demonstrate a lack of toxicity, specifically "the absence

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[26] *See, e.g.,* U.S. EPA, No. 815R24006, *Human Health Toxicity Assessment for Perfluorooctanoic Acid (PFOA) and Related Salts* (2024), https://www.epa.gov/system/files/documents/2024-05/final-human-health-toxicity-assessment-pfoa.pdf; U.S. EPA, No. 815R24007, *Human Health Toxicity Assessment for Perfluorooctane Sulfonic Acid (PFOS) and Related Salts* (2024), https://www.epa.gov/system/files/documents/2024-05/final-human-health-toxicity-assessment-pfos.pdf; U.S. EPA, *Human Health Toxicity Assessment for GenX Chemicals: Technical Fact Sheet* (2023), https://www.epa.gov/system/files/documents/2023-03/GenX-Tox-Assessment-technical-factsheet-March-2023-Update.pdf; U.S. EPA, *Technical Fact Sheet: Toxicity Assessment for PFBS* (2021), *accessible at* https://www.epa.gov/chemical-research/learn-about-human-health-toxicity-assessment-pfbs.

[27] The Interstate Technology & Regulatory Council, *Technical Guidance: Per-and Polyfluoroalkyl Substances (PFAS)* 670, Table 17-6 (2026), https://pfas-1.itrcweb.org/wp-content/uploads/2026/04/2026.01_PFAS-1.pdf.

[28] Henry, *supra* note 11, at 317, 329.

[29] *Id.* at 330.

of acute or subchronic systemic toxicity, irritation, sensitization, local toxicity on implantation, *in vitro* and *in vivo* genotoxicity, hemolysis, complement activation, or thrombogenicity."[30] In other words, PTFE toxicology studies demonstrate a lack of interaction with the human body or other organisms, meaning that it is biologically inert and not bioavailable.

39. FDA confirmed that fluoropolymers like PTFE have been safely used for decades in high contact medical devices. The U.S. Food and Drug Administration ("FDA") published an article in August 2025,[31] which described the history of how PTFE is used in medical devices, and reaffirmed FDA's position that there is no reason to restrict the use of PTFE in medical devices, including in materials and devices implanted in the body such as hernia mesh and pacemakers. The FDA emphasized that fluoropolymers used in medical devices, like PTFE, are different than small molecule surfactant PFAS like PFOA and PFOS. In the 2025 publication, FDA cited a previous PTFE safety assessment conducted in 2021,[32] which reviewed more than 1,750 scientific articles, along with patient safety information provided by an independent safety organization, which included information on patient adverse effects (e.g., inflammation, sensitization, irritation, scarring, cancer, immune responses, pain, cognitive function). Based on this information, the FDA concluded that there was no conclusive evidence of patient health issues associated with PTFE.

40. In 2018, an independent scientific expert panel convened to review PTFE and other fluoropolymers utilized in cosmetics.[33] The panel reviewed available toxicology data for PTFE, including acute, short term, and chronic toxicity studies involving oral, dermal, and inhalation

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[30] *Id.* at 332.

[31] FDA, *PFAS in Medical Devices* (Aug. 6, 2025), https://www.fda.gov/medical-devices/products-and-medical-procedures/pfas-medical-devices.

[32] FDA, *Medical Device Material Performance Study: PTFE Safety Profile* (2021), https://www.fda.gov/media/158495/download.

[33] Cosmetic Ingredient Review Expert Panel, *Safety Assessment of Polyfluorinated Polymers as Used in Cosmetics* (2018), https://www.cir-safety.org/sites/default/files/fluoro092018FR.pdf.

exposures, as well as carcinogenicity and other endpoints such as genotoxicity and irritation. Based on the results of these studies, along with information about use in cosmetics, the panel concluded that PTFE is safe in cosmetics in the present use practices and concentration described in the safety assessment. Their safety assessment was published by the Cosmetic Ingredient Review.

B. Differences in PFAS physical and chemical properties result in different applications and ultimately exposure

41. The specific PFAS structure determines where and how it is utilized in products and therefore the means of potential exposure.[34] Similar to the differences in toxicology, human health and environmental exposure profiles for different types of PFAS vary significantly and are driven by physical and chemical properties of these substances. For example, fluoropolymers are not bioavailable as they cannot cross cell membranes.[35] Fluoropolymers and other larger molecule PFAS also are not water soluble and tend to be immobile in the environment.[36]

42. How a certain PFAS is utilized also impacts exposure. For example, consumer electronics, semiconductors, and lithium-ion batteries may have internal components that contain smaller-molecule PFAS, but people may never be exposed to the PFAS because of the way the products are used—no one touches the inside of a lithium-ion battery to use it, for example.[37]

43. **FDA assessment of PFAS in food packaging and cookware illustrates differences in structure and application, and how those differences affect potential exposure.** FDA's approach to the use of PFAS in food packaging and cookware demonstrates that evaluating

[34] Juliane Glüge et al., *An overview of the uses of per- and polyfluoroalkyl substances (PFAS)*, 22 Env't Sci. Processes & Impacts 2345, 2350 (2020).

[35] Henry, *supra* note 11, at 325.

[36] *Id.* at 326-27.

[37] RECHARGE, *PFAS Restriction Proposal: RECHARGE statement for 2nd Call for Evidence – October 2021*, at B.1.4 (2021), https://rechargebatteries.org/wp-content/uploads/2022/09/Call-for-Evidence_RECHARGE-_-PFAS-restriction-V1.pdf.

hazard and risk for PFAS is a nuanced exercise. FDA has noted that, for non-stick appliances and cookware, which use PTFE in their nonstick coating, at most only negligible amounts of PTFE migrate to food, given how tightly PTFE is bound to the cookware.[38] FDA also noted that "the manufacturing process vaporizes off virtually all the smaller (i.e., migratable) PFAS molecules."[39]

44. Thus, FDA has confirmed that the specifics of not just PFAS chemistry, but also potential hazards and methods of exposure were critical in determining how to regulate PFAS. The FDA stated, "**the extent to which food contact substances, including those that contain PFAS, migrate to food depends on the authorized and intended use, molecular structure of the substance, how the final product is manufactured** [emphasis added]."

45. **Differences in the PFAS used and how they are applied in consumer electronics and semiconductors and lithium-ion batteries can result in differences in contact and exposure.** Americans use consumer electronics in their everyday lives—at home, at school, and at work. PFAS—including fluoropolymers, smaller molecule surfactants, and polymeric fluorinated chemistries, which collectively confer a multitude of chemical and physical properties, including durability, heat and chemical resistance, energy efficiency, and general product safety—provide the chemistries that enable electronic innovations on which we rely.[40] Many of these PFAS have been identified as particularly hard to replace.[41] The PFAS utilized in these types of products

[38] FDA, *Authorized Uses of PFAS in Food Contact Applications* (Jan. 3, 2025), https://www.fda.gov/food/process-contaminants-food/authorized-uses-pfas-food-contact-applications.

[39] *Id.*

[40] *See, e.g.*, ZVEI, *Factsheet "PFAS and Consumer Electronics"* (Sept. 18, 2023), https://www.zvei.org/fileadmin/user_upload/Themen/Nachhaltigkeit_Umwelt/PFAS/14-ZVEI_Factsheet_PFAS_in_Consumer_Electronics_final_EN.pdf; Michelle Adams, *Where Are PFAS in Your Electronics Supply Chain?*, Z2 Data (Apr. 21, 2026), https://www.z2data.com/insights/where-pfas-your-electronics-supply-chain; American Chemistry Council, *Fluoropolymers*, https://www.americanchemistry.com/chemistry-in-america-industry-innovation-impact/chemistries/fluoropolymers (last visited June 30, 2026).

[41] *See, e.g.*, Michelle Adams, *Where Are PFAS in Your Electronics Supply Chain?*, Z2 Data (Apr. 21, 2026), https://www.z2data.com/insights/where-pfas-your-electronics-supply-chain; Semiconductor PFAS Consortium,

are often found either inside the electronics, or bound to the materials used to make up a product. Or the PFAS in question may be a fluoropolymer that may not come into contact with, or be exposed to, a product's end user. All told, risk depends on how PFAS is used, how much of it is used, and how people or the environment might come into contact with PFAS—at the time of manufacture, sale, use, and disposal.

46. The same is true of lithium batteries. Like the inside of a consumer electronic product, or a semiconductor, lithium-ion batteries primarily use polymeric PFAS, but they also use other small molecule PFAS for variety of functions, most critically for safety and energy efficiency.[42] Lithium-ion batteries, when used correctly, are safe to use. They are identified under REACH as "an article with no intended release."[43] This means that, under normal and reasonably foreseeable conditions of use, no end-user of lithium-ion batteries would be exposed to any chemicals, PFAS or otherwise, and that no PFAS emissions are anticipated during the usage.

47. **PFAS structure has a significant impact on the fate and transport and the environmental behavior, resulting in differences in environmental exposures and exposures through food and drinking water**. As a recent publication observed, "PFAS differ significantly in their behavior based on molecular size, structure, perfluorinated chain length, water solubility, vapor pressure, functional group charges, all of which influence…environmental fate" (i.e.,

Background on Semiconductor Manufacturing and PFAS 9 (May 17, 2023), https://www.semiconductors.org/wp-content/uploads/2023/05/FINAL-PFAS-Consortium-Background-Paper.pdf.

[42] *See, e.g.*, RECHARGE, *supra* note 37, at B.1.1; U.S. Chamber of Com., *Essential Chemistries: Providing Benefits Across the U.S. Economy* 11 (Aug. 2024), https://www.uschamber.com/assets/documents/Essential-Chemistries_-Providing-Benefits-Across-the-U.S.-Economy.pdf.

[43] RECHARGE, *supra* note 37, at B.1.4.

exposure).[44] Fluoropolymers, for example, are practically insoluble in water and too heavy to travel in air; therefore, they are relatively immobile when compared to smaller molecule PFAS.[45]

48. Evich et al. (2022) reviewed the available studies on the fate and transport of small molecule PFAS and their precursors and determined that PFAS mobility in the environment commonly varies with chain length and functional group, and that the interaction of specific PFAS in the air, water, and soil is varied.[46] As an example, fluorotelomer alcohols ("FTOHs") are typically more volatile than most PFAS allowing for atmospheric transport, and FTOHs may undergo photochemical transformation.[47] This means that certain PFAS can travel through the air more easily than most other PFAS, and, even fewer of these PFAS can transform because of their exposure to light.

49. There are many factors that go into how PFAS might interact in the environment. Certain PFAS may degrade, for example, and may break down into smaller molecules (which may be other types of PFAS). Certain PFAS may degrade only under certain conditions. Some PFAS may not degrade at all under typical conditions, while others may degrade several times over. How a PFAS might degrade, and how it is transported throughout the environment, depends on environmental conditions, how well a PFAS sticks to soil or sediment or stays dissolved in water (sorption), and the structure of the specific chemical.[48]

50. Overall, the fate and transport of PFAS is complex and highly variable. Predicting the fate and transport is difficult because the degradation of some PFAS and their transport in the

[44] Secundo et al., *supra* note 24, at 4.

[45] Henry, *supra* note 11, at 325.

[46] Evich et al., *Per- and polyfluoroalkyl substances in the environment*, 375 Sci., at 4 (Feb. 4, 2022).

[47] *Id*.

[48] *Id*.

environment is highly dependent on the specific chemical structure and its interaction with the environment.

51. The existing scientific research does not support drawing broad conclusions about effects of human health and the environment based solely on a chemical's characterization as a "PFAS." Reaching conclusions about the impact of a particular PFAS will require a close examination of the structure of a particular chemical, how volatile the chemical is, how the manufacturing process may neutralize the presence of the chemical, how a chemical travels (and under what conditions the chemical might break down), and how human beings interact with the chemical (if they do so at all). No regulatory body—not the EPA, FDA, OECD, or any other federal or international entity—has reached sweeping conclusions about the health and environmental impact of PFAS relying solely on the PFAS label alone. Instead, these entities have engaged in a nuanced risk assessment for a particular PFAS or a subclass of PFAS, examining all of the factors relating to hazard and exposure that might inform that assessment.

52. For this reason, a panel of experts representing various stakeholder groups (academia, regulators, consultants), agreed that it is *"**inappropriate to assume equal toxicity/potency across the diverse class of PFAS*** [emphasis added]" and that PFAS should be grouped based on risk and regulatory paradigm for purposes of human health risk assessment, not based on an overly simplified approach which only considers structure.[49]

53. A risk assessment for an individual chemical also does not fully inform the impact that a PFAS may or may not have on human health and the environment; proactive mitigation is also another important consideration. Through existing and emerging technologies, manufacturing

[49] Janet K. Anderson et al., *Grouping of PFAS for human health risk assessment: Findings from an independent panel of experts*, Regul. Toxicology and Pharmacology, Oct. 2022, at 7.

facilities are able to reduce potential PFAS emissions and implement effective PFAS disposal and destruction technologies to reduce PFAS environmental exposures. The U.S. EPA issued two guidance documents: one that reviewed PFAS treatment technologies capable of removing or destroying PFAS in manufacturing or industrial waste streams,[50] and a second report that evaluated the destruction and disposal of PFAS substances and materials containing PFAS.[51] In both reports, the U.S. EPA acknowledges that continued research and innovation is needed, and implementation of these technologies must consider site-specific needs. However, these technologies are successfully being implemented at manufacturing and disposal facilities across the country, as presented in the two examples provided below.

54. Veolia Environnement SA, published a report in 2025 on two pilot studies conducted at its Port Arthur, Texas facility in July and October of 2024. These studies showed complete mineralization (destruction) of PFAS through the incineration process.[52] Specifically, the report observed "high destruction and removal efficiency for PFAS compounds during the incineration process, with values up to 99.9999%."[53] PFAS was not detected in the majority of liquid and solid residues and the majority of air samples. Veolia concluded that, "hazardous waste incineration, when properly operated under high-temperature conditions, can effectively break down PFAS compounds."[54]

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[50] U.S. EPA, *Multi-Industry Per-and Polyfluoroalkyl Substances (PFAS) Study – 2021 Preliminary Report* (Sept. 2021), https://www.epa.gov/system/files/documents/2021-09/multi-industry-pfas-study_preliminary-2021-report_508_2021.09.08.pdf.

[51] U.S. EPA, *Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoralkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoralkyl Substances – 2026 Version* (April 20, 2026), https://www.epa.gov/system/files/documents/2026-04/2026-interim-guidance-on-pfas-destruction-and-disposal.pdf.

[52] Veolia Environnement SA SA, *PFAS Destruction Testing at Veolia's Port Arthur Incinerator* 4 (June 2025), https://info.veolianorthamerica.com/hubfs/offers/reports/vna/pfas/pfas-destruction-testing-veolia-port-arthur-incinerator-study.pdf.

[53] *Id.*

[54] *Id.*

55. The EPA, together with the North Carolina Department of Environmental Quality, monitored Chemours' efforts to install pollution controls to reduce PFAS emissions at its facility in Fayetteville, North Carolina.[55] Chemours installed an incinerator, as well as carbon beds designed to remove PFAS that could be released from incinerators into the air. EPA stated that, "the total reduction of PFAS emissions from the plant using these controls are effective at meeting the permit's 99% reduction in [PFAS] emissions."[56]

C. PFAS and their applications provide a constellation of properties that provide critical benefits to society

56. PFAS provide a constellation of properties that is currently not available in alternate chemical and material classes; these properties include, but are not limited to, resistance to aggressive chemical environments, ability to maintain material characteristics at extreme temperatures (i.e., flame and fire resistance), low friction, ability to insulate electrical current, good weatherability and durability in outdoor applications, low refractive index, and biocompatibility. As alternatives to PFAS come onto the market, evaluations need to consider regrettable substitutions and overall effectiveness and safety of the alternatives.

57. In 2024, the U.S. Chamber of Commerce ("Chamber") published a report that evaluated the "economic and fiscal impact of specific sectors reliant on essential fluorochemistries across the U.S. economy."[57] While the Chamber report focuses on the impact on the U.S. economy, the report highlighted the dependence and essential function PFAS play across seven critical market sectors, including aerospace manufacturing, data centers, defense, energy transition and

[55] U.S. EPA, *EPA Research Partner Support Story: Air Emissions of PFAS at an Industrial Facility* (Apr. 7, 2026), https://www.epa.gov/research-states/epa-research-partner-support-story-air-emissions-pfas-industrial-facility.

[56] *Id.*

[57] U.S. Chamber of Com., *Essential Chemistries: Providing Benefits Across the U.S. Economy* 3 (Aug. 2024), https://www.uschamber.com/assets/documents/Essential-Chemistries_-Providing-Benefits-Across-the-U.S.-Economy.pdf.

emerging energy technologies, health care, transportation and semiconductor manufacturing. The Chamber also stated that "today's fluorochemistries, including many PFAS, possess a unique combination of properties to repel water, withstand heat, and many other critical properties that make them durable, efficient, versatile, reliable, and often irreplaceable across critical sectors." The Chamber also identified that many industries estimate that potential replacements could take decades.

58. The DOD, in its 2023 *Report on Critical Per- and Polyfluoroalkyl Substance Uses*[58] and 2025 *Update on Critical Per- and Polyfluoroalkyl Substance Uses*,[59] identified the essential function of PFAS across the U.S. Armed Forces and highlighted concerns about the continued availability of some PFAS and their applications. In its 2025 update, the DOD stated, "PFAS are critical to the national security of the United States, not because they are used exclusively in military applications (although some are), but also because of the civil-military commonality and the potentially broad impact to the civilian marketplace."[60] Many of the categories and products that DOD identified as difficult to replace, essential uses of PFAS are also products purchased by everyday consumers. Overall, the DOD "highlights the challenges and costs related to finding and qualifying equal or improved performing alternatives to existing PFAS materials in sectors of strategic importance to DoD."[61]

59. While in many places, PFAS have been phased out of **textiles and apparel**, a need for PFAS in textiles and apparel remains for more extreme weather and other environmental

[58] U.S. Dep't of Defense, *Report on Critical Per- and Polyfluoroalkyl Substance Uses* (Aug. 2023) ("2023 DOD Report"), https://www.denix.osd.mil/cmrmp/denix-files/sites/14/2025/03/2023-DoD-Report-on-PFAS-Critical-Uses.pdf.

[59] 2025 DOD Report, *supra* note 17.

[60] *Id.* at 10.

[61] 2023 DOD Report, *supra* note 58, at 1.

conditions not only for the military, but also for industrial workers, first responders, and other kinds of personnel.[62] The DOD stated "many of the military clothing and equipment performance requirements likely can only be met using PFAS. Currently, known non-PFAS water repellent finishes do not provide the same level of durability as their PFAS counterparts, or the required level of saltwater resistance necessitated for ballistic protection."[63]

60. Both the Chamber and DOD reports also highlight the importance of **semiconductors** because they are essential components of all electronic devices that are integral to modern society. An international group of semiconductor industry stakeholders that gathered to formulate an industry approach to PFAS stated that, "based on the consortium's findings and as documented in each of the accompanying white papers, until the industry can identify, test and qualify suitable substitutes, PFAS-containing materials are essential to semiconductor manufacturing operations and equipment."[64]

V. CONCLUSION

61. Many toxicologists, regulatory authorities, and experts confirm that PFAS exhibit a wide array of chemical and physical properties that result in a wide range of potential hazard and exposure profiles. Even the same PFAS can have vastly different hazard profiles depending on their application. Due to the necessity of PFAS for the function of our everyday lives, it is important to consider each PFAS and its use in the context of a risk assessment to prevent miscommunication of PFAS risk.

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[62] 2025 DOD Report, *supra* note 17, at 7.

[63] *Id.*

[64] Semiconductor PFAS Consortium, *Background on Semiconductor Manufacturing and PFAS* 34 (May 17, 2023), https://www.semiconductors.org/wp-content/uploads/2023/05/FINAL-PFAS-Consortium-Background-Paper.pdf.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 1, 2026, in Austin, Texas.

Signed by:
Sarahann Rackl
C236DDA157094F2...

Sarahann M. Rackl, Ph.D., P.E.

EXHIBIT A

Exponent®
Engineering & Scientific Consulting

Sarahann Rackl, Ph.D., P.E.
Principal Engineer | Environmental and Earth Sciences
Austin
+1-512-634-2965 | srackl@exponent.com

Professional Profile

Dr. Rackl is a scientist and environmental engineer with a broad interdisciplinary technical and academic background in engineering, microbiology, chemistry, and ecology.

Dr. Rackl excels at gathering and interpreting interdisciplinary technical data and communicating its relevance to regulators, boards of directors, investors, legal counsel, and policy makers. Her research and work experience have focused on evaluating technologies and practices related to water quality, water treatment, wastewater, and constituents in soils and sediment. Through numerous projects with the CalFed Water Quality Program, she developed an expertise in water supply and quality and treatment challenges in California. Dr. Rackl also specializes in federal and state regulatory matters, including the Clean Water Act and California's Proposition 65. She has applied her expertise to the development of new products and business case analyses, and she has extensive expertise in the research, development, manufacturing scale-up, and registration of biopesticides.

Dr. Rackl specializes in evaluating water quality from source to tap and optimizing water quality through advanced treatment technologies. Dr. Rackl has assisted numerous clients in her core academic research areas of disinfection optimization and the minimization of disinfection by-products. She has evaluated disinfection and microbial control strategies for opportunistic pathogens, including Mycobacterium avium complex and Legionella, in drinking water and for large facilities such as hotels and hospitals. Dr. Rackl has investigated drinking water distribution systems and storage facilities to understand potential sources and causes of microbial contamination.

Dr. Rackl's Proposition 65 and product stewardship work has focused on supporting clients in understanding and addressing current and anticipated future regulations for per- and polyfluoroalkyl substances (PFAS), 1,4-dioxane, and other chemicals. Dr. Rackl works with her clients to identify the presence of PFAS in their products and develop strategies to identify and eliminate the sources. Dr. Rackl has developed numerous Proposition 65 compliance and product stewardship programs for companies with extensive product lines, including both common consumer household and office products and specialty industrial products. Dr. Rackl supports companies in developing supply chain strategies and works with companies to develop tools to maintain sustainable product stewardship programs.

Using the knowledge and skills Dr. Rackl developed while working as product manager and group director of a biopesticide company, she has assisted other biopesticide and antimicrobial companies in product development strategies, regulatory package submissions, communications with the EPA and California Department of Pesticide Regulation (DPR), and numerous registration and regulatory compliance challenges.

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of Colorado, Boulder, 2004

M.S., Civil and Environmental Engineering, University of Colorado, Boulder, 2002

B.S., Biology, College of William and Mary, 1997

National Water Resources Institute, Fellowship 2002 and 2003

Licenses and Certifications

Professional Engineer Civil, California, #79732

Professional Engineer, North Carolina, #050886

Professional Engineer Civil, Texas, #138126

Prior Experience

Senior Regulatory Scientist, TSG Consulting, 2017-2018

Principal Consultant, Sarahann Rackl Consulting, 2015 - 2017

Director Water Technologies/Product Management, Marrone Bio Innovations (MBI), 2009 - 2014

Water Quality and Technology Specialist, Damon S. Williams Associates, LLC, 2008 - 2009

Principle Scientist, Brown and Caldwell Consultants and Engineers, 2004 - 2008

Professional Affiliations

American Water Works Association 2000-present

Patents

US #9,414,590 – Rackl SM, "Chemical and biological agents for the control of molluscs" August 16, 2016.

Publications

Book Chapters

Rackl, Sarahann and Link, Carolyn. (2015). Biology and Management of Invasive Quagga and Zebra Mussels in the Western United States: Zequanox®: Bio-Based Control of Invasive Dreissena Mussels. 515-535.

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Chen, Jennifer J.; Dow, Sarahann; Cruz, Charles J.; Fryer, Wilton. Pre-Ozonation Prior to Microfiltration Membranes - A Pilot Scale Evaluation. CONFERENCE PROCEEDING by American Water Works Association, 11/01/2007

Wilson, Daniel; Dow, Sarahann; Chen, Jennifer; Fryer, Wilton B. Evaluation of High-Rate Clarification Processes as a Pretreatment to Microfiltration of a Surface Water. CONFERENCE PROCEEDING by American Water Works Association, 11/01/2007

EXHIBIT B

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THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF KEITH WILCOX, PH.D.

JUNE 30, 2026

TABLE OF CONTENTS

I, Keith Wilcox, Ph.D., hereby declare and state as follows:

I. INTRODUCTION

A. Qualifications

1. I am Professor of Marketing and Ford Endowed Chair in Consumerism/E-Business/E-Commerce at the Mays Business School, Texas A&M University, where I teach several courses on consumer behavior. Prior to joining Mays, I was Associate Professor of Marketing and Barbara and Meyer Feldberg Associate Professor of Business at the Columbia Business School where I taught the core marketing course in the MBA program for over six years. Previously, I was also Assistant Professor of Marketing and Joseph R. Weintraub Term Chair at Babson College and have been employed as a lecturer in marketing at Baruch College, City University of New York. I hold a PhD in marketing and a BA in finance from the Zicklin School of Business, Baruch College. I also hold an MBA from the Haas School of Business at the University of California, Berkeley. Prior to becoming a professor, I spent several years as a marketing consultant working with dozens of companies, including those in the Fortune 500. Specifically, my experience in advertising includes work on accounts such as Camel Cigarettes, where I considered the prominence, placement, and likely consumer impact of warning labels on product packaging.

2. My research examines consumer behavior and decision-making, with a specific focus on consumer self-control and how consumers process information. I have conducted several research projects on consumer decision-making, including several projects examining the factors that influence the choices consumers make related to their health. Specifically, I have examined the factors that influence whether consumers act consistently with their health-related goals.[1] I also have focused on understanding consumer perception and self-

[1] Wilcox, K. et al., "Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision," *Journal of Consumer Research*, 2009, pp. 380-393; Wilcox, K., et al,, "Indulgence or Self-Control: A Dual Process Model of the Effect of Incidental Pride on Indulgent Choice," *Journal of Consumer Research,* 2011, pp. 151-163; Wilcox, K. and S. Prokopec, "Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions," *Journal of*

control behaviors.[2] My research has been supported by numerous competitive grants.[3] My research has been published in several leading academic journals, including *Journal of Consumer Research*, *Journal of Marketing Research*, *Journal of Marketing*, *Journal of Consumer Psychology*, and *Journal of Personality and Social Psychology*. I currently serve as an Associate Editor of *Journal of Marketing Research* and *Journal of Marketing* and *International Journal of Research in Marketing*, and I am a member of the Editorial Boards of *Journal of Consumer Research* and *Journal of Consumer Psychology*. My research has received the Citations of Excellence Award from Emerald Publishing, which recognizes highly cited papers in the areas of Business Management, Finance, Accounting, Economics and Marketing. In addition, my research has been featured in several national and international publications, including *The New York Times*, *Time Magazine*, *The Globe and Mail*, *Business + Strategy*, and *Psychology Today*.

Consumer Research, 2019, pp. 371-387; Wilcox, K. and A. Stephen, "Are Close Friends the Enemy? Online Social Networks, Self-Esteem, and Self-Control," *Journal of Consumer Research*, 2013, at pp. 90-103.

[2] *See, e.g.*, Wilcox, K., et al., "Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision," *Journal of Consumer Research*, 2009, pp. 380-393; Wilcox, K., et al., "Indulgence or Self-Control: A Dual Process Model of the Effect of Incidental Pride on Indulgent Choice," *Journal of Consumer Research*, 2011, pp.151-163; Wilcox, K. and S. Prokopec, "Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions," *Journal of Consumer Research*, 2019, pp. 371-387; Wilcox, K., et al., "Leave Home Without It? The Effects of Credit Card Debt and Available Credit on Spending," *Journal of Marketing Research*, 2011, pp. 78-91; Wilcox, K. and A. Stephen, "Are Close Friends the Enemy? Online Social Networks, Self-Esteem, and Self-Control," *Journal of Consumer Research*, 2013, pp. 90-103; Wilcox, K., et al., "Shall I Tell You Now or Later? Assimilation and Contrast in the Evaluation of Experiential Products," *Journal of Consumer Research*, 2011, pp. 763-773; Wilcox, K., et al., "How Traditional Production Shapes Perceptions of Product Quality." *Journal of Consumer Research,* 2024, pp. 256-275.

[3] *See, e.g.*, "Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor," Qualtrics Behavioral Research Grant, 2015-16, Qualtrics, Principal Investigators: Rachel Meng, Keith Wilcox, and Gita Johar, Award Amount: $5,000; "Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor," Research Grant, 2015-16, Marketing Science Institute, Principal Investigators: Rachel Meng, Keith Wilcox, and Gita Johar, Award Amount: $10,000; "Depletion-as-Information," Junior Faculty Provost's Grant, 2013-14, Columbia University, Principal Investigator: Keith Wilcox, Award Amount: $25,000; "Depletion-as-Information," Eugene M. Lang Support Fund Research Grant, 2013-14, Columbia University Graduate School of Business, Principal Investigator: Keith Wilcox, Award Amount: $10,000; "Quantity Aversion," CIBER Research Grant, 2012-13, Center for International Business Education and Research, Columbia University, Principal Investigators: Keith Wilcox and Amy Dalton, Award Amount: $10,000; "The Role of Emotions In-Store," Duke-Ipsos Research Grant, 2012-13, Duke-Ipsos Research Center, Principal Investigators: Keith Wilcox and Amy Dalton, Award Amount: $10,000; "Pride: A License to Indulge and a Cue for Greater Self-Control," Graduate Center Research Grant, 2007-08, The City University of New York, Graduate Center, Principal Investigator: Keith Wilcox, Award Amount: $2,000.

3. My curriculum vitae is attached as **Appendix A** to this report and contains more detail on the above, including my expert testimony for the past four years.

B. Case Background

4. The New Mexico Environmental Improvement Board recently finalized regulations regarding per- and poly-fluoroalkyl substances ("PFAS") in consumer products with effective dates as early as July 1, 2026.[4] PFAS are complex groups of synthetic chemicals that have been used in consumer products since the 1950s.[5] I understand that, given the chemical makeup of PFAS, they have a persistent quality, and are therefore often referred to by the public as so-called "forever chemicals."[6] The rules introduced by the New Mexico Environmental Department ("NMED") and approved by the New Mexico Environmental Improvement Board ("NMEIB") outline prohibitions on products containing PFAS, required reporting, labeling, and testing of consumer products, and fees and penalties for failure to comply.[7]

5. I understand that beginning January 1, 2027, manufacturers must label any product containing intentionally-added PFAS with "an outline of an Erlenmeyer flask with the word 'PFAS' inside the flask."[8] The regulation appears to require that the label must in all instances be affixed to the product itself, not just the product packaging, and "also" to the packaging in some instances.[9] The label must be clearly visible and legible prior to sale and the text must be no smaller than the largest font used for other consumer information

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4 Prohibitions on Products Containing Per- or Poly-Fluoroalkyl Substances; Currently Unavoidable Use; Reporting; Labeling; Testing; Fees and Penalties, New Mexico Environmental Improvement Board, 20.13.2.1-6 NMAC (2026).

5 "Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)," *National Institute of Environmental Health Sciences*, March 6, 2026, available at https://www.niehs.nih.gov/health/topics/agents/pfc.

6 "Yale Experts Explain PFAS 'Forever Chemicals'," *Yale Sustainability*, May 20, 2025, available at https://sustainability.yale.edu/explainers/yale-experts-explain-pfas-forever-chemicals.

7 20.13.2.1-23 NMAC.

8 20.13.2.13(C)(1) NMAC.

9 20.13.2.13(C)(2)–(3), (5) NMAC. I understand that the regulation also requires manufacturers of complex durable goods containing intentionally-added PFAS to include the PFAS label in other consumer-facing materials, including (1) the product specification sheet that potential customers are able to review prior to purchase, and (2) the operation and maintenance manual for the complex durable good. 20.13.2.13(D) NMAC.

on the product.[10] The labeling requirement also extends to websites where the product is sold.[11] **Figure 1** below shows an example of the labeling to be included on products and product packaging.

Figure 1
Example of PFAS Label[12]

6. Certain product categories are eligible for exemptions from the labeling requirements including used products offered for sale or resale, medical devices or drugs and their packaging, veterinary products, and products for which labeling requirements are preempted pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act or for which labeling requirements currently exist.[13]

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[10] 20.13.2.13(C)(1) NMAC.

[11] 20.13.2.13(C)(4) NMAC.

[12] I understand that the New Mexico Environment Department has provided the following flask as an example of a conforming image:

See "PFAS Protection Act (HB212)," *New Mexico Environment Department*, available at https://www.env.nm.gov/pfas/pfas-protection-act-hb212/, accessed on June 22, 2026.

[13] 20.13.2.13(B) NMAC.

7. In addition to the labeling requirement, the rules also include the prohibition of sales of products containing intentionally added PFAS. Beginning January 1, 2027, the following products cannot be sold if they contain intentionally added PFAS: cookware, food packaging, dental floss, juvenile products, and firefighting foam.[14] Beginning January 1, 2028, the following products cannot be sold if they contain intentionally added PFAS: carpets or rugs, cleaning products, cosmetics, fabric treatments, feminine hygiene products, textiles, textile furnishings, ski wax, and upholstered furniture.[15] Beginning January 1, 2032, no products containing PFAS can be sold unless the PFAS in the product is a currently unavoidable use or the product is otherwise exempt.[16] Beginning January 1, 2028, products containing PFAS may not be sold unless the manufacturer has provided the New Mexico Environmental Department the relevant information on PFAS.[17]

C. Assignment

8. I have been retained by counsel for the American Chemistry Council to evaluate how the PFAS label required by the 20.13.2.13 New Mexico Administrative Code ("NMAC") is likely to be perceived by ordinary consumers and whether the PFAS label may affect ordinary consumers' perceptions of labeled products at the point of sale. Specifically, my assignment focuses on consumers' likely interpretation of the required PFAS label, including whether the label may be perceived as conveying a warning, risk, chemical-content, or product-safety message.

9. In forming my opinions, I have relied on my education and professional experience, as well as documents and materials produced in this matter or obtained from public sources. The documents and materials that I relied upon to form my opinions are identified in **Appendix B**.

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[14] 20.13.2.9(A) NMAC.

[15] 20.13.2.9(B) NMAC.

[16] 20.13.2.9(C) NMAC.

[17] 20.13.2.9(D), (E) NMAC.

10. I am being compensated at my standard hourly rate of $1,050 per hour. In addition, employees of Analysis Group, Inc., an economics research and consulting firm, working under my direction and guidance, have assisted me in this assignment. Neither my compensation nor that of Analysis Group is contingent upon my findings, the testimony I may give, or the outcome of this litigation. I reserve the right to supplement and/or amend my opinions as appropriate based on any additional information provided to me and/or in light of documents or testimony brought forth after the date of my signature below.

II. SUMMARY OF OPINIONS

11. On the basis of my review of the information identified in **Appendix B**, and my education, training, and professional experience, I have reached the following opinions:

a. Product labels and visual disclosures may affect perceptions and choices throughout multiple stages of the consumer buying decision process, before, during, and after purchase. Product labels and visual symbols can shape consumer perceptions and decision-making by serving as heuristic cues, evoking emotive responses, and creating persistent product or brand associations that may extend beyond the literal information conveyed. *See* **Section III.**

b. Rather than serving as a neutral disclosure, the PFAS label may instead function as a warning-like cue, evoke negative emotive responses, and lead consumers to form persistent negative inferences about labeled products. As a result, consumers may interpret the label and accompanying imagery as conveying potential health, safety, environmental, or chemical risk, regardless of the actual risk involved, which may in turn affect product evaluations and purchase decisions. *See* **Section IV.**

c. The PFAS label is likely to influence consumers throughout the buying decision process by shaping how consumers interpret, evaluate, and respond to labeled products. However, the extent to which the PFAS label may impact consumers'

purchase decisions is likely to depend on product category, consumer familiarity, purchase context, and the availability and cost of alternatives. *See* **Section V.**

III. ACADEMIC FRAMEWORK: HOW CONSUMERS MAKE PURCHASING DECISIONS AND PROCESS PRODUCT LABELS AND VISUAL DISCLOSURES

A. The Consumer Buying Decision Process

12. In order to assess the potential impact of the required PFAS label on product evaluation and purchase intent, it is useful to consider the consumer buying decision process, a standard marketing framework that describes how consumers recognize needs, search for information, evaluate alternatives, make purchase decisions, and behave after purchase.[18] Although consumers do not always pass through all five stages—they may skip or reverse the order of some stages—the framework provides a useful structure for evaluating how product labels and visual disclosures may affect consumers' perceptions and choices before, during, and after purchase.[19]

13. The first stage in the buying process is problem recognition, when an internal or external stimulus causes the buyer to recognize a problem or need.[20] The second stage is information search in which consumers seek information about brands and products from various information sources: personal (family and friends), commercial (advertising, websites, emails, etc.), public (mass media, social media), and experiential (handling, examining, and using the product).[21] Next, consumers evaluate alternatives and make tradeoffs between different brands and products.[22]

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[18] Kotler, P. and K.L. Keller, *Marketing Management*, 15th Edition., Pearson, 2016 ("Kotler and Keller (2016)"), at pp. 172-180.

[19] Kotler and Keller (2016), at p. 173.

[20] Kotler and Keller (2016), at p. 173.

[21] Kotler and Keller (2016), at p. 174.

[22] Kotler and Keller (2016), at pp. 175-176.

14. In the fourth stage, consumers make their purchase decision.[23] Consumers may form preferences or an intention to buy a certain brand or product in the evaluation of alternatives stage, but there are sub-decisions and intervening factors such as attitudes of others or unanticipated situational factors that can influence the ultimate purchase decision.[24] As Professors Kotler and Keller note in *Marketing Management*, "a consumer's decision to modify, postpone, or avoid a purchase decision is heavily influenced by one or more types of perceived risk:" functional risk, physical risk, financial risk, social risk, psychological risk, and time risk.[25] Thus, for example, a consumer's purchase intention may not result in an actual purchase if the consumer perceives that the product poses a threat to their health or well-being (or the health or well-being of others).[26]

15. Finally, the fifth stage in the consumer buying decision process is post purchase behavior including post purchase satisfaction, actions, and use and disposal of the product.[27]

B. Product Labels and Visual Symbols Shape Consumer Perception and Decision-Making

16. Product labels and visual symbols play a key role in shaping consumer choices and decision-making throughout the consumer buying decision process. Through text, visual imagery, and brand associations, labels serve as a salient touchpoint between brands and consumers and can play an important role in the formation of consumer perceptions (or misperceptions) of a product. Consumer decision-making often occurs under conditions

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[23] Kotler and Keller (2016), at pp. 176-178.

[24] Kotler and Keller (2016), at pp. 176-178.

[25] Kotler and Keller (2016), at p. 178. Functional risk refers to the risk that the product does not perform to expectations; physical risk refers to the risk that the product poses a threat to the physical well-being or health of the user or others; financial risk refers to the risk that the product is not worth the price paid; social risk refers to the risk that the product results in embarrassment in front of others; psychological risk refers to the risk that the product affects the mental well-being of the user; and time risk refers to the risk that the failure of the product results in an opportunity cost of finding another satisfactory product.

[26] Kotler and Keller (2016), at p. 178.

[27] Kotler and Keller (2016), at pp. 178-179.

of limited information, time pressure, and cognitive constraints.[28] In that context, product labels can serve as heuristics or informational cues that consumers use as mental shortcuts to draw broader inferences about a product's attributes, quality, benefits, or risks.

1. Labels Often Serve as Heuristics and Systematic Cues

17. Consumer decision-making often involves fast, intuitive, and low-effort judgments rather than exhaustive evaluation of all available information.[29] Dual-process theories of judgment distinguish between such intuitive, automatic processes, often referred to as "System 1," and more deliberative, effortful processes, often referred to as "System 2."[30] In many contexts, consumers rely on System 1 processes and use heuristics or salient cues to form judgments about products.[31]

18. Heuristics allow consumers to make purchase decisions without exhaustive analysis, especially in contexts where decisions can be habitual or time pressured.[32] The concept of "bounded rationality" provides foundational framework for understanding heuristic cues.[33] Bounded rationality suggests consumers cannot analyze all available information in making decisions due to cognitive limits and information asymmetry, and therefore

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[28] Tversky, A. and D. Kahneman, "Judgment Under Uncertainty: Heuristics and Biases," *Science,* 1974, pp. 1124–1131, ("Tversky and Kahneman (1974)"); *See also* Kahneman, D., *Thinking, Fast and Slow*, Farrar, Straus and Giroux, 2011 ("Kahneman (2011)").

[29] Kahneman, D., "Maps of Bounded Rationality: Psychology for Behavioral Economics." *American Economic Review*, 2003, pp. 1449-1475, at p. 1450 ("Kahneman (2003)"). *See also* Kahneman (2011), at pp. 22-26; Motoki, K. and T. Saito, "Thinking Fast, Not Slow: Intuitive Nutrition Labels Increase Healthier Food Preferences Under Time Pressure," *British Food Journal*, 2024, pp. 2956-2969.

[30] Kahneman (2003), at p. 1451 ("The operations of System 1 are fast, automatic, effortless, associative, and often emotionally charged; they are also governed by habit, and are therefore difficult to control or modify. The operations of System 2 are slower, serial, effortful, and deliberately controlled; they are also relatively flexible and potentially rule-governed.") *See also* Kahneman (2011), at p. 23.

[31] Kahneman (2003), at p. 1450 ("[M]ost judgments and most choices are made intuitively."). *See also* Kahneman (2011), at pp. 22-26; Tversky and Kahneman (1974), at p. 1124.

[32] Tversky and Kahneman (1974), at p. 1124. *See also* Kahneman (2011), at pp. 22-26; Kahneman (2003), at pp. 1450-1451; Motoki, K. and T. Saito, "Thinking Fast, Not Slow: Intuitive Nutrition Labels Increase Healthier Food Preferences Under Time Pressure," *British Food Journal*, 2024, pp. 2956-2969.

[33] Simon, H., "Rational Choice and the Structure of the Environment," *Psychological Review*, 1956, pp. 129-138. *See also* Kahneman (2003), at pp. 1450-1451.

would seek "satisficing" (*i.e.*, the first solution that is satisfactory) over maximizing (or optimal) solutions.[34] Heuristics allow consumers to find such solutions by enabling quick judgments through mental shortcuts.[35] For example, the affect heuristic is a mental shortcut where invoked emotions influence perceptions and decision-making.[36]

19. Product labels often serve as heuristic cues for consumers to make broader inferences about the product. For example, the presence of "low-carbohydrate" claims on product packaging may lead consumers to believe the product is more helpful in weight management compared to similar unlabeled products, even if in reality that need not be the case.[37] This phenomenon is known as the "halo effect," whereby the presence of a specific product claim (*e.g.*, organic or natural) may lead consumers to infer broader, unstated product attributes (*e.g.*, the product is healthier).[38] Similarly, warnings and regulatory disclosures may be interpreted by consumers as risk cues because such markings are typically applied to "promote either safe use or the moderation/cessation of

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[34] Simon, H., "Rational Choice and the Structure of the Environment," *Psychological Review*, 1956, pp. 129-138, at pp. 129-130.

[35] Tversky and Kahneman (1974), at p. 1124; Slovic, P. et al., "The affect heuristic," *European Journal of Operational Research*, 2007, pp. 1333-1352 ("Slovic et al. (2007)"). *See also* Kahneman (2011); Kotler and Keller (2016), at pp. 176-177, 180-182. Kahneman and Tversky originally defined three main heuristics: (i) representativeness, used in judgement of the probability that an object or event A belongs to class or process B; (ii) availability of instances or scenarios, which is often employed when people are asked to assess the frequency of a class or the plausibility of a particular development; and (iii) adjustment from an anchor, which is often used in numerical prediction when a relevant value is available. Slovic et al. (2007) later developed a framework for affect heuristic, which occurs when emotions influence decision-making.

[36] Slovic et al. (2007), at p. 1350.

[37] Labiner-Wolfe, J. et al., "Effect of Low-Carbohydrate Claims on Consumer Perceptions About Food Products' Healthfulness and Helpfulness for Weight Management," *Journal of Nutrition Education and Behavior*, 2010, pp. 315-320.

[38] "The Future of US Food Labeling," NSF, September 25, 2025, available at https://www.nsf.org/knowledge-library/white-paper-us-food-labeling.

use."[39] In turn, such inferences may affect consumers' perceptions of the product's desirability and consequently increase (or decrease) consumers' willingness-to-pay.[40]

20. Although labels can simplify consumer decision-making by providing salient product cues, they can also generate confusion and uncertainty when they contain ambiguous, misleading, inadequate, or excessive information.[41] Consumers facing unfamiliar, ambiguous, or confusing claims can experience cognitive uncertainty or difficulty, especially when trying to compare between alternatives.[42] Because consumers often prefer options with known and quantifiable risks over otherwise similar options involving unknown risks (also known as "ambiguity aversion"), labels including technical, unfamiliar, or unclear terms may increase uncertainty and lead consumers to prefer more familiar options over the labeled product.[43] The presence of such information may also reduce decision confidence, which can further increase the likelihood that consumers postpone or forgo purchases.[44]

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[39] Drury, L. et al., "YOU HAVE BEEN WARNED: The Effect of California's Proposition 65 Warning on Consumer Perceptions and Evaluations," *Journal of Consumer Affairs*, 2025, at pp. 2-3; Salvendy, G., *Handbook of Human Factors and Ergonomics,* 4th Edition, John Wiley & Sons, 2012, p. 868; Adasme-Berríos, C., et al., "Effect of Warning Labels on Consumer Motivation and Intention to Avoid Consuming Processed Foods," *Nutrients*, 2022, pp. 1-16.

[40] Lim, K. and E. Page, "Consumers' Interpretation of Food Labels with Production Claims Can Influence Purchases," *USDA Economic Research Service*, March 7, 2022, available at https://www.ers.usda.gov/amber-waves/2022/march/consumers-interpretation-of-food-labels-with-production-claims-can-influence-purchases; McCluskey, J. and M. Loureiro, "Consumer Preferences and Willingness to Pay for Food Labeling: A Discussion of Empirical Studies," *Journal of Food Distribution Research*, 2003, pp. 95-102; Drury, L. et al., "YOU HAVE BEEN WARNED: The Effect of California's Proposition 65 Warning on Consumer Perceptions and Evaluations," *Journal of Consumer Affairs*, 2025, pp. 1-21, at pp. 1-3.

[41] *See* Tversky and Kahneman (1974), at p. 1124. Mitchell, V. and V. Papavassiliou, "Marketing causes and implications of consumer confusion," *Journal of Product & Brand Management*, 1999, pp. 319-339 ("Mitchell and Papavassiliou (1999)"); Kahneman (2003), at p. 1460.

[42] Walsh, G., et al., "Consumer Confusion Proneness: Scale Development, Validation, and Application," *Journal of Marketing Management*, 2010, pp. 697-721.

[43] Ellsberg, D., "Risk, Ambiguity, and the Savage Axioms," The Quarterly Journal of Economics, 1961, pp. 643-669; Mitchell and Papavassiliou (1999). *See also* Muthukrishnan, A., et al., "Ambiguity Aversion and the Preference for Established Brands," Management Science, 2009, pp. 1933-1941.

[44] Walsh, G., et al., "Consumer Confusion Proneness: Scale Development, Validation, and Application," *Journal of Marketing Management*, 2010, pp. 697-721; Mitchell and Papavassiliou (1999).

21. Importantly, labels can affect consumer perceptions not only through text but also visual cues such as font sizes and symbols.[45] For example, warning labels often couple pictorial warnings with fear appeals—such as graphic images on cigarette packages—to increase effectiveness in building risk perception for consumers.[46] The visual cues may serve as shortcuts that allow consumers to infer unobservable attributes such as quality, sustainability, or healthfulness.[47] Research has shown that even the color scheme of a package or label can alter perception of the product and ultimately impact purchase intention.[48]

2. Labels Can Evoke Emotive Responses

22. Labels can often trigger emotive responses that influence consumers' perceptions of a brand or product. For instance, labels that communicate a product's "artificial," "synthetic," or "chemical" characteristics may evoke negative associations and contribute to what is sometimes described as the appeal-to-nature fallacy: the tendency to perceive natural substances as inherently safer or superior, and human-made, synthetic, or "unnatural" substances as inherently riskier or less desirable, regardless of actual risk.[49] Research also suggests that consumers often associate "chemicals" with poison, death, and danger while "natural" labels are associated with safety and more positive affective

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[45] Griffith, L.J. and S.D. Leonard, "Association of Colors with Warning Signal Words," *International Journal of Industrial Ergonomics*, 1997, pp. 317-325; Eng, L. et al., "Influence of Interpretation Aids on Attentional Capture, Visual Processing, and Understanding of Front-of-Package Nutrition Labels," *Journal of Nutrition Education and Behavior*, 2015, pp. 292-299.

[46] Purmehdi, M. et al., "The Effectiveness of Warning Labels for Consumers: A Meta-Analytic Investigation into Their Underlying Process and Contingencies," *Journal of Public Policy & Marketing*, 2017, pp. 36-53, at pp. 38-39 ("Purmehdi et al. (2017)").

[47] Kahneman (2003); Underwood, R. and N. Klein, "Packaging as Brand Communication: Effects of Product Pictures on Consumer Responses to the Package and Brand," *Journal of Marketing Theory and Practice*, 2002, pp. 58-68.

[48] Huang, L. and J. Lu, "The Impact of Package Color and the Nutrition Content Labels on the Perception of Food Healthiness and Purchase Intention," *Journal of Food Products Marketing*, 2016, pp. 191-218; Schuldt, J.P., "Does Green Mean Healthy? Nutrition Label Color Affects Perceptions of Healthfulness," *Health Communication*, 2013, pp. 814-821.

[49] Baig, S.A. et al., "Organic," "Natural," and "Additive-Free" Cigarettes: Comparing the Effects of Advertising Claims and Disclaimers on Perceptions of Harm, *Nicotine & Tobacco Research*, 2019, pp. 933–939; Gagliardi, L., "Naturalness seeking minds: the cognitive foundations of naturalness bias in consumer food choice," *Food and Humanity,* 2025.

responses.[50] Consumers may use perceived naturalness (or "unnaturalness") as a salient heuristic cue, leading them to draw broader inferences about a product's quality and safety that may extend beyond the specific attribute communicated on the label.[51] This association is closely related to the halo effect discussed above, in which a judgment about one product attribute is overgeneralized to other characteristics (*e.g.*, healthfulness, safety), even when those characteristics are not necessarily correlated.[52]

23. An illustrative example of consumers' immediate and emotional responses to certain product labels is their reaction to labels identifying genetically modified organisms ("GMO") or genetically modified food ("GMF"). Research suggests that GMOs can evoke negative emotions such as worry, anxiety, anger, or fear and that some consumers perceive GMOs as less healthy and less safe than non-genetically modified products.[53] These perceptions of GMOs can negatively impact consumer purchase intentions, with willingness to purchase GMO or GMF products decreasing as perceived risk associations increase.[54] At the same time, public-health reviews have concluded that GMOs or GMFs currently on the market have passed safety assessments and are not more harmful or unsafe than non-genetically modified products.[55]

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[50] Moreira da Silva, A., and M. Barroca. "Addressing Chemophobia: Bridging Misconceptions in Food Chemistry." *Applied Sciences*, 2025 ("Moreira da Silva and Barroca (2025)"), at pp. 2, 7.

[51] Baig, S.A, et al., "Organic," "Natural," and "Additive-Free" Cigarettes: Comparing the Effects of Advertising Claims and Disclaimers on Perceptions of Harm, *Nicotine & Tobacco Research*, 2019, pp. 933–939; Gagliardi, L., "Naturalness Seeking Minds: the Cognitive Foundations of Naturalness Bias in Consumer Food Choice," *Food and Humanity,* 2025.

[52] Nisbett, R., and T. Wilson, "The Halo Effect: Evidence for Unconscious Alteration of Judgments," *Journal of Personality and Social Psychology*, 1977, pp. 250-256; Gagliardi, L., "Naturalness Seeking Minds: The Cognitive Foundations of Naturalness Bias in Consumer Food Choice," *Food and Humanity,* 2025, pp. 1-12.

[53] *See* Laros, F. and J. Steenkamp, "Importance of Fear in the Case of Genetically Modified Food," *Psychology & Marketing*, 2004, pp. 889-908; Yang, S., et al., "No Control, No Consumption: Association of Low Perceived Control and Intention to Accept Genetically Modified Food," International Journal of Environmental Research and Public Health, 2022, pp. 1-13.

[54] *See* Laros, F., and J. Steenkamp, "Importance of Fear in the Case of Genetically Modified Food." *Psychology & Marketing,* 2004, pp. 889-908; Yang, S., et al., "No Control, No Consumption: Association of Low Perceived Control and Intention to Accept Genetically Modified Food," International Journal of Environmental Research and Public Health, 2022.

[55] *See, e.g.,* "Food, Genetically Modified," *World Health Organization*, available at https://www.who.int/news-room/questions-and-answers/item/food-genetically-modified, accessed on June 22, 2026; "GMOs and Your Health," *Food and Drug Administration*, available at https://www.fda.gov/media/135280/download.

3. Labels Can Create Persistent Consumer Associations

24. To the extent labels trigger emotive responses, such reactions may impact long-term product and/or brand associations that consumers hold. For example, research on classical and evaluative conditioning suggests that the repeated pairing of a product or brand with a negative stimulus can alter consumers' responses to the product and, over time, contribute to more negative brand perceptions.[56] The literature also suggests that the effect of a negative stimulus is typically stronger than that of a positive stimulus.[57] Accordingly, the repeated pairing of a product and a warning-like label may create negative associations that can shape product and brand evaluations independently of evidence on the product's actual attributes or risk.[58]

25. Importantly, consumer inferences about a product can persist even when additional corrective or explanatory information is later provided from manufacturers, regulators, or retailers. As marketing scholars have noted, consumers typically rely or "anchor" on the first piece of salient information they encounter, using it to make their initial judgment and as a reference point for subsequent judgments.[59] Because individuals often insufficiently adjust away from their initial judgement, being presented with new or conflicting information often has a limited effect on revising opinions.[60] Therefore, if a label highlights a potentially concerning attribute, consumers may anchor on that information and use it as a basis for evaluating the product, even if they later receive

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[56] *See* De Houwer, J. et al., "Association Learning of Likes and Dislikes: A Review of 25 Years of Research on Human Evaluative Conditioning." *Psychological Bulletin,* 2001, pp. 853-869; Levey, A. and I. Martin. "Classical conditioning of human 'evaluative' responses." *Behaviour Research and Therapy*, 1975, pp. 221-226; Pavlov, I., "Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex." *Annals of Neurosciences*, 2010, pp. 136-141.

[57] Levey, A. and I. Martin. "Classical conditioning of human 'evaluative' responses." *Behaviour Research and Therapy,* 1975, pp. 221-226.

[58] *See* De Houwer, J. et al., "Association Learning of Likes and Dislikes: A Review of 25 Years of Research on Human Evaluative Conditioning." *Psychological Bulletin,* 2001, pp. 853-869; Levey, A. and I. Martin. "Classical conditioning of human 'evaluative' responses." *Behaviour Research and Therapy*, 1975, pp. 221-226; Pavlov, I., "Conditioned reflexes: An investigation of the physiological activity of the cerebral cortex." *Annals of Neurosciences*, 2010, pp. 136-141.

[59] Kotler and Keller (2016), at p. 182.

[60] Kotler and Keller (2016), at p. 182.

additional context indicating that the actual risk is low.[61] In turn, this can contribute to persistent negative associations as subsequent experiences are influenced by the initial impression, particularly if the initial impression forms a strong negative attitude.[62]

26. In sum, the literature demonstrates that product labels can shape perceptions and inferences that extend beyond the actual information conveyed, as consumers frequently rely on heuristics and other simplified decision-making processes when evaluating products and making their purchase decisions. Due in part to anchoring, initial impressions can be difficult to adjust or revise, even when additional information is provided later. As a result, labels—and warning-like labels in particular—can trigger emotional responses that may establish long-lasting positive or negative associations with the brand or product, influencing consumer evaluations and behavior independently of the product's underlying attributes or objective risks.

IV. APPLYING THE ACADEMIC FRAMEWORK TO THE NEW MEXICO PFAS LABEL

27. As described in **Section III.B**, labels can influence consumers' product evaluations beyond the exact words used or information directly conveyed. To the extent that consumers perceive a label as a warning-like cue that signals a potential hazard or undesirable product attribute, consumers may (1) form negative associations with the product or brand, (2) associate the warnings and regulatory disclosures with potential risk, which may impact their likelihood of purchase or willingness to pay for the product, and (3) form long-lasting and persistent associations, even if corrective information is provided at a later point in time. Applying the academic framework described in **Section III.B**, it is my opinion that the label, which consists of an Erlenmeyer flask with the word "PFAS," can serve as a heuristic or cue that consumers use to draw broader inferences about the labeled products beyond the literal information conveyed by the label. In

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[61] Moreira da Silva and Barroca (2025), at p. 7.

[62] *See* Mussweiler, T., "The Durability of Anchoring Effects," *European Journal of Social Psychology,* 2001, pp. 431-442; Pomerantz, E., et al., "Attitude Strength and Resistance Processes," *Journal of Personality and Social Psychology*, 1995, pp. 408-419.

particular, consumers may interpret the label as conveying potential health, safety, environmental, or chemical risks – regardless of the actual risk involved – which may in turn affect product evaluations and ultimately impact consumer purchase decisions.

A. The PFAS Label Can Serve as a Heuristic or Cue for Consumers

28. As discussed in **Section III.B**, consumers often cannot analyze all available information in making decisions due to cognitive limits and information asymmetry, and therefore use heuristics to make quick judgements through mental shortcuts.

29. Research suggests that public awareness and understanding of PFAS remain limited, with many consumers lacking familiarity with PFAS and with the potential sources, exposure pathways, and health risks associated with PFAS.[63] Given these gaps in knowledge, the PFAS label that includes Erlenmeyer-flask imagery is likely to be interpreted through consumers' existing associations with that imagery. Because flasks are often perceived as "emblematic icons of chemistry," consumers may associate the PFAS label with chemicals, poisons, hazards, and environmental pollution.[64] For example, research on "chemophobia" indicates that consumers often associate "chemical" or "synthetic chemical" language with concepts such as poison, death, danger, pollution, contamination, and harm.[65] This is particularly likely here as consumers cannot independently evaluate the product-specific significance of PFAS and therefore may be likely to rely on accessible labels and packaging cues to assess technical product

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[63] In one nationally representative survey conducted in April 2023 in the U.S., 45.1% of respondents had never heard of PFAS and did not know what it was, and another 31.6% had heard of PFAS but did not know what it was. Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, 1-20, at pp. 1, 3, 6, 12-13; Rihn, A., et al., "Influence of scientific communications on the acceptance of PFAS alternatives on disposable dinnerware and take-out containers, by information source," *Journal of Agriculture and Food Research*, 2026, 1-10, at pp. 2, 8.

[64] Moreira da Silva and Barroca (2025), at pp. 8-10; Schummer, J. et al., The Public Image of Chemistry, *World Scientific Publishing*, 2007 ("Schummer et al., (2007)"), at p. 1 ("Popular associations with chemistry range from poisons, hazards, chemical warfare and environmental pollution to alchemical pseudo-science, sorcery and mad scientists").

[65] Moreira da Silva and Barroca (2025), at pp. 8-10.

attributes that are difficult to observe or verify.[66] Accordingly, the associations evoked by the flask imagery may increase perceived product risk rather than operate merely as a neutral disclosure. Put differently, the PFAS label may be perceived as a warning-like cue for the product to which it is affixed, rather than as a neutral disclosure.

30. Consumers are likely to encounter the PFAS label in a variety of contexts. It is my understanding that the PFAS label will be required to appear in a variety of consumer-facing purchase contexts, including but not limited to on the product itself, on the product packaging, and on the website where the product is sold.[67] For instance, water-resistant jackets that contain intentionally added PFAS will be required to present PFAS labels on the jacket's hang tag and on the product details page of the brand's website or any retailer websites or apps that sell the jacket.[68] Waterproof mascaras that contain intentionally added PFAS will be required to present PFAS labels on the mascara tube itself, on the packaging that comes with the mascara, and on the product details page of any retailer websites or apps that sell the mascara.[69] As the literature suggests, the degree to which

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66 Buchmüller, K., et al., "The influence of packaging on consumers' risk perception of chemical household products," *Applied Ergonomics*, 2022, 100:103676, at pp. 1-2; Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, 1-20, at pp. 12-13.

67 20.13.2.13(C)(2)–(5) NMAC.

68 Waterproof jackets may contain PFAS for the added waterproof ability, usually done through treating the fabric through Durable Water Repellent coatings. "Made Without PFAS," Patagonia, available at https://www.patagonia.com/our-footprint/pfas.html, accessed on June 22, 2026 ("[T]he DWR (durable water repellent) finishes used in apparel to help moisture bead up and roll off the outer surface have relied on perfluoroalkyl and polyfluoroalkyl substances, part of a chemical family known as PFAS."); "New Study Finds Forever Chemicals in Rain Jackets," Chem Trust, May 22, 2025, available at https://chemtrust.org/news/forever-chemicals-rain-jackets/ ("PFAS is often added to jackets due to its water repellent properties."). Fabric treatments and textiles will be prohibited to be sold if they contain intentionally added PFAS after January 1, 2028. 20.13.2.9(B) NMAC.

69 According to research experiments, waterproof mascaras may contain PFAS chemicals. "PFAS in Cosmetics," Green Science Policy Institute, available at https://greensciencepolicy.org/pfas-in-cosmetics/, accessed on June 22, 2026 ("[W]e tested 231 popular makeup products purchased in the U.S. and Canada. We found high fluorine levels—indicating the probable presence of PFAS—in just over half of these products. High levels were especially prevalent in waterproof mascara, liquid lipsticks, and foundations."). Cosmetic products will be prohibited to be sold if they contain intentionally added PFAS after January 1, 2028. 20.13.2.9(B) NMAC.

the inclusion of the PFAS label impacts perceptions and purchase decisions may vary depending on the specific type of product and purchase location.[70]

B. The PFAS Label May Evoke Emotive Responses Among Consumers

31. As discussed in **Section III.B**, labels can often trigger emotive responses that may establish long-lasting positive or negative perceptions of a brand or product. As discussed above, the flask imagery on the PFAS label may trigger chemical, laboratory, and risk-related associations.[71] Research suggests that chemical imageries have long been eliciting negative associations from the public and may lead consumers to treat the label as conveying health- or environmental-risk information.[72] Specifically, research on chemophobia suggests that consumers tend to perceive products containing chemicals as "inherently inferior or dangerous," independent of any scientific basis for distinguishing the actual safety or efficacy of the chemicals involved.[73] Further, research on hazard communication suggests that pictorial elements can operate as immediate cues of risk and can affect how consumers perceive product danger.[74]

32. Because PFAS is often discussed in connection with persistence, contamination, and human or environmental health concerns, the combined text-and-symbol label may trigger concern, uncertainty, or avoidance among consumers who may be familiar with the term but cannot independently evaluate the product-specific significance of the

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70 *See* Argo, J. and K. Main, "Meta-Analyses of the Effectiveness of Warning Labels," *Journal of Public Policy & Marketing*, 2004, pp. 193-208, at pp. 195-196, 204-205; Purmehdi et al. (2017), at pp. 38-39, 45-46.

71 *See* Schummer et al., (2007), at p. 1.

72 Schummer et al., (2007), at pp. 240-241; NMAC § 20.13.2.13(C)(1); Hutchins, R., et al., "Efficacy and Threat Language in PFAS Messaging," at p. 2; Moreira da Silva and Barroca (2025), at pp. 8-10.

73 Moreira da Silva and Barroca (2025), at p. 7.

74 Boelhouwer, E., et al., "Comprehension of hazard communication: Effects of pictograms on safety data sheets and labels," *Journal of Safety Research*, 2013, 145-155, at pp. 146-147; Wogalter, M., et al., "Research-Based Guidelines for Warning Design and Evaluation," *Applied Ergonomics*, 2002, 219-230, at p. 223.

disclosure.[75] As scholars have pointed out, "most consumers are risk averse and prefer products with low (vs. high) perceived risk."[76]

33. In sum, the PFAS label with Erlenmeyer-flask imagery may evoke negative emotive responses among consumers.

C. The PFAS Label May Lead Consumers to Form Persistent Negative Inferences About the Products to Which It Is Affixed

34. Consumers who experience negative emotive responses to the PFAS label and flask imagery may apply these negative associations to the products generally. As discussed above, the presence of a specific product claim may lead consumers to infer broader, unstated product attributes.

35. If fear and perceived dangers become top of mind for consumers after viewing the PFAS label, consumers may assume that the presence of PFAS in a given product presents risk regardless of the actual properties of the product. This conclusion may persist regardless of whether consumers are familiar with PFAS. For those who have not previously heard of PFAS, the PFAS label may trigger uncertainty and ultimately fear, as discussed in **Section IV.A**. For consumers who have heard of PFAS being discussed in connection with human or environmental risks, the PFAS label may trigger concern and fear, as discussed in **Section IV.B**.[77] Additionally, as I understand it, the umbrella term "PFAS" covers more than 14,000 chemicals with different structures and varying levels of supposed harm or impacts on health.[78] Consumers may not know that there are different

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[75] Rihn, A., et al., "Influence of scientific communications on the acceptance of PFAS alternatives on disposable dinnerware and take-out containers, by information source," *Journal of Agriculture and Food Research*, 2026, 1-10, at pp. 1-2, 7-9; Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, 1-20, at pp. 1, 12-15.

[76] Drury, L., et al., "YOU HAVE BEEN WARNED: The Effect of California's Proposition 65 Warning on Consumer Perceptions and Evaluations," *Journal of Consumer Affairs,* 2025*,* 1-21, at p. 3.

[77] *See* Rihn, A., et al., "Influence of scientific communications on the acceptance of PFAS alternatives on disposable dinnerware and take-out containers, by information source," *Journal of Agriculture and Food Research*, 2026, 1-10, at pp. 1-2, 7-9; Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, 1-20, at pp. 1, 12-15.

[78] *See* Rebuttal Testimony of Dr. Stephen Korzeniowski on Behalf of the American Chemistry Council ("ACC"), In the Matter of Proposed Adoption of 20.13.2 NMAC, No. EIB 25-61 (R), February 16, 2026, at p. 3; "Naming

types of PFAS and are unlikely to distinguish among them, much less understand the specific risk associated with each type and accurately apply that risk to the product they are considering purchasing. Given this uncertainty, consumers may be inclined to assume the worst based on the cues presented on the product label, even if the actual risk is low.

36. These interpretive associations are important because risk perception is based not only on technical understanding of the disclosed substance.[79] The "affect-heuristic" literature shows that negative affect associated with a product or activity can increase perceived risk and reduce perceived benefit, even where consumers do not undertake a detailed analytic assessment.[80] As discussed above, consumers often treat the mere presence of a "chemical" as itself risk-relevant, rather than evaluating risk based on exposure, dose, or product-specific context.[81] Indeed, while PFAS communicators must balance known threats with uncertainty about exposure amount and duration, everyday consumers may focus on the mere presence of a chemical when weighing potential risk.[82]

37. That mechanism is likely to be especially relevant here because, as noted above, many consumers have limited baseline knowledge of PFAS and may not be able to assess the product-specific significance of the included PFAS.[83] Rather, consumers may rely on the PFAS label to make broader inferences about product safety, naturalness, quality, and

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Conventions for Per- and Polyfluoroalkyl Substances (PFAS)," *Interstate Technology Regulatory Council*, September 2023, available at https://pfas-1.itrcweb.org/wp-content/uploads/2023/10/NamingConventions_PFAS_Fact-Sheet_Sept2023_final.pdf; "Our Current Understanding of the Human Health and Environmental Risks of PFAS," *Environmental Protection Agency,* available at https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas., accessed on June 22, 2026.

79 Peters, E., "Affect and Emotion," *Communicating Risks and Benefits: An Evidence-Based User's Guide*, U.S. Food and Drug Administration, 2011, pp. 89-97, at pp. 89-91; Slovic, P., et al., 2007, pp. 1333-1352, at pp. 1333, 1341-1343.

80 Slovic et al. (2007), at pp. 1341-1343; Peters, E., "Affect and Emotion," in Fischhoff, B., Noel T. Brewer, and Julie S. Downs, eds., *Communicating Risks and Benefits: An Evidence-Based User's Guide*, U.S. Food and Drug Administration, 2011, pp. 89-97, at pp. 90-91.

81 Moreira da Silva and Barroca (2025), at pp. 8-10.

82 Hutchins, R., et al., "Efficacy and Threat Language in PFAS Messaging," *Risk Analysis*, 2026, 1-12, at p. 2.

83 Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, pp. 1-20, at pp. 1, 6, 12-13.

value, particularly because PFAS content is not an attribute consumers can directly verify at the point of purchase. An everyday consumer generally cannot determine, by inspecting a jacket, pan, mascara, textile, or other consumer product, whether it contains PFAS, which type of PFAS it contains, why PFAS was used, at what level it is present in the product, or whether the product poses any meaningful exposure risk in daily use.

38. In that setting, a prominent display of the PFAS label may function as an anchor consumers rely on as a proxy for the otherwise unobservable product attribute. As discussed in **Section III.B**, research has established that consumers routinely rely on such anchors when evaluating products at initial encounters and use these anchors to make subsequent judgements. Any negative associations consumers may establish after reviewing the PFAS label with the flask imagery may shape subsequent purchase decisions and inferences about the product itself even if consumers later receive additional context indicating that the actual risk of engaging with PFAS in that product is low. In other words, as discussed in **Section III.B.3**, such negative associations may be persistent. The PFAS label may lead consumers to infer that the product is less safe, more chemically treated, or lower quality than a comparable unlabeled product. As such, the PFAS label may function as a persistent risk signal about the overall product rather than a neutral technical cue.[84]

V. THE PFAS LABEL'S POTENTIAL EFFECTS ON THE CONSUMER BUYING DECISION PROCESS

39. **Section III.A** describes the consumer buying decision process, which involves problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behavior. As discussed above, product labels and visual symbols can shape consumer perception and decision-making by drawing attention to particular product attributes and by serving as cues that consumers may use when evaluating products. As I

[84] Berthold, T., et al., "Let's talk about PFAS: Inconsistent public awareness about PFAS and its sources in the United States," *PLOS ONE*, 2023, pp. 1-20, at pp. 12-13; Hutchins, R., et al., "Efficacy and Threat Language in PFAS Messaging," at p. 2; Peters, E., "Affect and Emotion," in Fischhoff, B., Noel T. Brewer, and Julie S. Downs, eds., *Communicating Risks and Benefits: An Evidence-Based User's Guide*, U.S. Food and Drug Administration, 2011, pp. 89-97, at pp. 90-91.

explain below, the PFAS label may influence how consumers interpret, evaluate, and respond to labeled products both before and after purchase.[85]

A. The Impact of the PFAS Label During Information Search

40. I understand that New Mexico regulations require that the PFAS label must be visible and legible before sale and must appear in consumer-facing purchase contexts, including the product itself and the websites where covered products are sold.[86] Research suggests that features such as placement, size, color or contrast, format, and pictorial symbols can increase the likelihood that a warning or disclosure will be noticed.[87] Specifically, as noted in **Section III.B.1**, research has shown that pictorial elements can increase attention and may convey hazard-related meaning depending on the symbol and context.[88] These findings suggest that the PFAS label, which combines an Erlenmeyer-flask symbol with text that is no smaller than the largest font used for other consumer information on the product, is more likely to be noticed, especially at the beginning of the consumer buying decision process (*e.g.*, the information search stage).[89]

41. The website requirement extends this attention mechanism to online purchasing.[90] In e-commerce settings warnings are more likely to be seen, found quickly, and used in consumer decision-making when they are immediately visible, offset from other text,

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[85] 20.13.2.13(C)(1) NMAC; Moreira da Silva and Barroca (2025), at p. 8; Rihn, A., et al., "Influence of Scientific Communications on the Acceptance of PFAS Alternatives on Disposable Dinnerware and Take-Out Containers, by Information Source," *Journal of Agriculture and Food Research*, 2026, pp. 1-10, at pp. 7-9.

[86] 20.13.2.13(B), (C)(1), (C)(4) NMAC.

[87] Laughery, K. and M. Wogalter, "A Three-Stage Model Summarizes Product Warning and Environmental Sign Research," *Safety Science*, 2014, 3-10, at pp. 5-6; Wogalter, M., et al., "Research-Based Guidelines for Warning Design and Evaluation," *Applied Ergonomics*, 2002, pp. 219-230, at pp. 221-223.

[88] 20.13.2.13(C)(1) NMAC; Wogalter, M., et al., "Research-Based Guidelines for Warning Design and Evaluation," *Applied Ergonomics*, 2002, pp. 219-230, at p. 223; Boelhouwer, E., et al., "Comprehension of Hazard Communication: Effects of Pictograms on Safety Data Sheets and Labels," *Journal of Safety Research*, 2013, pp. 145-155, at pp. 146, 154.

[89] 20.13.2.13(C)(1) NMAC. Wogalter, M., et al., "Research-Based Guidelines for Warning Design and Evaluation," *Applied Ergonomics*, 2002, pp. 219-230, at p. 223; Boelhouwer, E., et al., "Comprehension of Hazard Communication: Effects of Pictograms on Safety Data Sheets and Labels," *Journal of Safety Research*, 2013, pp. 145-155, at pp. 146, 154.

[90] 20.13.2.13(C) NMAC.

prominent, and paired with a warning or safety symbol.[91] By requiring the PFAS label on websites where covered products are sold, the rule may further bring attention to the label during consumer's online search and product-comparison process before purchase.[92]

B. The Impact of the PFAS Label During Evaluation of Alternatives

42. As noted above in **Section III.B**, research has shown that certain label cues can affect product evaluation beyond the literal information disclosed and that a single attribute can be used by consumers to make more general inferences about a product.[93] Applied here, and as discussed in **Section IV.A**, the PFAS label may cause consumers to associate the Erlenmeyer-flask with chemical, laboratory, or risk-related concepts, and to generalize from those associations in forming broader negative judgments about the product, particularly relative to products without similar disclosures.[94] The literature indicates that negative affective associations with a product can increase perceived risk and reduce

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91 "Evidence-Based Recommendations for the Placement and Design of Warning Labels on E-commerce Sites," *Consumer Product Safety Commission and Fors Marsh Group*, available at https://www.cpsc.gov/s3fs-public/The-Placement-and-Design-of-Warning-Labels-on-E-commerce-Sites.pdf?VersionId=rOMC7e2xYWXh7SBLSGazsy9s.jYt0zNu, at pp. 1-2.

92 20.13.2.13(C) NMAC; "Evidence-Based Recommendations for the Placement and Design of Warning Labels on E-commerce Sites," *Consumer Product Safety Commission and Fors Marsh Group*, available at https://www.cpsc.gov/s3fs-public/The-Placement-and-Design-of-Warning-Labels-on-E-commerce-Sites.pdf?VersionId=rOMC7e2xYWXh7SBLSGazsy9s.jYt0zNu, at pp. 1-2. I also understand that warning-label literature generally treats label effectiveness as a staged process, beginning with attention, comprehension, and recall and extending to judgments and behavior. The evidence suggests that warning labels often have more direct and predictable effects on earlier information-processing outcomes than on later behavioral outcomes, although this pattern depends on the type of warning and the behavioral outcome at issue. *See* Purmehdi et al. (2017), at pp. 38-39; Argo, J. and K. Main, "Meta-Analyses of the Effectiveness of Warning Labels," *Journal of Public Policy & Marketing*, 2004, pp. 193-208, at pp. 193-194, 204-205.

93 For example, in the food-labeling context, consumers exposed to front-of-package low-carbohydrate claims inferred broader benefits about weight management, healthfulness, and calorie content, even though those attributes were not necessarily determined by carbohydrate content alone. Additionally, consumers can use a single attribute, such as perceived naturalness, to infer broader attributes such as safety, healthfulness, quality, or value. Labiner-Wolfe, J., et al., "Effect of Low-carbohydrate Claims on Consumer Perceptions About Food Products' Healthfulness and Helpfulness for Weight Management," *Journal of Nutrition Education and Behavior*, 2010, pp. 315-320, at pp. 315, 317-319. Gagliardi, L., "Naturalness Seeking minds: The Cognitive Foundations of Naturalness Bias in Consumer Food Choice," *Food and Humanity*, 2025, pp. 1-12, at pp. 3-4; Meier, B., et al., "Naturally Better? A Review of the Natural-is-Better Bias," *Social and Personality Psychology Compass*, 2019, pp. 1-21, at pp. 4-9.

94 Moreira da Silva and Barroca (2025), at pp. 8-10; Gagliardi, L., "Naturalness Seeking Minds: The Cognitive Foundations of Naturalness Bias in Consumer Food Choice," *Food and Humanity*, 2025, pp. 1-12, at pp. 1-4.

perceived benefit, making the product less attractive relative to otherwise comparable alternatives.[95]

43. As such, during evaluation of alternatives—a stage in the buying process where consumers compare products and make attribute tradeoffs before forming a purchase decision[96]—the PFAS label may become one of the product attributes consumers use to evaluate the labeled product relative to unlabeled or PFAS-free alternatives.[97] As noted in **Section IV.A**, because consumers cannot independently evaluate the product-specific significance of PFAS, they may rely on accessible label and packaging cues to assess such technical product attributes.[98]

C. The Impact of the PFAS Label During the Purchase Decision

44. Product label perceptions may also affect the purchase-decision stage of the consumer buying decision process. As discussed in **Section III.A**, consumers may form preferences during the evaluation-of-alternatives stage, but perceived risk can ultimately cause consumers to modify, postpone, or avoid a purchase decision.[99] As discussed in **Sections III.B.3** and **IV.B**, the PFAS label with Erlenmeyer-flask imagery may increase perceived product risk and evoke negative affective responses among consumers. Although the research discussed above suggests that such perceptions can negatively impact purchase intentions, as in the GMO/GMF context (*See* **Section III.B.2**), later-stage behavior depends on additional factors.[100] Accordingly, the effect of the PFAS label on actual

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95 Slovic et al. (2007), at pp. 1341-1344; Peters, E., "Affect and Emotion," in Fischhoff, B., Noel T. Brewer, and Julie S. Downs, eds., *Communicating Risks and Benefits: An Evidence-Based User's Guide*, U.S. Food and Drug Administration, 2011, pp. 89-99, at pp. 90-91.

96 Kotler and Keller (2016), at pp. 172-179.

97 Buchmüller, K., et al., "The Influence of Packaging on Consumers' Risk Perception of Chemical Household Products," *Applied Ergonomics*, 2022, pp. 1-7, at pp. 1-2; Rihn, A., et al., "Influence of Scientific Communications on the Acceptance of PFAS Alternatives on Disposable Dinnerware and Take-out Containers, by Information Source," *Journal of Agriculture and Food Research*, 2026, pp. 1-10, at pp. 7-9.

98 Buchmüller, K., et al., "The Influence of Packaging on Consumers' Risk Perception of Chemical Household Products," *Applied Ergonomics*, 2022, at pp. 1-2; Berthold, T., et al., "Let's Talk About PFAS: Inconsistent Public Awareness About PFAS and its Sources in the United States," *PLOS ONE*, 2023, pp. 1-20, at pp. 12-13.

99 Kotler and Keller (2016), at p. 178.

100 *See* **Section III.B.2**; Kotler and Keller (2016), at pp. 177-178.

purchases is likely to vary by product category, consumer familiarity, available substitutes, price, and the perceived cost of avoiding the labeled product.[101]

45. The PFAS label may also impact willingness to pay because consumers' willingness to pay is affected by perceived product attributes, including perceived safety, naturalness, environmental value, and risk.[102] As discussed in **Section III.B**, research on naturalness bias shows that consumers often treat naturalness as a positive cue and are willing to pay more for products perceived as natural or free from synthetic substances.[103] Conversely, a label that signals chemical presence or that otherwise projects health or environmental risks may result in reduced consumer willingness-to-pay.[104] Further, any reduction in purchase likelihood or willingness to pay is likely to be more pronounced where consumers perceive a comparable unlabeled or PFAS-free alternative as available and practical to choose.[105]

D. The Impact of the PFAS Label During Post-Purchase Evaluation

46. The effect of the PFAS label may also persist beyond the initial point of exposure because early affective associations and anchoring can continue to guide later judgments about risk and benefit. As discussed in **Section IV**, if consumers associate a labeled product with chemical hazard, contamination, or health or environmental risk, that association

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[101] Argo, J. and K. Main, "Meta-Analyses of the Effectiveness of Warning Labels," *Journal of Public Policy & Marketing*, Fall 2004, pp. 193-208, at pp. 195-196, 204-205; Purmehdi et al. (2017), at pp. 38-39, 45-46.

[102] Migliore, G., et al., "Consumers' Willingness to Pay for Natural Food: Evidence From an Artefactual Field Experiment," *Agricultural and Food Economics*, 2018, pp. 1-10, at pp. 1-2, 6; Slovic et al. (2007), at pp. 1341-1344.

[103] Meier, B., et al., "Naturally Better? A Review of the Natural-is-Better Bias," *Social and Personality Psychology Compass*, 2019, pp. 1-21, at pp. 3-9; Migliore, G., et al., "Consumers' Willingness to Pay for Natural Food: Evidence From an Artefactual Field Experiment," *Agricultural and Food Economics*, 2018, pp. 1-10, at pp. 1-2, 6.

[104] Moreira da Silva and Barroca (2025), at pp. 8-10; Rihn, A., et al., "Influence of Scientific Communications on the Acceptance of PFAS Alternatives on Disposable Dinnerware and Take-out Containers, by Information Source," *Journal of Agriculture and Food Research*, 2026, pp. 1-10, at pp. 7-9.

[105] Argo, J. and K. Main, "Meta-Analyses of the Effectiveness of Warning Labels," *Journal of Public Policy & Marketing*, Fall 2004, pp. 193-208, at pp. 195-196, 204-205; Purmehdi et al. (2017), at pp. 38-39, 45-46; Rihn, A., et al., "Influence of Scientific Communications on the Acceptance of PFAS Alternatives on Disposable Dinnerware and Take-out Containers, by Information Source," *Journal of Agriculture and Food Research*, 2026, pp. 1-10, at pp. 7-9.

may continue to influence product perception even after consumers encounter additional explanatory or "corrective" information.[106] Additional information can reduce misinterpretation when it is accessible, diagnostic, and used by consumers, but it may not fully offset the initial risk-signaling effect of a visible chemical-related label at the point of sale.[107]

47. Even after a consumer decides to purchase a product, the initial impression of the PFAS label may influence consumer satisfaction, actions, and evaluations of the product post-purchase.[108] This may be particularly true due to the repeated pairing of the PFAS label with the product.[109] The negative associations from the PFAS label are therefore likely to be sustained and may influence a consumer's likelihood of repurchase, their use and disposal of the product, or whether they communicate positive, neutral, or negative information about the product to others.[110]

48. The PFAS label may therefore influence consumers throughout the consumer buying decision process by not only disclosing the presence of PFAS, but also by making that attribute salient before purchase and giving consumers a chemical- and laboratory-based cue to use when evaluating the product that may persist long after the initial impression. For consumers who do not understand PFAS or cannot evaluate the product-specific significance of PFAS presence, the label may increase uncertainty and perceived risk, which in turn may reduce perceived safety, quality, value, desirability, purchase interest, or willingness to pay. The extent of those effects will depend on product

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106 *See* Slovic et al. (2007), at pp. 1341-1346; Moreira da Silva and Barroca (2025), at pp. 8-10; Meier, B., et al., "Naturally Better? A Review of the Natural-is-Better Bias," *Social and Personality Psychology Compass*, 2019, pp. 1-21, at pp. 5-6.

107 *See* Labiner-Wolfe, J., et al., "Effect of Low-carbohydrate Claims on Consumer Perceptions About Food Products' Healthfulness and Helpfulness for Weight Management," *Journal of Nutrition Education and Behavior*, 2010, pp. 315-320, at pp. 318-319.

108 Kotler and Keller (2016), at pp. 178-179.

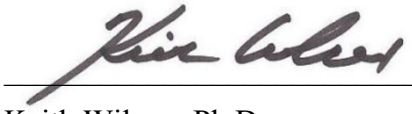
109 As stated above, the NMAC rules require the PFAS label to be affixed to the product itself and it must be visible and legible, with text "no smaller than the largest font used for other consumer information on the product." Therefore, it is likely that a consumer will be aware of the label each time they use or interact with the product. 20.13.2.13(C)(1) NMAC.

110 Kotler and Keller (2016), at pp. 178-179.

category, consumer familiarity, purchase context, and the availability and cost of alternatives, but later explanatory information may not fully eliminate the initial label-based inference once the product has been associated with chemical hazard or risk.

I declare under penalty of perjury that the foregoing is true and correct.

Signed on the 30th day of June, 2026.



Keith Wilcox, Ph.D.

APPENDIX A

CURRICULUM VITAE AND RECENT TESTIMONY

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Education

2004-2009	**The City University of New York, Baruch College (Graduate Center)** *Ph.D., Marketing, 2009*
1999-2001	**The University of California, Berkeley, Haas School of Business** *Master of Business Administration, 2001*
1993-1997	**The City University of New York, Baruch College** *Bachelor of Business Administration, Finance, 1997*

Professional Appointments

2025-Present	Ford Endowed Chair in Consumerism/E-Business/E-Commerce Mays Business School, Texas A&M University
2021-2025	Macys Foundation Professor Mays Business School, Texas A&M University
2015-2021	Barbara and Meyer Feldberg Associate Professor of Business Columbia University, Columbia Business School
2014-2015	Associate Professor of Marketing Columbia University, Columbia Business School
2012-2014	Assistant Professor of Marketing Columbia University, Columbia Business School
2009-2012	Assistant Professor of Marketing Babson College, Olin School of Business
2005-2009	Lecturer The City University of New York, Baruch College

Honors & Awards

2024	Research Excellence Award Mays Business School
2024	Outstanding Member of the Editorial Review Board International Journal of Research in Marketing
2022	Best Talk Award Society of Consumer Psychology Conference, JDM Track

2020	MSI Scholar Marketing Science Institute
2015	Outstanding Reviewer Award Journal of Consumer Research
2013	Citations of Excellence Award Emerald Group Publishing
2013	Young Marketing Scholar Marketing Science Institute
2009-2012	Joseph R. Weintraub Term Chair Babson College, Olin School of Business
2011	Best Conference Paper La Londe Conference
2009	Best Conference Paper Marketing and Public Policy Conference
2009	Babson Faculty Research Fund Award Babson College, Olin School of Business
2007	AMA-Sheth Foundation Doctoral Consortium Fellow The City University of New York, Baruch College
2006	Valuing Diversity Dissertation Scholarship American Marketing Association
2004-2006	Llewellyn Fellowship The City University of New York
1999-2001	Consortium for Graduate Study in Management Fellow The University of California, Berkeley, Haas School of Business

Publications

- Thompson, Debora, Amna Kirmani, Rebecca Hamilton, Andy Li, Christilene du Plessis, Daniel Fernandes, Guillaume Johnson, Brent McFerran, Jian Ni, Vladimir Pavlov, Francine Petersen, Lisa Scheer, Yan Vieites and Keith Wilcox (2025), "Cycles of Inequality in the Marketplace: Insights from Macro, Marketer and Consumer Perspectives," *International Journal of Research in Marketing*, https://doi.org/10.1016/j.ijresmar.2025.09.004.

- Hoyer, Wayne D., Echo Wen Wan and Keith Wilcox* (2024), "Practical Relevance in Consumer Research," *Journal of Consumer Research*, 51 (2), 428–438.

- Wilcox, Keith, Sandra Laporte and Gabriel Ward (2024), "How Traditional Production Shapes Perceptions of Product Quality." *Journal of Consumer Research,* 51 (2), 256-275.

- Köcher, Sören and Keith Wilcox (2021), "I Made It Work: How Using a Self-Assembled Product Increases Task Performance," *Journal of Consumer Psychology,* 32 (3), 492-499.

- Wilcox, Keith and Sonja Prokopec (2019), "Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions." *Journal of Consumer Research*, 46 (2), 371-387.

- Wilcox, Keith, Juliano Laran, Andrew Stephen and Peter Zubcsek (2016), "How Being Busy Can Increase Motivation and Reduce Task Completion Time," *Journal of Personality and Social Psychology*, 110 (3), 371-384.

- Puccinelli, Nancy, Keith Wilcox and Dhruv Grewal (2015), "Consumers' Response to Commercials: When the Energy Level in the Commercial Conflicts with the Media Context," *Journal of Marketing*, 79 (2), 1-18.

- Wilcox, Keith and Andrew Stephen (2013), "Are Close Friends the Enemy? Online Social Networks, Self-Esteem, and Self-Control," *Journal of Consumer Research*, 40 (1), 90-103.

- Wilcox, Keith, Anne Roggeveen and Dhruv Grewal (2011), "Shall I Tell You Now or Later? Assimilation and Contrast in the Evaluation of Experiential Products," *Journal of Consumer Research*, 38 (4), 763-773.

- Wilcox, Keith, Lauren Block and Eric Eisenstein (2011), "Leave Home Without It? The Effects of Credit Card Debt and Available Credit on Spending," *Journal of Marketing Research*, 48 (SPL), S78-S91.

- Laran, Juliano and Keith Wilcox* (2011), "Choice, Rejection, and Elaboration on Preference-Inconsistent Alternatives," *Journal of Consumer Research*, 38 (2), 229-241.

- Wilcox, Keith and Sangyoung Song (2011), "Discrepant Fluency in Self Customization," *Journal of Marketing Research*, 48 (4), 729-740.

- Wilcox, Keith, Thomas Kramer and Sankar Sen (2011), "Indulgence or Self-Control: A Dual Process Model of the Effect of Incidental Pride on Indulgent Choice," *Journal of Consumer Research*, 38 (1), 151-163.

- Wilcox, Keith, Beth Vallen, Lauren Block and Gavan Fitzsimons (2009), "Vicarious Goal Fulfillment: When the Mere Presence of a Healthy Option Leads to an Ironically Indulgent Decision," *Journal of Consumer Research*, 36 (3), 380-393.

- Wilcox, Keith, Hyeong Min Kim and Sankar Sen (2009), "Why Do Consumers Buy Counterfeit Luxury Brands?" *Journal of Marketing Research*, 46 (1), 247-259.

*Co-first author

Book Chapters

- Wilcox, Keith and Judith Lynne Zaichkowsky (2019), "The Evolution of Counterfeit Luxury Consumption." *Research Handbook on Luxury Branding*, Eds. Felicitas Morhart, Keith Wilcox and Sandor Czellar, Edward Elgar Publishing, 268-303.

- Wilcox, Keith (2019), "How Signaling Motives and Identity Salience Influence Luxury Consumption." *Handbook of Research on Identity Theory in Marketing*, Eds. Americus Reed and Mark Forehand, Edward Elgar Publishing, 72-84.

- Block, Lauren and Keith Wilcox (2013), "Self-Control and Spending." In *The Routledge Companion to Identity and Consumption*, Eds. Ayalla Ruvio and Russell Belk, Routledge, 227-234.

Other Publications

- Wilcox, Keith, Sandra Laporte and Gabriel Ward (2024), "Why Consumers Value Traditionally Made Products." *Character & Context Blog*.

Work in Progress

- Shiri, Amin, Felipe Affonso and Keith Wilcox. "When Consumers Prefer Point Versus Range Estimates of Product Performance." Revise & resubmit at *Journal of Marketing Research*.

- Ward, Gabriel, Nicholas Olson and Keith Wilcox. "Buildings from the Past, Brands for the Future: How Adaptive Reuse Increases Perceived Brand Innovativeness." Revise & resubmit at *Journal of Consumer Research*.

- Mosley, Buffy and Keith Wilcox. "Dynamic Duo: How Text and Image Arousal Shape Consumer Engagement." Revise & resubmit at *Journal of Marketing Research*.

- Wang, Yusu, Keith Wilcox and Jeffrey Lee. "Conspicuous Expression? How the Expression of Arousal Increases Perceived Status." Reject & resubmit at *Journal of Consumer Research*.

- Shiri, Amin, Keith Wilcox and Xiang Wang. "How Intolerance for Uncertainty Increases Confidence in the Voracity of Fake News." Manuscript in preparation for *Psychological Science*.

- Yanar, Evrim, Felicitas Morhart and Keith Wilcox. "Contentment and Satisfaction with Life as a Status Signal." Data collection in progress.

- Hur, Elina, Nofar Duani, Keith Wilcox and Alix Barasch, "How the Virtual Presence of Others Increases Task Performance." Data collection in progress.

- Shiri, Amin and Keith Wilcox. "Faith in Falsity: Why "Fake" Labels Resonate More Than Verified Truths." Data collection in progress.

- Edwards, Devin, Keith Wilcox and Ralph Park, "Suspiciously Positive: How Profile Images Decrease Persuasion in Online Reviews and Social Media." Data collection in progress.

Cases

- Kate Spade New York: Will Expansion Deepen or Dilute the Brand? (2015) Coauthor: Eva Ascarza.

Grants and Funding

- "The New Rich Life: The Role of Life Satisfaction in Status Signaling." Qualtrics Behavioral Research Grant. 2021-2024. Swiss National Science Foundation. Principle Investigators: Felicitas Morhart and Keith Wilcox. Award amount: CHF 239,779.

- "Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor." Qualtrics Behavioral Research Grant. 2015-2016. Qualtrics. Principle Investigators: Rachel Meng, Keith Wilcox and Gita Johar. Award amount: $5,000.

- "Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor." Research Grant. 2015-2016. Marketing Science Institute. Principle Investigators: Rachel Meng, Keith Wilcox and Gita Johar. Award amount: $10,000.

- "Mobile Platforms, Location-Based Services, and their Impact on Consumers." Research Grant. 2013-2014. Marketing Science Institute. Principle Investigators: Peter Pal Zubcsek, Keith Wilcox and Alan Cook. Award amount: $14,300.

- "Depletion-as-Information." Junior Faculty Provost's Grant. 2013-2014. Columbia University. Principle Investigator: Keith Wilcox. Award amount: $25,000.

- "Depletion-as-Information." Eugene M. Lang Support Fund Research Grant. 2013-2014. Columbia University, Graduate School of Business. Principle Investigator: Keith Wilcox. Award amount: $10,000.

- "Quantity Aversion." CIBER Research Grant. 2012-2013. Center for International Business Education and Research, Columbia University. Keith Wilcox and Amy Dalton. Award amount: $10,000.

- "The Role of Emotions In-Store." Duke-Ipsos Research Grant. 2012-2013. Duke-Ipsos Research Center. Principle Investigators: Keith Wilcox and Amy Dalton. Award amount: $10,000.

- "Pride: A License to Indulge and a Cue for Greater Self-Control." Graduate Center Research Grant. 2007-2008. The City University of New York, Graduate Center. Principle Investigator: Keith Wilcox. Award amount: $2,000.

Editorial Appointments

- Associate Editor — *Journal of Consumer Research* (2021-2025)
- Associate Editor — *International Journal of Research in Marketing* (2024-Present)
- Associate Editor — *Journal of Marketing* (2025-Present)
- Associate Editor — *Journal of Marketing Research* (2025-Present)
- Associate Editor — *Oxford Bibliographies in Marketing* (2024-2025)
- Editorial Board — *Journal of Consumer Psychology* (2015-Present)
- Editorial Board — *Journal of Consumer Research* (2025-Present)
- Article Associate Editor — *Frontiers in Psychology* (2023)

Peer Reviewing

- Ad Hoc Reviewer — *Health Psychology*
- Ad Hoc Reviewer — *European Journal of Marketing*
- Ad Hoc Reviewer — *PLOS ONE*
- Ad Hoc Reviewer — *Journal of Experimental Social Psychology*
- Ad Hoc Reviewer — *Psychological Science*
- Ad Hoc Reviewer — *Journal of Personality and Social Psychology*
- Ad Hoc Reviewer — *Personality and Social Psychology Bulletin*
- Ad Hoc Reviewer — *Journal of Public Policy & Marketing*
- Ad Hoc Reviewer — *Journal of Cognitive Psychology*
- Ad Hoc Reviewer — *Journal of Business Ethics*
- Ad Hoc Reviewer — *Marketing Letters*
- Ad Hoc Reviewer — *International Marketing Review*
- Ad Hoc Reviewer — *Journal of Macromarketing*
- Ad Hoc Reviewer — *Journal of the American Society for Information Science and Technology*

Presentations

- When Consumers Prefer Point Versus Range Estimates of Product Performance. (Coauthors: A., Shiri & F. Affonso). Pennsylvania State University, Marketing Speaker Series (2026).
- When Consumers Prefer Point Versus Range Estimates of Product Performance. (Coauthors: A., Shiri & F. Affonso). University of Tennessee, Knoxville, Marketing Speaker Series (2026).
- When Consumers Prefer Point Versus Range Estimates of Product Performance. (Coauthors: A., Shiri & F. Affonso). Oregon State University, Marketing Speaker Series (2025).
- When Consumers Prefer Point Versus Range Estimates of Product Performance. (Coauthors: A., Shiri & F. Affonso). London Business School, Marketing Speaker Series (2025).
- Expressing Contentment on Social Media Increases Status Via Perceived Morality. (Coauthors: E., Yanar & F., Morhart). Society of Consumer Psychology Boutique Conference on Social Impact (2024).
- How Adaptive Reuse Increases Perceived Innovativeness (Coauthors: G. Ward & N Olson). Association for Consumer Research Conference (2024).
- Expressing Contentment on Social Media Increases Status Via Perceived Morality. (Coauthors: E., Yanar & F., Morhart). Vienna University of Economics and Business (2024).

- Expressing Contentment on Social Media Increases Status Via Perceived Morality. (Coauthors: E., Yanar & F., Morhart). Baruch College, City University of New York (2024).
- Faith in Falsity: Why "Fake" Labels Resonate More Than Verified Truths. (Coauthors A. Shiri and X. Wang). Association for Consumer Research Conference (2023).
- Grinners Gain More Followers: Signaling Status through High Arousal Emotional Expressions on Social Media. (Coauthors Y. Wang and J. Lee). Association for Consumer Research Conference (2023).
- Beyond Market Beliefs: The Moderating Role of Self-construal in Copycat Evaluation. (S. Jeon, F. van Horen, P. Verlegh) European Association for Consumer Research Conference (2023).
- Grinners Gain More Followers: Signaling Status through High Arousal Emotional Expressions on Social Media. (Coauthors Y. Wang and J. Lee). Erasmus University Rotterdam (2023).
- Grinners Gain More Followers: Signaling Status through High Arousal Emotional Expressions on Social Media. (Coauthors Y. Wang and J. Lee). University of Groningen (2023).
- Grinners Gain More Followers: Signaling Status through High Arousal Emotional Expressions on Social Media. (Coauthors Y. Wang and J. Lee). Fisher College of Business, Ohio State University, Marketing Camp (2023).
- The Less You Know the Better: How Persuasion Knowledge Increases Preference for Products with Ambiguous Attributes. (Coauthor: A., Shiri). Society of Consumer Psychology Conference (2023).
- Expressing Contentment on Social Media Increases Status Via Perceived Morality. (Coauthors: E., Yanar & F., Morhart). Society of Consumer Psychology Conference (2023).
- The Less You Know the Better: How Persuasion Knowledge Increases Preference for Products with Ambiguous Attributes. (Coauthor: A., Shiri). Association for Consumer Research Conference (2022).
- Contentment and Satisfaction with Life as a Status Signal. (Coauthors: E., Yanar & F., Morhart). Association for Consumer Research Conference (2022).
- Inferring Status from High Arousal Emotions. (Coauthor: Y., Wang, J., Lee). Association for Consumer Research Conference (2022).
- How Intolerance for Uncertainty Shape Sharing of Misinformation. (Coauthors: A., Shiri, X., Wang). Association for Consumer Research Conference (2022).
- How Intolerance for Uncertainty Shape Sharing of Misinformation. (Coauthor: A., Shiri). Society of Consumer Psychology Conference (2022).
- How Traditional Production Shapes Perceptions of Artisanal Product Quality. (Coauthors: G., Ward & S., Laporte). Texas A&M University, New Beginnings Symposium (2021).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). ESSEC, Marketing Speaker Series (2021).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). Dartmouth, Marketing Speaker Series (2020).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). Texas A&M, Marketing Speaker Series (2020).
- “We” Don’t Always Like Copycats: How Self-Construal Influences Evaluation of Product Imitation. (Coauthors: S. Jeon, F. van Horen & P. Verlegh). Association for Consumer Research Conference (2020).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). Stanford, Marketing Speaker Series (2020).

- Don't Worry, Be Healthy: Subjective Feelings of Busyness Lower Self-Control. (Coauthor: E. Hur). Society of Consumer Psychology Conference (2020).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). HEC Paris, Winter Camp (2019).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). HEC Montreal, Marketing Speaker Series (2019).
- The Upside of Busyness: How Feeling Busy Influences Consumer Motivation. (Coauthor: J., Laran). Four-School Conference, Stern Business School, New York University (2019).
- On the Relationship Between Attractiveness and Intelligence. (Coauthors: Y., Jun & S., Matz). Boston College, Marketing Speaker Series (2019).
- The Dual Effect of Subjective Busyness on Consumer Motivation. (Coauthor: J., Laran). Georgetown University, Marketing Speaker Series (2019).
- Is Beauty Only Skin-deep? The Self-Confirming Effects of Physical Attractiveness Stereotype. (Coauthors: Y., Jun & S., Matz). Society of Consumer Psychology Conference (2019).
- Do Altruistic Individuals "Share" More on Social Media? (Coauthor: T., Oh). Association for Consumer Research Conference (2018).
- The Costco Effect: When Utilitarian Products Undermine Self-control. (Coauthors: J., Liu & A., Dalton). Association for Consumer Research Conference (2018).
- The Dual Effect of Subjective Busyness on Consumer Motivation. (Coauthor: J., Laran). Association for Consumer Research Conference (2018).
- The Upside of Busyness: How Feeling Busy Can Increase Productivity. (Coauthor: J., Laran). Dortmund - International School of Management ISM, Marketing Speaker Series (Fall 2018)
- The Upside of Busyness: How Feeling Busy Can Increase Productivity. (Coauthor: J., Laran). Vrije Universiteit Amsterdam, Marketing Speaker Series (2018).
- The Upside of Busyness: How Feeling Busy Can Increase Productivity. (Coauthor: J., Laran). Behavioral Science 2018: Customer Experience Conference. Duke University (2018).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). Boston University, Marketing Speaker Series (2018).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). American Marketing Association Winter Conference (2018).
- The Dual Effect of Subjective Busyness on Consumer Motivation. (Coauthor: (J., Laran). Frontiers in Consumer Psychology Conference (2018).
- Quantity Aversion: Self-Control and Consumers' Response to Product Quantity. (Coauthor: A., Dalton). Society of Consumer Psychology Boutique Conference on Vice and Virtue (2018).
- Is the Glass Half Empty? How Focusing on Energy Consumed Affects Mental Performance. (Coauthor: A., Madzharov). Society of Consumer Psychology Boutique Conference on Vice and Virtue (2018).
- The Downside of Purchase Consideration for Luxury Brands. (Coauthor: F., Petersen). Thought Leaders in Consumer-Based Strategy Conference (2017).
- The Dual Effect of Busyness on Motivation. (Coauthor: J., Laran). University of Miami Marketing Department (2017).
- The Dual Effect of Subjective Busyness on Consumer Motivation. (Coauthor: J., Laran). Association for Consumer Research Conference (2017).

- Is the Glass Half Empty? How Focusing on Energy Consumed Affects Mental Performance. (Coauthor: A., Madzharov). Society of Experimental Social Psychology Conference (2017).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). University of Pennsylvania, Marketing Camp (2017).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). Drexel University, Marketing Speaker Series (2017).
- Consumer Empowerment Empowering the Brand: Challenges and Opportunities. (Coauthors: V. Škare, P. Rydén, H. Muhammad, E. Kottika). Fourth International Conference on Contemporary Marketing Issues, Heraklion, Greece (2016).
- How Luxury Brand Consumption Promotes Costly Self-Signaling Behavior. (Coauthors: H., Hagtvedt & B., Kocher). University of St. Gallen, Marketing Speaker Series (2016).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). Faculty of Business and Economics, HEC Lausanne, Speaker Series (2016).
- Education, Liberalism and Consumers' Response to Luxury Brands. (Coauthor: F., Petersen). Association for Consumer Research Conference (2016).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). Frank Batten School of Leadership & Public Policy, University of Virginia, Speaker Series (2016).
- How Busyness Affects Motivation & Attentional Control. Northwestern University, Marketing Speaker Series (2016).
- How Busyness Affects Motivation & Attentional Control. Duke University, Marketing Speaker Series (2016).
- How Busyness Affects Motivation & Attentional Control. Saïd Business School, Oxford University, Marketing Camp (2016).
- Education, Liberalism and Consumers' Response to Luxury Brands. (Coauthor: F., Petersen). Association for Consumer Research Conference (2016).
- Rumination and Decision Making Among the Poor. (Coauthors: G., Johar & R., Meng). Boulder Summer Conference on Consumer Financial Decision Making (2016).
- Education, Liberalism and Consumers' Response to Luxury Brands. (Coauthor: F., Petersen). Monaco Symposium on Luxury (2016).
- Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor. (Coauthors: G., Johar & R. Meng). Association for Consumer Research Conference Doctoral Symposium (2015).
- The Downside of Purchase Consideration for Luxury Brands. (Coauthor: F., Petersen). Consumer Competence Research Training Conference (2015).
- Restraint that Blinds: Attention Narrowing and Consumers' Response to Numerosity in Self-Control Decisions. (Coauthor: S., Prokopec). University of Maryland, Marketing Camp (Fall 2015).
- Depletion-as-Information: The Role of Feelings in Resource Depletion. (Coauthor: C., Chen). Society of Consumer Psychology Conference (2015).
- Depletion-as-Information: The Role of Feelings in Resource Depletion. (Coauthor: C., Chen). European Marketing Academy Conference (2015).
- How Being Busy Affects Productivity. (Coauthors: A., Stephen, J., Laran, & P., Zubcsek). Ghent University, Marketing Speaker Series (2015).
- How Being Busy Affects Productivity. (Coauthors: A., Stephen, J., Laran, & P., Zubcsek). American University, Marketing Speaker Series (Spring 2015)

- How Missing Deadlines and Being Busy Affect Productivity. (Coauthors: A., Stephen, J., Laran, & P., Zubcsek). Association for Consumer Research Conference Doctoral Symposium (2014).
- Quantity Aversion: Self-Control and Consumers' Response to Product Quantity. (Coauthor: A., Dalton). University of Pittsburgh, Marketing Speaker Series (2014).
- How Missing Deadlines and Being Busy Affect Productivity. (Coauthors: A., Stephen, J., Laran, & P., Zubcsek). Behavioral Decision Research in Management Conference (2014).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). Marketing in Israel Conference (2014).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). Copenhagen Business School, Marketing Speaker Series (2014).
- Encouraging Ideal Behavior via Luxury Consumption. (Coauthors: H., Hagtvedt & B., Kocher). University of Ghent, Marketing Speaker Series (2013).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). ESSEC, Winter Marketing Camp (2013).
- Depletion-as-Information: The Role of Feelings in Resource Depletion. (Coauthor: C., Chen). Association for Consumer Research Conference (2013).
- Tens, Hundreds or Thousands? How Nutritional Information Numerosity Nonconsciously Affects Unhealthy Food Choices. (Coauthor: S., Prokopec). Association for Consumer Research Conference (2013).
- Quantity Aversion: Self-Control and Consumers' Preference for Quality vs. Quantity. (Coauthor: A., Dalton). Association for Consumer Research Conference (2013).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). University of Miami, Marketing Speaker Series (2013).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). Erasmus University, Marketing Speaker Series (2013).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). Fisher College of Business, Ohio State University, Marketing Camp (2013).
- The Less Conspicuous Road to Virtue: The Influence of Luxury Consumption on Socially Valued Behavior. (Coauthors: H., Hagtvedt & B., Kocher). Marketing Science Institute, Young Scholar's Conference (2013).
- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). Association for Consumer Research Conference (2012).
- Encouraging Ideal Behavior by Imagining Luxury Consumption. (Coauthors: H., Hagtvedt & B., Kocher). Association for Consumer Research Conference (2012).
- Does Imitation Benefit the Imitated Brand? The Effects of Target Ambiguity and Processing Mindset on Judgment. (Coauthors: J., Laran & S., Sen). KU Leuven, Marketing Camp (2012).
- Does Imitation Benefit the Imitated Brand? The Effects of Target Ambiguity and Processing Mindset on Judgment. (Coauthors: J., Laran & S., Sen). University of Florida, Marketing Speaker Series (2012).
- Does Imitation Benefit the Imitated Brand? The Effects of Target Ambiguity and Processing Mindset on Judgment. (Coauthors: J., Laran & S., Sen). Four-School Conference, Columbia Business School, Columbia University (2012).

- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). University of Houston, Marketing Speaker Series (2012).
- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). University of Alberta, Marketing Speaker Series (2012).
- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). Society of Consumer Psychology Conference (2012).
- Does Imitation Benefit the Imitated Brand? The Effects of Target Ambiguity and Processing Mindset on Judgment. (Coauthors: J., Laran & S., Sen). Society of Consumer Psychology (2012).
- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). Columbia University, Marketing Speaker Series (2011).
- Are Close Friends the Enemy? Online Social Networks, Narcissism, and Self-Control. (Coauthor: A., Stephen). Boston University, Marketing Speaker Series (2011).
- Far Away or So Close: The Influence of Counterfeits on Genuine Brand Preference. (Coauthors: J., Laran & S., Sen). Association for Consumer Research Conference (2011).
- (In)congruity in the Evaluation of Celebrity Co-Brands. (Coauthor: R., Carroll). Association for Consumer Research Conference (2011).
- Choice, Rejection, and Elaboration on Goal-Inconsistent Alternatives. (Coauthor: J. Laran). La Londe Conference (2011).
- How the Order of Information About an Experiential Product Impacts Affective Evaluation. (Coauthors: A., Roggeveen & D., Grewal). La Londe Conference (2011).
- Choice, Rejection, and Elaboration on Goal-Inconsistent Alternatives. (Coauthor: J., Laran). Society for Consumer Psychology Conference (2011).
- The Ironic Effects of Credit Card Balances and Credit Limits on Consumer Spending. (Coauthors: L., Block & E., Eisenstein). Society for Consumer Psychology Conference (2011).
- How the Order of Information About an Experiential Product Impacts Affective Evaluation. (Coauthors: A., Roggeveen & D., Grewal). Society for Consumer Psychology Conference (2011).
- Vicarious Goal Fulfillment: When the Presence of a Healthy Option Leads to an Indulgent Decision. (Coauthors: B., Vallen, L., Block, & G., Fitzsimons). Society for Personality and Social Psychology Conference (2011).
- How the Order of Information About an Experiential Product Impacts Affective Evaluation. (Coauthors: A., Roggeveen & D., Grewal). Association for Consumer Research Conference (2010).
- The Ironic Effects of Credit Card Balances and Credit Limits on Conspicuous Consumption. (Coauthor: L., Block). Association for Consumer Research Conference (2010).
- The Ironic Effects of Credit Card Balances and Credit Limits on Conspicuous Consumption. (Coauthor: L., Block). Marketing and Public Policy Conference (2010).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). Association for Consumer Research Conference (2009).
- Vicarious Goal Fulfillment: When the Presence of a Healthy Option Leads to an Ironically Indulgent Decision. (Coauthors: B., Vallen, L., Block, & G., Fitzsimons). Association for Consumer Research Conference (2009).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). University of Queensland, Marketing Speaker Series (2009).
- Vicarious Goal Fulfillment: When the Presence of a Healthy Option Leads to an Ironically Indulgent Decision. (Coauthors: B., Vallen, L., Block, & G., Fitzsimons). La Londe Conference (2009).

- Vicarious Goal Fulfillment: When the Presence of a Healthy Option Leads to an Ironically Indulgent Decision. (Coauthors: B., Vallen, L., Block, & G., Fitzsimons). Marketing and Public Policy Conference (2009).
- Preference Fluency in Sequential Customization: The Unexpected Ease or Difficulty of Product Feature Decisions. (Coauthor: S., Song). Association for Consumer Research Conference (2008).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). University of Illinois Urbana Champaign, Marketing Speaker Series (2008).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). University of Southern California, Marketing Speaker Series (2008).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). Babson College, Marketing Speaker Series (2008).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). Lehigh University, Marketing Speaker Series (2008).
- Pride: A License to Indulge or a Cue for Greater Self-Control? (Coauthors: T., Kramer & S. Sen). Rutgers School of Business – Camden, Marketing Speaker Series (2008).
- If I Can Choose Vegetables, then I'll have Dessert: The Mere Presence of Healthy Food Items on Healthy versus Unhealthy Choice. (Coauthors: B., Vallen, L., Block, & G., Fitzsimons). Marketing and Public Policy Conference (2007).
- The Importance of Being Hedonic: Consumer Responsiveness to Promotions for Hedonic and Utilitarian Products. (Coauthor: K., Bawa). Society for Consumer Psychology Conference (2007).
- What's in a Logo: Exploring Motivations to Purchase Counterfeit Brands. (Coauthors: H., Kim & S. Sen). Association for Consumer Research Conference (2006).

Courses Taught

Spring 2025	Analyzing Consumer Behavior, Mays Business School
Spring 2025	Seminar in Consumer Behavior, Mays Business School
Fall 2024	Consumer Behavior, Mays Business School
Fall 2024	Analyzing Consumer Behavior, Mays Business School
Fall 2023	Consumer Behavior, Mays Business School
Fall 2023	Analyzing Consumer Behavior, Mays Business School
Spring 2023	PhD Seminar on Consumer Behavior, Mays Business School
Spring 2023	Consumer Behavior, Mays Business School
Spring 2022	Seminar in Consumer Behavior, Mays Business School
Spring 2021	MBA Core Marketing, Columbia Business School
Fall 2020	MBA Core Marketing, Columbia Business School
Spring 2020	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2019	MBA Core Marketing, Columbia Business School
Summer 2019	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2018	MBA Core Marketing, Columbia Business School
Spring 2018	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2017	MBA Core Marketing, Columbia Business School
Spring 2017	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2016	MBA Core Marketing, Columbia Business School
Spring 2016	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2015	MBA Core Marketing, Columbia Business School
Spring 2015	NYC Immersion Seminar: Luxury Brands, Columbia Business School

Fall 2014	MBA Core Marketing, Columbia Business School
Spring 2014	NYC Immersion Seminar: Luxury Brands, Columbia Business School
Fall 2013	EMBA Core Marketing, Columbia Business School
Fall 2013	Marketing Management, Columbia College
Summer 2013	EMBA Core Marketing, Columbia Business School
Fall 2012	EMBA Core Marketing, Columbia Business School
Spring 2011	MBA Core Marketing, Babson College
Spring 2011	MBA Consumer Behavior, Babson College
Fall 2011	Undergraduate Consumer Behavior, Babson College
Spring 2010	MBA Consumer Behavior, Babson College
Fall 2010	Undergraduate Consumer Behavior, Babson College
Spring 2009	MBA Consumer Behavior, Babson College
Fall 2009	Undergraduate Consumer Behavior, Babson College
Spring 2008	Undergraduate Marketing Management, Baruch College

Doctoral Dissertation Service

- Amin Shiri, doctoral student, Texas A&M, (Dissertation Chair)
- Gabriel Ward, doctoral student, Texas A&M, (Dissertation Co-Chair)
- Charlene Chen, Assistant Professor, Nanyang Business School (Dissertation Committee)
- Travis Tae Oh, Assistant Professor, Yeshiva University (Dissertation Committee)
- Youjung Jun, Assistant Professor, Yonsei School of Business (Dissertation Committee)

Service

- Association for Consumer Research Conference 2023 Co-Chair
- Society of Consumer Psychology Conference 2021 Outreach and Fundraising Co-Chair
- Society of Consumer Psychology Conference 2020 Associate Editor
- Society of Consumer Psychology Boutique Conference 2019 Co-Chair
- AMA Winter Academic Conference 2018 Associate Editor
- Society of Consumer Psychology Boutique Conference 2017 Co-Chair
- APA Conference 2012 (Division 23) Co-Chair
- Society of Consumer Psychology Conference, Ad Hoc Reviewer & Program Committee
- Association for Consumer Research Conference, Ad Hoc Reviewer & Program Committee
- MSI Clayton Dissertation Proposal Competition, Ad Hoc Reviewer
- Valuing Diversity Dissertation Scholarship, Ad Hoc Reviewer

Professional Experience

- Associate, Alvarez & Marsal
- Consultant, Seedco
- Advertising Account Executive, CMG Communications
- Advertising Account Executive, Mezzina/Brown

Expert Testimony in the Last 4 Years

William R. Klopfenstein, et al. v. Fifth Third Bank, United States District Court Southern District of Ohio Western Division. Case No. 1:12-CV-00851. Testified in deposition on the effects of Defendant's alleged wrongful acts on Plaintiffs' consumer behavior, August 2022.

BLST Northstar, LLC and BLST Receivables & Servicing, LLC. v. Santander Consumer USA, Inc., United States District Court of Minnesota. Case No. 22-cv-02210-WMW-DJF. Testified in deposition on the effects of Defendant's alleged wrongful acts on the behavior of Plaintiffs' consumers, July 2024.

Anthony Ramirez, Mynor Villatoro Aldana and Janet Hobson v. Bank of America, N.A., United States District Court for the Northern District of California. Case No. 4:22-cv-00859-YGR. Testified in deposition on the effects of Defendant's alleged wrongful acts on Plaintiffs' consumer behavior, February 2025.

Brendan C. Haney v. Costa Del Mar, Inc., Circuit Court, Fourth Judicial Circuit, in and for Duval County, Florida. Case No. 4 16-2017-CA-004794-XXXX-MA DIVISION: CV-E. Testified in deposition on the effects of Defendant's alleged wrongful acts on Plaintiffs' consumer behavior, May 2025.

Donrick Sanderson, et al. v. Whoop, Inc., United States District Court Northern District of California. Case No. 3:23-CV-05477. Testified in deposition on the effects of Defendant's alleged wrongful acts on Plaintiffs' expected consumer behavior, October 2025.

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Travelers United, Inc. v. Sonesta International Hotels Corporation Superior Court of the District of Columbia Civil Division. Case No2023-CAB-005254. Testified in deposition on the effects of Defendant's alleged wrongful acts on Plaintiffs' consumer behavior, March 2026.

APPENDIX B

MATERIALS RELIED UPON

MATERIALS RELIED UPON

Legal Documents

Rebuttal Testimony of Dr. Stephen Korzeniowski on Behalf of the American Chemistry Council ("ACC"), in the Matter of Proposed Adoption of 20.13.2 NMAC, No. EIB 25-61 (R), February 16, 2026.

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THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF PANKAJ BHALLA

I, Pankaj Bhalla, declare as follows:

1. I am currently employed as Senior Vice President of Grooming and Chief Executive Officer, North America of The Gillette Company LLC ("Gillette"), a subsidiary of The Procter & Gamble Company ("P&G"), for North America.

2. I joined Gillette in early 2000s. I joined P&G in 2005, when P&G acquired Gillette as a wholly-owned subsidiary. From July 2012 through May 2016, I was Senior Marketing Director for P&G's Global Oral Care division. From June 2016 through January 2017, I was Vice

President for P&G's Global Oral Care division. I became Vice President of P&G's North America Gillette and Venus brands in January 2017; Senior Vice President and General Manager of P&G's Europe Shave Care division in July 2019; and Senior Vice President and General Manager of Grooming for Europe in July 2020. I have held my current position since July 2025.

3. My responsibilities include overseeing the strategic direction, operations, and financial performance of Gillette in North America. In this role, I lead product innovation, marketing, manufacturing, and commercial initiatives, and I am responsible for driving growth, ensuring product quality and safety, and advancing the company's long-term business objectives for products in the Grooming category. I have over 24 years of experience in product development, manufacturing and production, distribution systems, and marketing and sales. Based on my role and day-to-day responsibilities, I am familiar with Gillette's product development, manufacturing and production, distribution systems, and marketing and sales.

4. I have reviewed and am familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes and its implementing regulation, N.M. Admin. Code § 20.13.2 (the "Regulation").

5. I understand that P&G is a member of American Chemistry Council and National Association of Manufacturers, which are plaintiffs in this lawsuit challenging the Regulation.

6. I submit this declaration in support of plaintiffs' motion for preliminary injunction in this lawsuit.

I. Gillette Is A Global Shaving Goods Company.

7. Gillette is a wholly owned subsidiary of P&G and is organized under the laws of the State of Delaware, with a principal place of business in Boston, Massachusetts. Gillette has over 1,400 full-time employees in the United States.

8. Gillette was founded in 1901 and, for more than a century, has been one of the world's leading manufacturers and distributors of grooming products. Over the course of approximately 125 years in the marketplace, Gillette razor and blade products have become associated with high quality, safety, comfort and performance.

9. Gillette's products are used throughout the world, with sales in all 50 states and more than 170 countries and territories. Consumers choose Gillette—and often use its products daily for years or even decades—because they trust its safe and effective performance.

10. Like all P&G brands, Gillette follows a consumer-first approach. All of our choices are focused on delivering superiority to consumers in product performance, product packaging, brand communication, retail execution, and value.

11. Consumer safety is our highest priority. A dedicated team of more than 500 scientists and professionals ensure that all of P&G's products, including Gillette's, are held to the highest standards of safety using advanced, globally-recognized methods.

II. The Regulation's Labeling Mandate Would Result In Consumer Confusion.

12. Like all P&G brands, Gillette is committed to ensuring that consumers receive truthful, accurate, and non-misleading information about its products. The company invests substantial resources in product testing, packaging review, and advertising compliance to ensure that its claims about product performance, safety, and benefits are clear and accurate. This goes beyond a commitment to compliance with laws; it is a hallmark of our steadfast focus on putting the consumer first, which begins with clear, accurate and dependable product communications.

13. The warning label at issue in this case falsely conveys safety concerns about blades and razors, harming both consumers and Gillette. That is why Gillette supports this lawsuit. It is not just a question of the cost to Gillette of complying with the labeling mandate, although that cost is substantial, as discussed below. More importantly to Gillette, the warning label would

result in unnecessary consumer confusion and even deception.

14. A brand's performance over years and decades is built on consumer trust and, when that trust erodes, so too does the brand's performance. Gillette's blades and razors have long been proven and trusted as safe for consumer use. Consumers rely on these affordable everyday products for grooming, hygiene and confidence. Requiring Gillette to affix a misleading and alarming warning label to these products would lead to loss of trust and even fear among consumers, alienating them from products they need and a brand they have trusted for years. Gillette would also face clear logistical hurdles in complying with this regulation (e.g., responding to consumer inquiries, developing educational materials, training customer-service personnel, and otherwise explaining that the products are safe for use regardless of the confusing and deceptive warning label—especially for U.S. consumers not located in New Mexico).

III. Razor Blades Contain Microscopic Amounts of PTFE.

15. Like all leading manufacturers of modern razor blades, Gillette uses a microscopic amount of Polytetrafluoroethylene ("PTFE") in certain of its products.

16. PTFE is exempt from New Mexico's product ban, which we understand is an acknowledgement that PTFE does not present the risks that the state intends to target with the ban. However, PTFE is not exempt from the Regulation's labeling mandate.

17. PTFE is applied to blades as a microscopic coating—less than one-thousandth the edge of a sheet of paper—to reduce friction for better performance, skin comfort, and safety.

18. This use of PTFE on razor blades has been an industry standard for decades, with no comparable alternative.

19. PTFE allows the blade to cut cleanly through hair rather than sticking to the hair. Without the addition of PTFE, a blade would work only one or two times before the blade deteriorated and became too uncomfortable to use, resulting in consumers needing to buy more

blades, more often. Blades without PTFE risk pulling hairs out of the skin, rather than cutting cleanly through hairs, which would lead to consumers experiencing significant irritation, nicks, and cuts.

20. The amount of PTFE used in one razor blade is so small it would take the amount of PTFE in four million razor blade edges to equal the amount of PTFE used in just one coated, non-stick pan—which is itself only a microscopic coating.

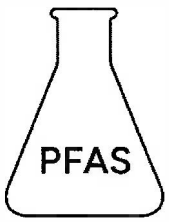
21. Health and safety are Gillette's top priorities in designing and manufacturing products. Gillette uses state-of-the-art manufacturing controls and has a long history of environmental protection and compliance globally. Gillette complies with all relevant laws regarding the use of PFAS during manufacturing, and Gillette's environmental controls have been approved by regulators across all relevant jurisdictions.

IV. Labeling Razor And Blade Products With The Required Warning Would Be Exceptionally Burdensome.

22. Gillette uses complex, highly automated manufacturing processes.

23. Razor and blade products are small, intricately manufactured products with limited space available for labeling.

24. The Regulation suggests that both the product and the product packaging are required to bear the required warning label, consisting of an Erlenmeyer flask labeled "PFAS" in legible typeface:



25. Gillette understands that in order to comply with the Regulation, it must place the required label somewhere on the blade itself or surrounding components. It would be very difficult and costly to do so, costing many millions of dollars and requiring many months to redesign global manufacturing processes.

26. The various components of a modern razor blade cartridge are made using a mold press machine, which is a large machine containing multiple mold cavities. Changing these molds is an exceptionally costly, time-consuming, and delicate process, even for a large corporation—and generally takes at least six to nine months.

27. Due to the lengthy period needed to replace the molds, Gillette anticipates it would not have sufficient time to change its manufacturing processes to comply with the Regulation's January 1, 2027 deadline. Gillette therefore likely will need to proceed with a temporary solution of some sort, which would be costly, complex and potentially generate supply chain disruptions that impact the American consumer.

V. Labeling Product Packaging With The Required Warning Would Be Exceptionally Burdensome.

28. In addition to the product warning label, we understand that the Regulation suggests manufacturers would be required to include the warning label on the *packaging* for razor blade products, too.

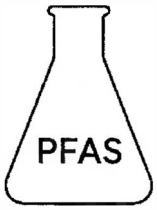
29. The process of redesigning product packaging to comply with the Regulation's requirement of an Erlenmeyer flask stamped with "PFAS" in font "no smaller than the font used for other consumer information on the product" would be costly and time-consuming.

30. All told, it would cost Gillette an estimated $11 million to $14 million in direct costs *only*, which includes redesigning the manufacturing processes for products and product packaging, to accommodate the required warning label. That estimate does not account for the

significant additional cost of allaying consumer confusion (discussed above) and costs related to carving out a new supply chain for the United States (discussed below). In total, the combined costs—for a label change that does not meet any brand or consumer demand—could be well into the tens of millions.

VI. The Regulation's Reach Is Overbroad And Would Impact Gillette's Global Supply Chain For All Razor And Blade Products.

31. The Regulation's warning-label mandate would affect not only products intended for distribution within New Mexico, but Gillette's entire global supply chain. Gillette would be required to create separate product streams for the United States, because Gillette cannot risk the confusion that would result if Gillette suddenly began printing the Erlenmeyer flask label, pictured below, on products distributed around the world.



32. But creating a separate supply chain for the United States alone would impose significant additional costs, well above the direct cost estimate above.

33. Even within the U.S., Gillette cannot create a separate product stream for New Mexico alone. For one, Gillette operates a large and complex distribution network and cannot control where within a particular country its retail customers will distribute its products. Gillette's products are sold through numerous and diverse channels, including but not limited to mass merchandisers, e-commerce channels, grocery stores, membership club stores, drug stores, department stores, distributors and wholesalers. Many of these retail customers operate on a

global, national, or regional scale and do not themselves have the ability to direct products to a single state.

VII. Gillette Does Not Support Regulations That Require False, Misleading Labeling.

34. In summary, like all P&G brands, Gillette supports safe, science-based regulation and complies with a broad swath of laws and regulations involving its products, including laws related to PFAS. But Gillette cannot support misleading laws like the Regulation.

35. Gillette has spent over a century building a reputation for producing high-quality products that meet consumers' daily needs—smooth, safe shaves without nicks or cuts—and for providing consumers with accurate information about those products.

36. Yet the required Erlenmeyer flask label necessarily communicates risk or danger. And the Regulation would require Gillette to affix that provocative label to *all* razor blade products—and their packaging—despite the fact that they only use PTFE, and only microscopic amounts. The Regulation would therefore require Gillette to spend potentially tens of millions of dollars to produce and distribute labels falsely communicating that PTFE is dangerous to human health and the environment.

37. Gillette does not agree with that message. It objects to being compelled to incur a substantial expense to falsely communicate to consumers that its blade and razor products—which have been safely and effectively used in this country for over a century—present a consumer hazard.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 07/01/, 2026.

Pankaj Bhalla
Senior Vice President of Grooming
and CEO of Gillette North America
at P&G

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMATIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAUL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF JASON ESPINOZA

I, Jason Espinoza, declare as follows:

1. I currently serve as the New Mexico State Director for the National Federation of Independent Business, Inc. ("NFIB"), one of the plaintiffs in this action.

2. NFIB is the nation's leading small business association, representing hundreds of thousands of members across the United States. NFIB's mission is to promote and protect the right of its members to own, operate, and grow their businesses. NFIB represents, in Washington, D.C., and all 50 state capitals, the interests of its members.

3. NFIB represents almost 300,000 members nationwide, including non-New Mexico members who ship goods to New Mexico and sell goods within the State. In New Mexico specifically, NFIB represents over 1,000 members. These members span the spectrum of small and independent businesses—from sole proprietorships to firms with dozens or hundreds of employees—across all industries and sectors of the economy. The average NFIB member has between 8–10 employees.

4. As NFIB's State Director for New Mexico, I am extremely familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes ("Act") and its implementing regulation, 20.13.2 NMAC (the "PFAS Regulation").

5. On October 21, 2025, NFIB submitted a comment letter to the Environmental Improvement Board ("Board") urging the Board to deny the New Mexico Environment Department's ("Department") petition for regulatory change and reject the Department's proposed rule in order "to prevent serious costs and harms to small businesses."

6. NFIB has spoken to multiple members located in New Mexico that will be negatively impacted by the Act and the PFAS Regulation.

7. These members own businesses where everyday operation depends on the use of products containing PFAS, or they make products for consumers that contain PFAS.

8. For example, the members spoken to use materials such as cutting fluids, coolants, lacquers, paints, stains, silicones, and sealers, all of which can include PFAS. Without use of these materials, these members would be forced to spend time and money to find alternative PFAS-free materials or expend resources to create the same product without using these materials.

9. Some of the members spoken to sell products that contain PFAS, either for resale or because a PFAS containing substance is one component of the end-product they manufacture. These members will be responsible for ensuring that the products abide by the PFAS Regulation's labeling requirement of an Erlenmeyer flask labeled "PFAS" in legible typeface.

10. No state, besides New Mexico, requires companies to include a pictogram warning on its products—including other states that regulate PFAS.

11. Adding the PFAS Regulation's required warning to the products of NFIB members would require significant expense, as well as considerable time to design and affix the required warning label.

12. As previously indicated in its comment letter and advocacy, NFIB does not support misleading regulations like the PFAS Regulation.

13. The required Erlenmeyer flask label necessarily communicates risk or danger. And the PFAS Regulation would require some of NFIB's members to affix that evocative label to *all* products—and their packaging—that use *any* amount of *any* type of intentionally added PFAS. It would thus require these members to produce labels falsely communicating that all PFAS are dangerous to human health and the environment.

14. NFIB's members do not support government mandates requiring them to communicate messages on their products for which the business does not agree and does not support. The compelled speech that all PFAS are harmful, by way of the Erlenmeyer flask, is one such message.

15. I submit this declaration in support of plaintiffs' motion for preliminary injunction in the above-captioned case challenging the PFAS Regulation.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 29th day of June, 2026.

Jason Espinoza

New Mexico State Director
National Federation of Independent
Business, Inc.

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE.

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF JEREMY YON

I, Jeremy Yon, declare as follows:

1. I am currently employed as Director, Compliance & Industry Relations for Current Lighting HoldCo, Inc d.b.a. Current Lighting.

2. I joined Current Lighting's preceding parent company, General Electric, on 04/01/2019. My present responsibilities include leading the identification of applicable regulations and facilitating compliance by partnering with internal product teams. I have over 25 years of experience in the lighting industry, with roles ranging from specifying products, product

development, system engineering, and industry/government relations. Based on my role and day-to-day responsibilities, I am familiar with relevant aspects of Current Lighting's product development, manufacturing and production, distribution systems, and marketing.

3. I have reviewed and am familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes and its implementing regulation, 20.13.2 NMAC (the "PFAS Regulation").

4. I understand that Current Lighting is a member of plaintiff National Electrical Manufacturers Association (NEMA).

5. I submit this declaration in support of plaintiffs' motion for preliminary injunction in the above-captioned case challenging the PFAS Regulation.

I. Current Lighting Is a National Commercial, Industrial, and Institutional Goods Company.

6. Current Lighting is organized under the laws of the State of Delaware, with a principal place of business in Mayfield Heights, OH.

7. Current Lighting is a national leader in the lighting industry, focused on commercial, institutional, and industrial lighting and lighting controls.

8. Current Lighting manufactures, markets, and distributes traditional and LED lamps, LED luminaires for interior and exterior applications, and lighting controls for interior and exterior applications.

II. Current Lighting Manufactures Lighting Products that incorporate components with PFAS.

9. Some of Current Lighting's products incorporate components that use PFAS to satisfy specific safety and/or performance requirements, including PTFE, FEP, 1-Propene+, Alkyl Vinyl Ether, and PPBS.

10. In particular, components incorporating these chemicals provide: protection from shattering glass (e.g. food service areas), adequate high-temperature ratings with specific electrical products (e.g. molded plastic parts that conceal power components), long-life protection of wires and electrical components that require high-temperature ratings for the safety certification, and in support of high-reflectance surfaces for maximum optical/energy efficiency

III. Labeling Packaging and/or Documentation for Products with the Required Warning Would Be Burdensome.

11. I understand that the PFAS Regulation requires a warning label on packaging and/or documentation.

12. Current Lighting dedicates significant time and money to designing the overall look of products and their packaging and documentation. Due to the complex nature of lighting and controls products, there is extensive amount of information that must be communicated clearly and succinctly

13. The process of redesigning product packaging and/or documentation to comply with the PFAS Regulation would be costly and time-consuming.

14. Only specific products within Current Lighting's expansive product offering include components that utilize PFAS, often existing as a sub-component of a procured component, making accurate identification time consuming and burdensome.

15. Furthermore, the ability to identify the use from casual observation is nearly impossible, making enforcement complicated and almost impractical for NM regulators.

IV. These Problems Affect All Products Distributed within the United States.

16. The scope of the PFAS Regulation's warning-label requirement would affect not only products intended for distribution within New Mexico, but products intended for distribution within *all* states.

17. Current Lighting operates a large and complex distribution network, with multiple models of distribution and intermediaries. Current Lighting's products are sold primarily through distributors and direct to customers who have locations throughout the country.

18. Current Lighting cannot create separate product streams for products intended for installation within New Mexico because it is not feasible from a distribution perspective. Current Lighting does not control where within the United States its customers distribute or install Current Lighting's products. For example, if Current Lighting sold 1,000 units of an LED lamp to an independent distributer, that distribution company would independently choose whether, and how many, units to send to customers in New Mexico. Current Lighting is not involved in that distribution process.

19. Even if Current Lighting could overcome this distribution hurdle, it would be prohibitively expensive and burdensome for Current Lighting to design, create, and maintain an entirely separate stream of products exclusively for New Mexico. Thus, when states have unique labeling and/or documentation requirements for products, Current Lighting must redesign the entire, nationwide product line.

V. Current Lighting Does Not Support Regulations that Require Potentially Misleading Labeling.

20. Current Lighting supports safe, science-based regulation. But Current Lighting cannot support misleading regulations like the blanket making of this PFAS Regulation.

21. The required Erlenmeyer flask label necessarily communicates risk or danger. And the PFAS Regulation would require Current Lighting to mark that evocative symbol to *all* product packaging and/or documentation—that use *any* amount of *any* type of intentionally added PFAS. It would thus require Current Lighting to substantiate that the specific PFAS in the specific

applications are more dangerous to human health and the environment than the safety, energy, lifetime, or other purpose that led to their inclusion.

22. Current Lighting does not agree with that message. It objects to being compelled to communicate the message that all PFAS are always detrimental, given the present complex balance of product requirements.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 22, 2026.

Jeremy Yon

Director, Compliance & Industry Relations - Current Lighting

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE, *Plaintiffs*, v. JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*, *Defendants*.	Case No.: 1:26-cv-02130

DECLARATION OF MIGUEL HALL

I, Miguel Hall, declare as follows:

1. I am currently employed as Senior Manager, Product Development, R&D by Sunbeam Products, Inc., which produces Calphalon brand home kitchen products ("Calphalon" or the "Company").

2. I joined the Company in 2016. My responsibilities include product lifecycle management, test lab management, and new product development leadership. I have over 20 years of experience in new product development and manufacturing. Based on my role and day-to-day

responsibilities, I am familiar with Calphalon's product development, manufacturing and production, distribution systems, and marketing.

3. I have reviewed and am familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes and its implementing regulation, 20.13.2 NMAC (the "PFAS Regulation").

4. I understand that the Company's ultimate parent company is a member of plaintiff Association of Home Appliance Manufacturers.

5. I submit this declaration in support of plaintiffs' motion for preliminary injunction in the above-captioned case challenging the PFAS Regulation.

I. Calphalon Is a Leading Cookware Brand.

6. Calphalon is a brand of Sunbeam Products, Inc., which is organized under the laws of the State of Delaware, with a principal place of business in Atlanta, Georgia.

7. Calphalon is an industry leader in cookware, known for its high-quality pots, pans, and kitchen products.

8. Calphalon produces, designs, markets, distributes, and sells a wide range of cookware products, including nonstick pans.

II. Certain Calphalon Products Contain PTFE for Nonstick Performance.

9. Of the chemicals in the PFAS family, Calphalon uses only polytetrafluoroethylene ("PTFE").

10. In the Calphalon cookware products that contain PTFE, the PTFE is used exclusively for nonstick purposes. PTFE provides a durable, low-friction cooking surface that allows food to release easily and facilitates cleaning. The U.S. Food and Drug Administration ("FDA") has cleared PTFE for use as a food-contact substance.

III. Calphalon Is Committed to Transparency Regarding PTFE.

11. Calphalon is committed to transparency regarding the materials used in its products.

12. Packaging for Calphalon cookware made with PTFE includes a statement that the product contains PTFE. The packaging also provides a URL and QR code directing consumers to the Calphalon website, which includes the same disclosure.

13. Calphalon includes a statement disclosing that the product contains PTFE on its own online product listings and provides this information to retailers for online listings.

IV. The On-Product Warning Requirement Would Create Substantial Implementation Challenges.

14. I understand that the PFAS Regulation requires products themselves to bear the required warning label, consisting of an Erlenmeyer flask labeled "PFAS" in legible typeface and that the font be no smaller than the largest font used for other consumer information.

15. This requirement to place a label on the cookware product itself—as opposed to packaging or other disclosures—presents unique challenges.

16. Cookware cooking surfaces are functional, must withstand high heat and liquids, and cannot bear typical adhesive labels. Because of these limitations, engraving is the only reasonable option. However, developing and implementing tooling for engraving during manufacture is expensive and time-consuming.

17. Calphalon already complies with California's AB 1200, which requires disclosure of intentionally added PFAS in cookware on product packaging, on Calphalon's website, and on retail websites. Calphalon's product packaging provides the disclosures required under California law. No state other than New Mexico has required Calphalon to include a warning or even a disclosure on the cookware product itself.

18. New Mexico's requirement for a pictographic label on the cookware product itself—rather than on packaging—is uniquely burdensome for the reasons described above.

19. Because it is not commercially feasible to create a separate product line for New Mexico, adding the on-product labeling would affect all products nationwide. Calphalon must decide whether to alter its entire product line—including investing in the specialized tooling required for engraving—to comply with New Mexico's unique requirement or to exit the New Mexico market.

V. The Required Packaging Warning Would Require New Packaging and Would Not Account for FDA-Cleared PTFE Food-Contact Uses.

20. I understand that, in addition to requiring a warning label on products, the PFAS Regulation requires a warning label on packaging in some instances and that the PFAS Regulation would require Calphalon to include the warning label on the packaging for its cookware products.

21. Calphalon dedicates significant time and resources to designing the overall look of products and its packaging. Packaging is an important part of the consumer experience and purchasing decision.

22. The PFAS Regulation's labeling requirement does not distinguish between different substances within the PFAS family or account for the FDA's clearance of PTFE for food-contact use. As a result, Calphalon would be required to place a warning label on products that contain a substance the FDA has cleared for the very use at issue. Currently, product packaging for Calphalon products with PTFE includes a disclosure of PTFE rather than a warning.

VI. Calphalon Does Not Always Control the Ultimate Distribution of Its Products

23. Calphalon operates through a large and complex distribution network, with multiple models of distribution. Calphalon's cookware products are sold through mass merchandisers, its own and third-party e-commerce channels, and other retail channels.

24. Calphalon does not control where its retail customers ultimately distribute its cookware within the United States. Calphalon can control only its own direct distribution and sale of products to New Mexico.

25. It would be prohibitively expensive and burdensome for Calphalon to design, create, and maintain an entirely separate stream of nonstick cookware products exclusively for New Mexico. Even if Calphalon did take on this commercially unreasonable endeavor, unlabeled products sold by Calphalon to other states could be ultimately sold in New Mexico due to the nature of the distribution channels.

[Signature on following page]

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 6/24/2026, 2026.

DocuSigned by:

9B267E098C36457...

Miguel Hall
Senior Manager, Product Development, R&D, Calphalon

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF LEE A. BOWERS

I, Lee A. Bowers, declare as follows:

1. I am currently employed as Vice President of Environmental, Health & Safety for RPM International Inc. (RPM International).

2. I have been serving as RPM International Vice President of Environmental, Health & Safety since December 1, 2021. My responsibilities include executive management and oversight of Environmental, Health & Safety (EH&S), including regulatory affairs and product stewardship functions. I have over 28 years of experience in EH&S and regulatory affairs management with escalating roles and responsibilities in multiple RPM subsidiaries. Based on my

role and day-to-day responsibilities, I am familiar with the product development, manufacturing and production, distribution systems, and marketing and sales functions of RPM International and its subsidiaries (collectively "RPM").

3. I have reviewed and am familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes and its implementing regulation, 20.13.2 NMAC (the "PFAS Regulation").

4. I understand that RPM Interrnational is a member of plaintiff American Coatings Association and plaintiff National Association of Manufacturers.

5. I submit this declaration in support of plaintiffs' motion for preliminary injunction in the above-captioned case challenging the PFAS Regulation.

I. RPM is a Global Coatings and Construction Products Company.

6. RPM International is organized under the laws of the State of Delaware, with a principal place of business in Medina, Ohio. As of June 12, 2026, RPM employed approximately 9,876 people in the United States and 12 people in New Mexico.

7. RPM is a global leader in the high performance coatings and construction products industry, focused on easy to use and consumer products, specialized industrial/commercial coatings and construction products.

8. RPM formulates, manufactures, markets, and/or distributes a wide range of value added, high brand recognition coatings and construction products for the consumer, commercial and industrial markets.

II. RPM is Committed to Innovation, Safety, and Environmental Sustainability.

9. RPM is committed to operating responsibly within the markets within which we operate in compliance with all environmental, transportation and safety regulations while

developing new technologies that incorporate technical performance, environmental sustainability and regulatory compliance in the design of our products and packaging.

III. RPM Manufactures high performance consumer and industrial coatings with PFAS.

10. RPM uses a type of PFAS called PCBTF (or Oxsol 100) in its products.

11. In particular, PCBTF is widely used by RPM and the general coatings industry as a high performing, VOC exempt solvent. PCBTF is used by RPM in field applied architectural and industrial Maintenance (AIM) coatings; marine coatings; and in various adhesives and consumer products. The extensive use of PCBTF in industry products is largely due to the U.S. Environmental Protection Agency (EPA) in 1994, exempted PCBTF from its list of volatile organic compounds (VOCs). In addition, PCBTF has more favorable performance properties than other exempt compounds (e.g., it evaporates slower and has a higher flash point and is therefore less flammable than other exempt VOCs, including acetone).

12. RPM's product lines that contain PCBTF typically contain less than 5% of PCBTF in the chemical composition by weight, but can range up to 70% for some niche, high performing coatings products.

IV. RPM Uses State-of-the-Art Environmental Controls that Minimize Any Release of PFAS During Manufacturing

13. RPM uses state-of-the-art environmental controls in its manufacturing processes, which ensure that any release of PFAS during the manufacturing process is either zero or negligible.

14. RPM complies with all relevant laws regarding the use of PFAS during manufacturing, and RPM's environmental controls have been approved by regulators in the various U.S. states where we have permitted operations.

V. Labeling Products with the Required Warning Would Be Highly Burdensome.

15. I understand that the PFAS Regulation requires products themselves to bear the required warning label, consisting of an Erlenmeyer flask labeled "PFAS" in legible typeface.

16. It would be particularly difficult, and perhaps impossible, to add New Mexico's required warning to several of RPM's product lines, given those products' small size, unique shape, existing requirements to meet other federally required labeling standard or other qualities of product and packaging that would make adding the pictogram to the label difficult.

17. Assuming it even can be done, adding the New Mexico PFAS Regulation's required warning label to RPM products would be extraordinarily expensive and resource-intensive. Preliminary estimates are that it would cost RPM several hundred thousand dollars and take several months to redesign manufacturing, labeling and packaging processes to accommodate the required warning label on the products.

VI. Labeling the Packaging of Products with the Required Warning Would Be Burdensome.

18. I understand that, in addition to requiring a warning label on products, the PFAS Regulation requires a warning label on packaging in some instances. We understand that the PFAS Regulation would require RPM to include the warning label on the packaging for its touch up and repair products, too.

19. RPM dedicates significant time and money to designing the overall look of products and packaging. These small packages are designed to meet consumer needs, ease of application, customer safety and conveyance of required product identification and current consumer product labeling requirements.

20. The process of redesigning product packaging to comply with the PFAS Regulation's requirement of an Erlenmeyer flask with PFAS in font "no smaller than the font used

for other consumer information on the product" would be costly and extremely time-consuming. RPM's subsidiaries are already actively working to fully reformulate products containing PFAS, including products containing PCBTF to meet the various U.S. state PFAS in Products Regulations compliance deadlines that eventually ban the use of PFAS in all products sold in these states by 2032, such as New Mexico. RPM's believes this is a more prudent and responsible use of our valuable time and resources to ensure compliance with the applicable state regulations that ban and/or restrict the use of PFAS in products.

VII. These Problems Affect All RPM Products Containing PFAS Distributed within the United States.

21. The scope of the PFAS Regulation's warning-label requirement would affect not only RPM products intended for distribution within New Mexico, but also products intended for distribution within *all* states and, in many cases, Mexico and Canada.

22. RPM operates a large and complex distribution network, with multiple models of distribution and intermediaries. RPM products are sold through mass merchandisers, e-commerce (including social commerce) channels, grocery stores, hardware stores, membership club stores, drug stores, value store retailers, distributors, wholesalers, and various professional / industrial channels throughout the United States and abroad.

23. RPM cannot create separate product streams for our affected products lines intended for distribution within New Mexico because it is not feasible from a distribution perspective. RPM does not in all cases control where within the United States its retail customers distribute our affected products For example, if RPM sold 1,000 units of an affected coatings product to a retailer customer with stores throughout the country, that retailer company would independently choose whether, and how many, units to send to stores in New Mexico. RPM has no involvement in that distribution process.

24. Even if RPM could overcome this distribution hurdle, it would be prohibitively expensive and burdensome for RPM to design, create, and maintain an entirely separate stream of products exclusively for New Mexico while at the same time working to reformulate all PFAS containing products to meet the 2032 deadline. Thus, when states have unique labeling requirements for products, RPM must redesign the entire, nationwide product line.

VIII. RPM Does Not Support Regulations that Require False, Misleading Labeling.

25. RPM supports safe, science-based regulation. But RPM cannot support misleading regulations like the PFAS Regulation.

26. The required Erlenmeyer flask label necessarily communicates risk or danger. And the PFAS Regulation would require RPM to affix that evocative symbol to *all affected* products—and their packaging—that use *any* amount of *any* type of intentionally added PFAS. It would thus require RPM to produce labels falsely communicating that all PFAS are dangerous to human health and the environment.

27. Given the potentially misleading nature of the symbol if applied to all PFAS containing products, RPM advocates that rather than diverting time and resources away from efforts to reformulate PFAS out of products that contain it today to label all products that contain PFAS with the Erlenmeyer flask that New Mexico not adopt this rule and allow companies to continue reformulating affected products that contain PFAS, therefore removing the use of PFAS in affected products from the consumer, commercial and industrial markets by the prescribed compliance deadlines for affected product categories and eventually in all affected product lines by 2032.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 15, 2026.

Lee A. Bowers

Vice President – Environmental,
Health & Safety

THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMERICAN CHEMISTRY COUNCIL, ALLIANCE FOR AUTOMOTIVE INNOVATION, AMERICAN COATINGS ASSOCIATION, ASSOCIATION OF HOME APPLIANCE MANUFACTURERS, NATIONAL ASSOCIATION OF MANUFACTURERS, NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION, NATIONAL FEDERATION OF INDEPENDENT BUSINESS, INC., NEW MEXICO RETAIL ASSOCIATION, and POWER TOOL INSTITUTE,

Plaintiffs,

v.

JAMES C. KENNEY, *in his official capacity as Secretary of New Mexico Environment Department*; and RAÚL TORREZ, *in his official capacity as Attorney General of New Mexico*,

Defendants.

Case No.: 1:26-cv-02130

DECLARATION OF STEPHANIE THOMPSON

I, Stephanie Thompson, declare as follows:

1. I am currently employed as Product Standards Manager of Koki Holdings America Ltd. (KHA). KHA is a wholly owned subsidiary of Koki Holdings Company, Ltd., a Japanese company that manufactures and sells handheld power tools worldwide.

2. I joined KHA in November 2017 and am the Product Standards Manager. I hold a degree in mechanical engineering from Georgia Institute of Technology. My responsibilities include liaising with the manufacturing plants and product standards department to ensure product

compliance and marketability in the US and Canada. Based on my role and day-to-day responsibilities, I am familiar with the products sold by KHA as well as KHA's distribution systems, marketing and sales.

3. I have reviewed and am familiar with New Mexico's Per- and Poly-Fluoroalkyl Substances Protection Act, consisting of sections 74-15-1 through 74-15-7 of the New Mexico Statutes and its implementing regulation, 20.13.2 NMAC (the "PFAS Regulation").

4. I understand that Koki Holdings America is a member of plaintiff Power Tool Institute (PTI).

5. I submit this declaration in support of plaintiffs' motion for preliminary injunction in the above-captioned case challenging the PFAS Regulation.

6. KHA is a distributor of handheld power tools in the United States and Canada. Koki Holdings America Ltd. is organized under the laws of the State of Delaware, with a principal place of business Braselton, Georgia. As of June 1, 2026, KHA employed two hundred fifteen people in the United States..

7. KHA is the sole distributor in North America for Metabo HPT and Metabo branded products manufactured by Koki Holdings Co., Ltd. and is a national leader in the power tool industry selling cutting edge, durable, power tools used in the construction industry and by do-it-yourselfers.

I. Koki Holdings Distributes power tools and lithium ion batteries with PFAS.

8. KHA products contain PFAS such as PVDF, PTFE and PFA for the functioning of lithium ion batteries and electric power tools. Without these critical chemicals, which are primarily internal to the product, it would be impossible to manufacture safe, functioning lithium-

ion batteries and electric power tools for which PFAS are used as a waterproofing agent, binders, hardeners, and seals. These properties are crucial to manufacturing safe and functioning tools.

9. In most products the maximum overall concentration of PFAS in the entire product is < 1%.

II. Labeling Products with the Required Warning Would Be Highly Burdensome.

10. I understand that the PFAS Regulation requires products themselves to bear the required warning label, consisting of an Erlenmeyer flask labeled "PFAS" in legible typeface.

11. No state, besides New Mexico, requires KHA to include a pictogram warning on its products—including other states that regulate PFAS.

12. It would be particularly difficult to add New Mexico's required warning to lithium-ion batteries given those products' small size and molded casing. Adding an additional, and I believe unnecessary, warning to an already crowded label would dilute the effectiveness of such a warning and require a complete redesigning of the battery casing. For example, as shown in the below image, there is almost no surface area on the label of this representative lithium-ion battery onto which the image of an Erlenmeyer flask labeled "PFAS" in legible typeface can be imprinted or embossed. Redesign of a battery casing also comes with additional costs to have the product re-tested and re-certified for compliance with safety standards. Power tool rating labels are also compact and would have to be reworked to fit a legible Erlenmeyer flask symbol.

Labeling these products thus requires more than merely printing ink; it could require changing the molding and/or engraving directly into hundreds of products.

13. Assuming it even can be done, adding the PFAS Regulation's required warning label to at least 300 models and hundreds of thousands of individual products would be extraordinarily time consuming, expensive and resource intensive. It would take over a year to add the required warning label to all affected products.

III. Labeling the Packaging of KHA's Products with the Required Warning Would Be Burdensome.

14. I understand that, in addition to requiring a warning label on products, the PFAS Regulation requires a warning label on packaging in some instances. We understand that the PFAS Regulation would require KHA to include the warning label on the packaging for its products, too.

15. KHA dedicates significant time and money to designing the overall look of products and their packaging to effectively communicate the specifications, benefits, and uses of their products. Adding a symbol that communicates a confusing or incorrect message to the consumer would be detrimental to its brand.

16. The process of redesigning product packaging to comply with the PFAS Regulation's requirement of an Erlenmeyer flask with PFAS in font "no smaller than the font used for other consumer information on the product" would be costly and time-consuming. The cost of redesigning and reprinting required if the PFAS Regulation were to be applicable to KHA's products could not be recovered without increases in pricing, lost business by delay in product availability, and loss of profits. The cost of adding the Erlenmeyer flask symbol to all products and packaging would cost hundreds of thousands of dollars.

IV. These Problems Affect All 300 Models Distributed within the United States.

17. The scope of the PFAS Regulation's warning-label requirement would affect not only lithium ion batteries and power tools intended for distribution within New Mexico, but lithium ion batteries and power tools intended for distribution within *all* fifty states and Canada.

18. KHA operates a large and complex distribution network, with multiple models of distribution and intermediaries. Metabo HPT power tools are sold through mass merchandisers, e-commerce (including social commerce) channels, and independent distributors in all fifty states, and Canada.

19. KHA cannot create separate product streams for products intended for distribution within New Mexico because it is not feasible from a distribution perspective. KHA does not control where within the United States its retail customers distribute KHA's power tools and batteries. For example, if KHA sold 1,000 batteries and power tools to a retailer customer with

stores throughout the country, that retailer company would independently choose whether, and how many, units to send to stores in New Mexico. KHA has no involvement in that distribution process.

20. Even if KHA could overcome this distribution hurdle, it would be prohibitively expensive and burdensome for KHA to design, create, and maintain an entirely separate stream of products exclusively for New Mexico. Thus, when states have unique labeling requirements for products, the entire North American product lines must be redesigned.

V. KHA Does Not Support Regulations that Require False, Misleading Labeling.

21. KHA supports safe, science-based regulation. But KHA cannot support misleading regulations like the PFAS Regulation.

22. The required Erlenmeyer flask label necessarily communicates risk or danger. And the PFAS Regulation would require KHA to affix that evocative label to *all* products—and their packaging—that use *any* amount of *any* type of intentionally added PFAS. It would thus require KHA to produce labels falsely communicating that all PFAS, and all products containing PFAS are dangerous to human health and the environment.

23. KHA does not agree with that message. It objects to being compelled to communicate the message that all PFAS and all products containing PFAS are harmful.

24. Additionally, the lithium-ion batteries that KHA distributes are recyclable and KHA is a steward as recognized by The Battery Network (a producer responsibility organization) and recognized as a compliant participant in regulated state and voluntary programs. This makes the likelihood of any harm to the people of New Mexico or its land even more improbable.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 30, 2026.

Stephanie Thompson
Product Standards Manager