DRAFT Policy Recommendations and Contact Information
Act 154 Chemical Use Working Group
Nov. 1, 2016

Table of Contents

p.26 *Ken Rumelt, Vermont Law School. Jon Groveman, VNRC, Paul Burns, VPRIG*

- Citizen Suit Enforcement
  Contact Ken Rumelt: KRUMELT@vermontlaw.edu
- Medical Monitoring
  Contact Ken Rumelt: KRUMELT@vermontlaw.edu
- Strict Joint and Several Liability with a Right to Seek Contribution
  Contact Ken Ruemlt: KRUMELT@vermontlaw.edu

p. 34 *Martin Wolf, Ashley Orgain and Nicole Sala, Seventh Generation*

- Expanding Act 100 Reporting to all chemicals entering Vermont
  Contact: Martin Wolf, mhw@seventhgeneration.com

p. 37 *Vermont Department of Health*

- Testing of private water for manmade chemicals
  Contact: David Englander, david.englander@vermont.gov

p. 39 Public Input from Nat Shambaugh, chemist contracted by the Lake Champlain Basin Program

- VAAFM homeowner pesticide usage proposal
  Contact: Nat Shambaugh, natsh@myfairpoint.net
- VDOH testing of private water supplies for manmade chemicals
  Contact: Nat Shambaugh, natsh@myfairpoint.net

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Home owner pesticide usage**
Author(s): **Cary Giguere**

Introduction:
The Vermont Agency of Agriculture currently tracks commercial use and sales of pesticides but does not capture sales to home owners. It would be useful to create a more complete usage tracking system in Vermont that captures what homeowners are purchasing and applying to facilitate regulatory decision making as well as providing information to the general public.

Problem Definition:

Very little is known about homeowner use of pesticides.

Critique of Current Policy:
Current policy only captures pesticides sold to and used by commercial licensed applicators. Current policy captures information down to the county level.

Policy Recommendation:

- Expand the pesticide use reporting beyond commercial applications. Capturing sales to consumers at the point of sale. Will not provide information completely to town level usage but will give us a better idea of homeowner usage in Vermont. This is a gap in our regulatory program with regard to capturing usages.
- We capture usage by EPA registration # and not by CAS#. We have found over the years the CAS# system is not sufficiently robust enough for our regulatory purposes.
- Also keeping the pesticide piece out of the proposed system avoids the duplicity.

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: Expansion of Reporting Requirements and Creation of a Comprehensive Chemical Database

Author(s): Agency of Natural Resources

Introduction:

A significant number of chemicals are manufactured, imported, transported, used and disposed of daily in Vermont. One of the major problems identified by the Act 154 Working Group is a lack of data with respect to toxicity information and chemical use (volume and location) in Vermont. The State does not have a baseline understanding of all chemicals in use in the State. Without this information, it is challenging for the State to respond to emergencies and threats posed by chemicals of emerging concern, and review and assess which chemicals the State should regulate. Further, there is currently no electronic database that provides resources and chemical use data in an easy-to-digest format for Vermont business, agencies, and public.

The Agency proposes to build upon the existing legal framework to expand chemical reporting requirements to include a broader suite of chemicals, including chemicals of emerging concern and other unregulated chemicals that have been detected in Vermont's environment; and, to create an easy-to-use electronic database (or expand an existing database) that would facilitate industry reporting and assistance, provide data for agencies to review and use to inform prioritization of limited resources to address harmful chemicals, and provide data and guidance for the public about chemicals in their community.

Problem Definition:

There are over 109 million substances registered with the Chemical Abstract Service (CAS). Of these, approximately 85,000 chemicals have been approved for use under the Toxic Substances Control Act (TSCA). These 85,000 chemicals do not include insecticides, herbicides, rodenticides, pharmaceuticals, food additives, cosmetics, munitions, nuclear material, gases, and complex mixtures. These substances enter the air, groundwater, soils, and surface water in Vermont and may pose a threat to human health and the environment, yet for the vast majority the State has little information about toxicity and use in Vermont.

Although many of these substances are regulated in some way, those regulations vary dramatically in terms of meaningful protection of human health and the environment. For example, the majority of chemicals are not subject to rigorous testing prior to being introduced into the marketplace, and potential threats to human health and the environment are not known. In other cases, chemicals are not subject to reporting and management requirements.

The result of current regulatory framework is that the State does not have complete baseline information about chemical use (i.e. volume, location, and toxicity) in the State. This information is critical for the State to be able to effectively respond to emergencies and threats

posed by chemicals of emerging concern, including prioritizing limited resources to address those chemicals that pose the greatest risk to Vermonters.

Critique of Current Policy:

Of the tens—if not hundreds—of thousands of chemicals in use today, only a fraction is subject to EPCRA and state reporting requirements. Organizations and businesses managing hazardous chemicals above certain quantities are required to submit Emergency and Hazardous Chemical Inventory Forms annually to the State to help agencies plan for and respond to chemical emergencies. The program includes substances which have been determined to be hazardous, but generally does not capture all substances that may pose a risk to human health and the environment. Other regulatory programs also only require reporting for a small fraction of chemicals that are in use or released into the environment.

Policy Recommendation:

Building upon existing chemical reporting requirements to create baseline information about chemical use in Vermont will:

- provide businesses with better information about chemical use so that business may voluntarily explore opportunities to reduce chemical use;
- better prepare agencies to respond to emergencies involving chemicals;
- better prepare agencies to respond to chemicals of emerging concern and other unregulated chemicals that have been detected in Vermont's environment;
- help prioritize agency resources to address chemicals that pose a threat to Vermonters;
- help prioritize agency and other resources for health and environmental testing; and
- inform the public about chemical use in Vermont.

In order to achieve these goals, the Agency proposes the following:

(1) Expand existing chemical reporting requirements to broaden the scope of chemicals/mixtures, including chemicals of emerging concern and other unregulated chemicals that have been detected in Vermont's environment.

Major issues for discussion:
(a) Identification of additional chemicals/mixtures that would trigger reporting requirements
(b) Setting an appropriate threshold for reporting is key both in terms of quantity of substance, and size and type of business
(c) Integration with existing EPCRA and state reporting process

(2) Phase I would be to create an easy-to-use electronic database (or expand an existing database) for: industry reporting; industry assistance (i.e. information regarding reporting requirements and other regulatory requirements by chemical similar to CHEMLIST database); agency review and prioritization; and public information (i.e. data and guidebook similar to EPA's Chemicals in Your Community). Phase II could incorporate other required environmental reporting (i.e. similar to EPA Envirofacts).

Major issues for discussion:

(a) Resources

(b) Integration with existing databases (Tier2Submit, other?)

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: EPCRA Policy Recommendations
Author(s): Division of Emergency Management & Homeland Security

Problem Definition & Critique of Current Policy:

(a) Chemicals stored in consumer packaging (such as batteries, road salt, or other common products at retail stores and hardware stores) are not required to be reported upon through Tier II. This is clearly seen as one of the largest gaps of EPCRA because this includes some of the largest warehousing of chemicals in Vermont.

(b) Chemicals that are in transit through Vermont aren't reportable. For example, rail traffic coming from Canada through Vermont, with a destination in Massachusetts is completely invisible to first responders, DEMHS, and the State HAZMAT Team therefore pre-incident emergency planning is non-existent.

Policy Recommendation:

(a) The SERC could decide that hardware/retail stores are no longer exempt from reporting quantities of chemicals in consumer packaging.

(b) Ensure the rail industry, AOT Rail, air carriers, and chemicals entering VT ports of entry from Canada are reported.

Act 154 Working group on toxic chemical use in the sate

Policy recommendation

Author: Ian Balcolm, Ph.D., Assistant Professor, Lyndon State College

Recommendations:

1. Formation of an Office of Chemical Hazards Assessment (OCHA) to:
    a. Identify state and federal laws related to chemical safety and toxic substances, with the intent to streamline the regulatory and reporting processes within the state
    b. Develop and maintain list of chemicals of concern
    c. Evaluate hazards resulting from the use of chemical of concern
    d. Identify strategies to prevent harm resulting from the use of chemicals of concern
    e. Require manufacturers using chemicals of concern to register with OCHA
    f. Require manufacturers using chemicals of concern to manage the product at the end of its useful life, including recycling or responsible disposal, as prescribed by OCHA
    g. Require manufacturers using chemicals of concern to provide alternatives assessments identifying strategies to eliminate their use
        i. OCHA can presume that a safer alternative is available if the product containing the chemical of concern has been banned by another state or is an item of apparel or a novelty
    h. Require retailers to eliminate products containing chemicals of concern
    i. Convene science advisory panel to advise OCHA on candidate chemicals of concern
        i. The science advisory panel will consist of members with expertise in:
            1. Toxicology
            2. Environmental Law
            3. Pollution prevention
            4. Environmental health
            5. Public health
            6. Risk analysis
            7. Maternal and child health care
            8. Public policy

Identification of chemicals of concern:

OCHA may designate a chemical of high concern as a chemical of concern if it finds, in concurrence with the Department of Health or Department of Environmental Conservation that any of the following conditions are satisfied:

1. The chemical has been found through biomonitoring to be present in human blood, including umbilical cord blood, breast milk, urine or other bodily tissues or fluids;

2. The chemical has been found through sampling and analysis to be present in household dust, indoor air or drinking water or elsewhere in the home environment;
3. The chemical is present in a consumer product used or present in the home
4. The chemical is a known or suspected carcinogen, reproductive or developmental toxicant or endocrine disruptor;
5. The chemical is known or suspected to be persistent, bioaccumulative and toxic; or very persistent and very bioaccumulative
6. The chemical has been found through monitoring to be present in fish, wildlife, or the natural environment
7. Listed by the Interstate Chemical Clearinghouse as a chemical of concern

In addition to evaluating known or suspected toxicological effects, when evaluating candidate chemicals of concern consideration must be given to:

1. Product function or performance
2. Useful life
3. Materials and resource consumption
4. Water conservation
5. Water quality impacts
6. Air Emissions
7. Production, in-use, and transportation energy inputs
8. Energy efficiency
9. Greenhouse gas emissions
10. Waste and end-of-life disposal
11. Public health impacts, including potential impacts to sensitive subpopulations, including infants and children
12. Impacts to threatened or endangered species
13. Environmental impacts
14. Economic effects

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: Institute a Certified Planner Requirement Under Act 100, and Improve Technical Assistance Available to Companies in Vermont.
Author(s): VPIRG, VNRC, VCV

Introduction: Vermont's Toxics Use Reduction Act (Act 100) has been effective at helping reduce the use of hazardous waste and toxic chemicals, but the program could be expanded to help address a number of the gaps identified by the Working Group. Four of the gaps identified by the Working Group are the lack of technical assistance, lack of planning best practices, lack of assistance to help avoid or limit chemical use, and lack of industry knowledge about their own chemical use. Vermont and Massachusetts have similar toxics use reduction laws in place, but Massachusetts has created a more robust infrastructure to support their program and assist reporting companies to develop stronger toxics use reduction plans. Massachusetts' toxics use reduction program offers best practices that could help prevent Vermonters' exposure to toxic chemicals and address these identified gaps in our toxics use reduction program.

Vermont should provide an increased level of technical assistance to companies, and ensure planning professionals are involved in the deployment of plans submitted under Act 100. With greater technical support and input from planning professionals, companies will be able to develop stronger plans that will reduce the use of toxic chemicals and hazardous substances.

Problem Definition: The Working Group identified a lack of technical assistance, lack of planning best practices, lack of assistance to help avoid or limit chemical use, and lack of industry knowledge about their own chemical use as gaps that should be addressed. The chemicals and hazardous materials that trigger reporting under Act 100 are known to have negative impacts on human health and the environment. Without improved support and planning we will not be as effective at reducing the use of toxic chemicals and hazardous waste.

Critique of Current Policy: Act 100 has helped significantly reduce the use of toxic chemicals and hazardous materials in Vermont, but our program could be expanded in order to provide greater support for reporting companies and help create stronger toxics use reduction plans. Our current toxics use reduction program does not offer significant up front planning assistance for companies that are required to file under Act 100. In Massachusetts their toxics use reduction program requires certified planners to sign off on all toxics use reduction plans to ensure they are meeting best practices. They also offer companies significant support through their Office of Technical Assistance (OTA). Officials in Massachusetts expressed the belief that requiring the involvement of certified planners in plan development, and offering technical assistance are two facets of their program that significantly improve the quality of toxics reduction plans, leading to decreased use of dangerous substances.

Policy Recommendation: Vermont and Massachusetts have similar toxics use reduction laws, but Massachusetts has created a more robust infrastructure to support their program and assist reporting companies to develop stronger toxics use reduction plans. Two significant differences

in these programs are the requirement that planners certified by the state sign off on plans before submission, and the level of assistance offered to companies through the Massachusetts Office of Technical Assistance (OTA). Vermont should require certified planners to sign off on all toxics use reduction plans, and offer more robust technical assistance through the Office of Environmental Assistance (OEA) to help reduce to the use of toxic chemicals and hazardous waste.

In Massachusetts every plan submitted under their Toxics Use Reduction Act must be approved and signed by a Massachusetts Department of Environmental Protection certified planner. These planners are required to pass a standardized examination and maintain a license by completing continuing education courses.[1] There are two different types of certified planners in Massachusetts. General Practice Planners that can act as consultants to multiple clients, assisting them with plan development and certification, and Limited Practice Planners that can certify plans only for the organizations that employ them. These planners play a different role from Vermont's OEA because they work in the preparation of the original plan, as opposed to reviewing the plan after submission. Program officials in Massachusetts see initial input on plan preparation as a valuable aspect of their program that helps produce higher quality plans.

Another way that Massachusetts helps reduce the use of toxic chemicals and hazardous waste is by offering significant planning support thorough their OTA. OTA offers free and confidential services to companies interested in reducing their use of toxic chemicals and hazardous waste. These services are available to companies required to file under the Toxics Use Reduction Act, as well as companies that are not required to file. OTA employees provide on-site technical assistance and evaluation of a company's processes, and prepare reports outlining steps that could be taken to reduce the use of toxic chemicals and hazardous waste.

The OTA has seven employees that support approximately 500 facilities. Vermont could use increased fees on reporting companies to hire dedicated employees in our OEA that would provide similar services and help companies reduce their use of toxic chemicals and hazardous waste. Approximately 60 companies currently report under Act 100, meaning we could likely offer a similar level of service with 2 full time employees dedicated to offering technical assistance.

Title: Expand the List of Substances that Trigger Reporting Under Act 100.
Author(s): VPIRG, VNRC, VCV

Introduction: Vermont's Toxics Use Reduction Act (Act 100) requires users of large quantities of hazardous materials and toxic chemicals to prepare and submit toxics use reduction plans, and report to the state on their progress reducing chemical usage. This program provides a valuable tool to reduce the use of dangerous substances, but it could be updated to address the lack of an inventory of chemicals used in Vermont, the lack of regulatory incentives for identifying safer alternatives, and to help reduce to the use of these substances.

[1] Massachusetts Executive Office of Energy and Environmental Affairs, *About Toxics Use Reduction (TUR) Planners*. http://www.mass.gov/eea/agencies/massdep/toxics/tur/about-toxics-use-reduction-tur-planners.html

Vermont's list of chemicals that trigger reporting was established by statute in 1991 and has not been updated since. Massachusetts has a similar and more comprehensive toxics use reduction program with a larger list of chemicals that trigger reporting, as well as lower reporting thresholds for substances that pose greater dangers. Other states have also done considerable work developing comprehensive lists of chemicals that pose a danger to humans and the environment. If Vermont were to expand the Act 100 reporting list, and lower reporting thresholds, we could help develop a better understanding of the toxic substances used in the state, create regulatory incentives to identify safer alternatives, and ultimately reduce toxics usage in the state.

Problem Definition: The Working Group found that under our current regulatory structure there is a lack of an understanding of chemicals used in Vermont, and inadequate regulatory incentives to transition to safer alternatives. Requiring companies to account for the hazardous and toxic substances they use, and plan on how they can reduce them will lead to greater awareness of these substances. The planning process also helps reporting companies identify ways that they could benefit from reducing their liabilities and improving their manufacturing processes.

Many companies will inevitably focus their planning efforts on chemicals that trigger reporting. A more limited chemical list can narrow the focus of reporting companies to a smaller subset of chemicals, even though many other chemicals of concern have been identified in other jurisdictions. Further, lower reporting thresholds for more dangerous substances provide an incentive for companies to focus on reducing their use.

Critique of Current Policy: Vermont's current list of chemicals that trigger reporting was established by statute in 1991 and has not been updated since. Massachusetts has a similar and more comprehensive toxics use reduction program with a larger list of chemicals that trigger reporting, as well as lower reporting thresholds for substances that pose greater dangers. Other states have also done considerable work developing comprehensive lists of chemicals that pose a danger to humans and the environment. If Vermont were to expand the Act 100 reporting list and lower reporting thresholds we could help reduce toxics usage, develop a better understanding of the toxic substances used in the state, and create regulatory incentives to identify safer alternatives.

Policy Recommendation: Vermont and Massachusetts draw their list of toxic chemicals that trigger planning and reporting under their toxic use reduction acts from Title III, Section 313 of the Emergency Planning and Community Right to Know Act.[2] Massachusetts additionally requires reporting of chemicals listed under the Comprehensive Environmental Response, Compensation, and Liability Act.[3] Massachusetts Toxics Use Reduction Act chemical list should

---

[2] Vermont Department of Environmental Conservation, *Vermont's pollution Prevention Planning Law*. http://dec.vermont.gov/environmental-assistance/pollution-prevention/plans, Massachusetts Executive Office of Energy and Environmental Affairs, *Massachusetts Toxics Use Reduction Act- Current Chemical List*, http://www.mass.gov/eea/docs/dep/toxics/approvals/chemlist.pdf

[3] Massachusetts Executive Office of Energy and Environmental Affairs, *Massachusetts Toxics Use Reduction Act-Current Chemical List*, http://www.mass.gov/eea/docs/dep/toxics/approvals/chemlist.pdf, Massachusetts Executive Office of Energy and Environmental Affairs, *About TURA Reporting and Fees.* http://www.mass.gov/eea/agencies/massdep/toxics/tur/about-tura-reporting-and-fees.html

be adopted under Vermont's Act 100. This list is more expansive than the current list in Act 100, and draws primarily from determinations made by the federal government.

Massachusetts also has lower reporting thresholds for companies that use persistent bioaccumulative toxics (PBTs), but Vermont does not. We should adopt Massachusetts reporting thresholds for PBTs as a starting point, and then allow the Secretary of the Agency of Natural Resources to lower reporting requirements for any chemical on the current reporting list via rule.[4] Massachusetts uses the EPA reporting thresholds, which is a standard that Vermont should adopt to maintain consistency with the federal government and in the region.[5] Lowering thresholds for PBTs will likely expand the universe of companies required to file under Act 100, and help create a more comprehensive inventory of chemicals used in the state, and incentives to transition to safer alternatives.

Next, we should also expand the list of chemicals covered by Act 100 to include the chemicals of high concern list under Act 188. Incorporating this list in Act 100 would require Vermont manufactures who are large users of toxic chemicals and produce children's products to report under both Act 100 and Act 188, and to plan for how they can reduce their use of toxic chemicals.

Finally, a more comprehensive candidate list that should be adopted under Act 100 would be the Initial Candidate Chemical List prepared by California's Consumer Safe Products Program.[6] This list was created by identifying Candidate Chemicals that are found on both the Hazard Trait Lists and Exposure Potential Lists created by statute. These lists of lists are put together by examining a comprehensive list of lists that identifies harmful chemicals. The Consumer Safe Products Program made initial determinations on priority products for regulation by examining products that contain chemicals found on the Initial Candidate Chemical List.[7] By drawing from chemicals found on the Initial Candidate Chemical List we will be able to build off substantial work done in other jurisdictions, as well as prioritize chemicals that pose greater danger to the public.

Expanding this list of chemicals that trigger reporting under Act 100 would address a number of the gaps identified by the Working Group, including creating a more comprehensive inventory of chemicals used in the state, creating incentives to transition to safer alternatives, and reducing the use of toxic chemicals and hazardous materials.

Title: Ban the Use of Poly and Perfluoroalkyl Substances (PFASs) From Food Contact Substances and Dental Floss.
Author(s): VPIRG, VNRC, VCV

---

[4] Massachusetts Executive Office of Energy and Environmental Affairs, *Massachusetts Toxics Use Reduction Act-Current Chemical List.* http://www.mass.gov/eea/docs/dep/toxics/approvals/chemlist.pdf
[5] US Environmental Protection Agency, *Summary of the Emergency Planning & Community Right-to-Know Act.* https://www.epa.gov/laws-regulations/summary-emergency-planning-community-right-know-act
[6] "ARCHIVE INITIAL CANDIDATE CHEMICALS LIST- December 11, 2014" http://www.dtsc.ca.gov/SCP/upload/12-11-14_Candidate-Chemicals-List_initial_archive-2.xlsx
[7] California Department of Toxics Substance Control, *What is the Candidate Chemicals List?* http://www.dtsc.ca.gov/SCP/CandidateChemicalsList.cfm

Introduction: Studies have shown that some PFASs disrupt normal endocrine activity; reduce immune function; cause adverse effects on multiple organs, including the liver and pancreas; and cause developmental problems in rodent offspring exposed in the womb.[8] Further, a panel convened to examine the impacts of long chain PFASs found probable links between these chemicals and 55 diseases, including 21 types of cancer.[9]

The Working Group identified a number of gaps that would be addressed by banning the use of PFASs from consumer products that are likely to increase oral exposure to these chemicals. These actions would embody a precautionary approach to protect Vermonters from chemicals that have a high potential to be dangerous to people and the environment. It would also allow the state to offer more protection than the federal government in an area of regulation excluded from TSCA.

PFASs are used to coat many products such as dental floss, microwave popcorn bags, cookware, and pizza boxes**.**[10] Recently the FDA has banned the use of three specific PFASs in food contact substances, and major chemical manufacturers agreed to phase out the production of PFOA and PFOS in the US by 2015.[11] These actions have led industry to substitute shorter chain PFASs for traditional longer chain PFASs in many of their products, and driven production of chemicals like PFOA and PFOS to places like China.[12] The shorter chain chemicals are intended to be less bioaccumulative, but many scientists believe they present the same dangers exhibited by longer chain PFASs.[13]

To address this issue the State of Vermont should ban PFASs from dental floss and food contact substances sold in the State. These actions would reduce Vermonters' exposure to potentially dangerous chemicals, and create incentives to transition to safer alternatives.

Problem Definition: PFASs such as PFOA and PFOS have been linked to a number of damaging health effects,[14] but as companies reduce their use of these chemicals they are being replaced with chemicals that share many of the same characteristics and have not been adequately tested for their safety.[15] Every day Vermonters are being exposed to potentially dangerous PFASs from numerous substances in consumer products that increase the likelihood of oral exposure, such as dental floss and food contact substances.

---

[8] National Institute of Environmental Health and Sciences, *Perfluorinated Chemicals (PFCs)* https://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf

[9] *Poisoned Legacy: Ten Years Later, chemical safety and justice for DuPont's Teflon victims remain elusive*. David Andrews and Bill Walker. Environmental Working Group April 2015. http://static.ewg.org/reports/2015/poisoned_legacy/Poisoned_Legacy.pdf?_ga=1.266380679.868286109.1469477768 p. 11

[10] 9at p. 9

[11] Environmental Working Group. F*DA Bans Three Toxic Chemicals From Food Wrapping – Too Little, Too Late* http://www.ewg.org/release/fda-bans-three-toxic-chemicals-food-wrapping-too-little-too-late, See 10 at p. 13

[12] The Intercept, *Under DuPont Bridge: The Teflon Toxin Goes to China*. Sharon Lerner, September 15 2016 https://theintercept.com/2016/09/15/the-teflon-toxin-goes-to-china/

[13] Environmental Health Perspectives, The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs) http://ehp.niehs.nih.gov/1509934/

[14] See 12

[15] See 12

The number one way that PFASs enter the body is through ingestion.[16] PFASs are used extensively in both food contact substances and dental floss for purposes such as grease proofing, and reduction of friction.[17] These uses of PFASs, especially in dental floss, can lead to oral exposure and ingestion. With greater oral exposure to these chemicals we are increasing the likelihood that we will see negative health impacts.

Critique of Current Policy: For new chemicals to be used in food contact substances manufacturers must submit a food contact notification to the FDA for review.[18] Manufacturers are required to submit toxicity data and a discussion of potential carcinogenicity for each chemical to which consumers may be exposed.[19] If there is a "reasonable certainty in the minds of competent scientist that substance is not harmful under the intended uses" the product will be allowed to be marketed.[20] The major flaw with this existing policy is that there is not sufficient scientific data on the wide array of PFOA and PFOS substitutes to determine their safety.[21]

Dental floss is classified as a class 1 medical device under the Food Drug and Cosmetic Act (FDCA). Under the FDCA, dental floss is not subject to a pre-market review unless it meets one of the criteria laid out in 21 CFR 872.9, none of which refer to evaluations of toxicity.[22] This has allowed the use of PFASs in dental floss with minimal, if any, review of the toxicity of the materials used to create the product.

Recently the FDA has banned the use of three specific PFASs in food contact substances, and major chemical manufacturers agreed to phase out the use of PFOA and PFOS in the US by 2015.[23] The time it has taken to enact any restrictions in the face of rising scientific evidence shows that the regulatory structure is insufficient to protect public health and identify threats from the wide array of chemicals used to replace PFOA and PFOS. Further, PFOA and PFOS have not been banned in the United States meaning these chemicals could still be present in products made by manufacturers who have not agreed to a voluntary phase out of their use, and in imported products. As we develop a better understanding of the safety of these chemicals we should take a precautionary approach and eliminate their uses in products that are likely to result in oral exposure, and can be regulated without being preempted by future EPA actions.

---

[16] Haug LS, Huber S, Becher G, Thomsen C. 2011. *Characterisation of human exposure pathways to perfluorinated compounds — Comparing exposure estimates with biomarkers of exposure*. Environment International. Volume 37, Issue 4. Pages 687-693.

[17] U.S. Environmental Protection Agency, Office of Research and Development National Risk Management Research Laboratory. *Perfluorocarboxylic Acid Content in 116 Articles of Commerce.* Zhishi Guo, Xiaoyu Liu, and Kenneth A. Krebs. http://www.oecd.org/env/48125746.pdf p8,35,37

[18] 21 CFR 174.5 (d)(5)

[19] US Food and Drug Administration, *Regulatory Report: Assessing the Safety of Food Contact Substances* http://www.fda.gov/Food/IngredientsPackagingLabeling/PackagingFCS/ucm064166.htm

[20] 21 CFR §170.3 (i)

[21] Environmental Working Group, *Credibility Gap: Toxic Chemicals in Food Packaging.* http://www.ewg.org/research/credibility-gap-toxic-chemicals-food-packaging-and-duponts-greenwashing , Environmental Health Perspectives, *The Madrid Statement on Poly- and Perfluoroalkyl Substances (PFASs)* http://ehp.niehs.nih.gov/1509934/

[22] 21 CFR §872.9

[23] Environmental Working Group, *FDA Bans Three Toxic Chemicals From Food Wrapping – Too Little, Too Late* http://www.ewg.org/release/fda-bans-three-toxic-chemicals-food-wrapping-too-little-too-late,

Policy Recommendation: We can more effectively protect Vermonters and the environment by reducing exposure to PFASs in products that can easily lead to ingestion. To achieve this goal the State of Vermont should ban the use of PFASs from food contact substances and dental floss.

PFASs are used in a number of food contact substances such as microwave popcorn, pizza boxes, cookware, and food wrappers that expose Vermonters to these chemicals on a daily basis.[24] They are also used to coat the dental floss that Vermonters use to clean their teeth.[25] Banning the use of PFASs in food contact substances and dental floss would help reduce Vermonters exposure to PFASs from ingestion, and help drive the market away from the use of PFASs in these products. A ban with meaningful penalties for non-compliance could have a major impact on Vermonters exposure to PFASs, and help create a market for safer alternatives that can achieve similar results without the use of harmful chemicals.[26]

State regulation of food contact substances and dental floss would not be subject to preemption by EPA action under TSCA. Food contact substances and dental floss are both regulated under the FDCA, which is exempted from TSCA regulation.[27] This presents state regulators with the opportunity to ban the use of these chemicals from food contact substances and dental floss in order to protect Vermonters from exposure.

Under proposed legislation food contact substances and dental floss would be defined based on their current dentitions in the FDCA. Food contact substances would be defined as "any substance intended for use as a component of materials used in manufacturing, packaging, transporting, or holding food if such use is not intended to have any technical effect on the food".[28] Dental floss would be defined as "a string-like device made of cotton or other fibers intended to remove plaque and food particles from between the teeth to reduce tooth decay".[29]

The legislation should prohibit the manufacture, sale, or distribution in commerce of any food contact substance, or dental floss that contains 0.35 micrograms of fluorine per square decimeter starting July 1st 2019. This language is derived from the Danish Ministry of Environment and Foods' recommended limit for the content of organic fluorine in food contact substances.[30] The legislation should also prohibit the substitution with carcinogens rated by the United States Environmental Protection Agency as A, B, or C carcinogens, or substances listed as known or likely carcinogens, known to be human carcinogens, likely to be human carcinogens, or suggestive of being human carcinogens, as described in the United States Environmental

---

[24]*Poisoned Legacy: Ten Years Later, chemical safety and justice for DuPont's Teflon victims remain elusive*. David Andrews and Bill Walker. Environmental Working Group April 2015. http://static.ewg.org/reports/2015/poisoned_legacy/Poisoned_Legacy.pdf?_ga=1.266380679.868286109.1469477768 p. 11 p. 17

[25] See 9

[26]Environmental Health News, *What's poppin' in Denmark? Popcorn with safer packaging.* http://www.environmentalhealthnews.org/ehs/news/2015/oct/denmark-chemicals-fluorinated-popcorn-solution-endocrine-disruptor

[27] 15 USC § 2602 (1)(B)(vi), 21 USC § 321 (s), 15 USC § 2602 (1)(B)(vi), 21 USC § 321 (h)

[28] 21 CFR §409(h)(6)

[29] 21 CFR § 872.6390 http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=872.6390

[30]Danish Ministry of Environment and Food, *Fluorinated substances in paper and board food contact materials* https://www.foedevarestyrelsen.dk/english/SiteCollectionDocuments/Kemi%20og%20foedevarekvalitet/UK-Fact-sheet-fluorinated-substances.pdf

Protection Agency's "List of Chemicals Evaluated for Carcinogenic Potential,". Further, it should prohibit replacing fluorinated compounds with reproductive toxicants that cause birth defects, reproductive harm, or developmental harm as identified by the United States Environmental Protection Agency.

Title: Make it Easier to Restrict and Label Chemicals of High Concern in Children's Products.
Author(s): VPIRG, VNRC, VCV

Introduction: The Toxic Free Families Act of 2014 (Act 188) created comprehensive reporting on the use of chemicals of high concern in children's products, and mechanisms to restrict and regulate the use of those chemicals in the state. Improving the ability of the Commissioner of the Department of Health (DOH) to take action to restrict the use of chemicals, and require labeling of products containing dangerous chemicals would address the insufficient labeling of chemicals in products, as well as reduce Vermonters' exposure to these chemicals.

Under Act 188, the Commissioner of the DOH can act to restrict the use of chemicals of concern in children's products, but only after receiving a recommendation from the Act 188 Working Group.[31] Act 188 also contains language that will make it difficult for the Commissioner to take action to restrict the use of a chemical, even when there is significant scientific evidence to support such an action. The state should change the role of the Act 188 Working Group to be advisory, and remove unnecessary hurdles to the Commissioner taking action to protect Vermonters' health.

Problem Definition: Our nation's broken regulatory structure allows the use of chemicals in consumer products without requiring the manufacturers to determine that the chemicals used in the products will be safe. Federal reforms will incrementally improve our regulatory process over time, but this will still be insufficient to address the threat posed to consumers, especially vulnerable populations like children. The public also has significantly less information about the chemicals used in consumer products than manufacturers, making it difficult for Vermont families to avoid dangerous chemicals.

Critique of Current Policy: Under Vermont's Act 188, the Commissioner of the DOH can act to require labeling, or restrict the use of chemicals of concern in children's products, but only after receiving a recommendation from the Act 188 Working Group.[32] Act 188 also contains language that will make it difficult for the Commissioner to take action to regulate chemicals, even when there is significant scientific evidence to support such an action. The current process in Act 188 presents unnecessary hurdles to enacting regulation that would protect vulnerable populations form dangerous chemicals.

Policy Recommendation: We should change the Working Group's role to be advisory, bringing the Group's function in line with the vast majority of Working Groups under the Agency of Human Services.[33] This change could be accomplished by striking "upon the recommendation

[31] 18 V.S.A. §1776 (d)(1)
[32] See 31
[33] 3 V.S.A §3003, Chapter 53 Human Services: **Advisory capacity** (a) All boards and commissions which under this chapter are a part of

of" in 18 V.S.A. §1776 (d)(1) and inserting the words "after consultation with." Along with a modification of the Working Group's role, there are four other fixes that would make it easier to protect vulnerable populations from exposure to toxic chemicals.

The first change would be to eliminate the words "degree of" from 18 V.S.A. §1774 (d)(1) and "weight of" from 18 V.S.A. §1774 (b). The practical effect of these changes would be to reduce the burden on the DOH as they determine when and how to move forward with efforts to protect children from toxic chemicals. Similar language to what is currently in statute has been used at the federal level to stall action by EPA on toxic chemicals. Industry groups have used this language to argue that new evidence is coming out soon, or has come out since a draft decision was issued, and action should be put on hold. This tactic has been used effectively by regulated industries to delay action for years. Further, both phrases could be used to challenge any decisions by the Commissioner and Working Group, and could lead to litigation and legal battles over whether these burdens of proof were met.

Further, we should change the wording "will be exposed to" to "potential for exposure" of toxic chemicals in children's products in 18 V.S.A. §1776 (d)(1)(A) and 18 V.S.A. §1776 (d)(2). The available scientific data on toxic chemicals in consumer products makes it very difficult to definitively demonstrate a specific exposure of a specific child to a specific chemical in a particular product. Typically public health programs look for potential or threatened exposures rather than relying on showings of actual exposure. The amended language makes this law more in line with similar legislation elsewhere. The chemicals on Vermont's list of chemicals of high concern to children have already gone through a battery of screenings that show they cause health impacts like cancer, neurological damage, and infertility. The listed chemicals also must be found through biomonitoring studies to be in people's bodies, air/dust, or in wildlife – so we know they are leaching out of products and people are being exposed to them.

Next, we should change the burdensome demonstration of a "probability" that exposure to a chemical of concern cause or contributes to an "adverse health impact" in §1776 (d)(1)(B) to instead require a demonstration that a safer alternative to the chemical exists. Requiring a finding that there is a "probability" that exposure to a toxic chemical could "cause or contribute to" disease will be extremely difficult for the Department or Working Group to prove.

This high burden could lead to either inaction by the Department, or extensive litigation by affected stakeholders. The word probability is a very distinct legal concept that means greater than 51%, or more likely than not. This standard is largely unprecedented in regulatory frameworks. Regarding safer alternatives, there is a wealth of knowledge and work available for the Department to tap into in order to make this process workable. For example, the Interstate Chemicals Clearinghouse maintains a database of available safer alternative assessments. We fully expect the Working Group would consider the technical and economic feasibility of those alternatives when determining if and how to move forward with regulating a chemical of high concern to children.

---

or are attached to the agency shall be advisory only, except as hereinafter provided, and the powers and duties of the boards and commissions, including administrative, policy making and regulatory functions, shall vest in and be exercised by the secretary of the agency.

Finally, if we want to reduce exposure to vulnerable populations we should adopt language from Oregon's Toxic Free Kids Act that requires an automatic phase out of chemicals of high concern from specific categories of children's products after they have been reported three times.[34] The categories covered by Oregon's law are products that are mountable, children's cosmetics and products that are marketed to children under the age of three.[35]

Title: Expand Act 188 to Cover all Consumer Products, and Require Reporting of Product Name and Universal Product Code (UPC).
Author(s): VPIRG, VNRC, VCV

Introduction: There is a large gap between what product manufacturers know about what is in their products, and what the public at large knows. In many cases the current reporting regimes are too limited to provide a full picture of the chemicals the public are being exposed to. Act 188 helps to address this by requiring product level reporting about the use of chemicals of high concern in children's products. This provides valuable information to consumers about the products they may consider buying. Companies reporting under Act 188 are required to provide a plain language description of the product model, the model's UPC, or both. Reporting requirements are limited to products intended to be used by children under twelve. Beyond these limitations, there are also further exemptions to reporting for specific categories of products, even if they are marketed to children under twelve. These policies provide consumers a limited understanding of the use of chemicals of high concern in consumer products. Refining the reporting requirements could create opportunities to better inform consumers about products that are being reported under Act 188.

Act 188 should be updated to phase in reporting for all consumer products, and the reporting requirements should be clarified in statute to require the plain language name of the product model as well as the product's UPC. These updates will give consumers a more comprehensive picture of the use of chemicals in commercial products, as well as increase their ability to identify these products when making purchasing decisions.

Problem Definition: There is a large gap between what product manufacturers know about what is in their products and what the public at large knows. In many cases the current reporting regimes we have in place are too limited to provide a full picture of the chemicals the public are being exposed to. This problem is derived in part from the fact that there are few requirements for manufacturers of consumer products to inform the public about the substances they use. The public needs more tools to help them make decisions about the products that they buy based off of their potential exposure to harmful chemicals.

Critique of Current Policy: Despite the valuable information gained from Act 188, the law's scope is limited and should be expanded to provide Vermonters with a greater understanding of the presence of chemicals of concern in their daily lives. The Act's reporting requirements are limited to products intended to be used by children under twelve. Beyond these limitations, there

[34] Oregon legislative Assembly, 2015 Regular Session, Senate Bill 478 §5(1) https://olis.leg.state.or.us/liz/2015R1/Downloads/MeasureDocument/SB478
[35] Oregon legislative Assembly, 2015 Regular Session, Senate Bill 478 §5(1)(a)-(c) https://olis.leg.state.or.us/liz/2015R1/Downloads/MeasureDocument/SB478

are also further exemptions to reporting for specific categories of products even if they are marketed to children under twelve. These policies provide consumers a limited understanding of the use of chemicals of concern in products used by the general public. Refining the reporting requirements could also create opportunities to better inform consumers about products that are currently being reported under Act 188.

Act 188 helps to better inform the public by building off of existing programs in other states, and requiring unprecedented product level reporting about the use of chemicals of concern in children's products. The required reporting under Act 188 provides valuable information to consumers about the products they may consider buying. The legislative language of Act 188 does not clearly indicate exactly what information is required to identify specific products, but these requirements have been clarified by the DOH through guidance documents. Companies reporting under Act 188 are required to provide a plain language description of the product model, the model's UPC, or both.[36]The Department has ensured that consumers get valuable information, and we should take this opportunity to make sure that these decisions are maintained as the program moves forward.

Policy Recommendation: Act 188 should be revised to phase in a reporting requirement for chemicals of concern in all consumer products, and require that manufacturers report both the product models plain language description and UPC. When the Toxic Free Families Act (now Act 188) passed the Vermont Senate it required disclosure from manufacturers of all consumer products when their products contain any of the identified chemicals of high concern. [37] In order to better inform Vermonters about the presence of chemicals of high concern in we should expand the scope of the reporting requirements in Act 188 to cover all consumer products.

We recommend striking the current language of 18 V.S.A. §1775(a) and inserting "No later than one year after a chemical is placed on the list of chemicals of high concern under section 1773 of this title, and biennially thereafter, a manufacturer of a consumer product shall submit to the Department the notice described in subsection (b) of this section if a chemical of high concern is used." Further, the statute should be amended by striking §1772(8)(h)-(j) that exempt consumer electronics and interactive software from the definition of consumer products. References to "children's product" should be replaced by the phrase "consumer product" throughout the statute, as well as replacing the term "chemicals of high concern to children" with the term "chemicals of high concern". Finally, the definitions for "child", "children's cosmetics", "children's jewelry" and "children's product" would be unnecessary and could be removed from the statute.

Act 188 could also be improved by ensuring consumers are provided information that allows them to make informed purchasing decisions. The DOH has begun to receive reports from manufacturers who use chemicals of concern in children's products, with all reports due by January 1st 2017. These initial reports led to clarified guidance from the DOH that requires manufacturers to report their product models by UPC, the name associated with that UPC, or

---

[36]Vermont Department of Health, *Chemical Disclosure Program Manufacturer Guidance*. October 2016. P.6 http://healthvermont.gov/enviro/chemical/documents/chemical_disclosure_program_manufacturer_guidance.pdf

[37] Vermont General Assembly, S.239 of 2014. http://legislature.vermont.gov/assets/Documents/2014/Docs/BILLS/S-0239/S-0239%20As%20Passed%20by%20the%20Senate%20(Unofficial).pdf

both.[38] We support this guidance and believe that it should be slightly expanded, and made explicit in statute. Specifically 18 V.S.A §1775(b)(2) should be updated to read "a description of the product or product component containing the chemical, including the description of the product model associated with the universal product code and the universal product code." This would allow consumers to look up products based on a natural language search, or through a UPC lookup database. These changes would also allow for the development of applications that would identify products reported to the state by scanning the barcode on consumer products. These changes would be a significant step toward honoring the public's right to know, and making it easier to inform the public about chemicals in products they are considering purchasing.

Title: Provide Greater Information to the Public About the Use of Toxic Chemicals and Hazardous Materials in Their Communities:
Author(s): VPIRG, VNRC, VCV

Introduction: There is a wide gap between what experts and industry officials know about the use of chemicals and what the public knows. There is also insufficient public access to chemical use related information that is reported. If there were more publicly available information about the presence of use of toxic chemicals and hazardous materials then citizens will have a greater ability to take steps to prevent exposure. The Agency of Natural Resources (ANR) currently retains significant data on the presence and use of toxic chemicals and hazardous materials, but there are inconsistencies in the ease with which the public can access this information. We should require greater transparency for data regarding the presence and use of dangerous substances in order to better inform the public. This could be accomplished in a number of ways including expanding the information available on the "ANR Atlas", providing greater access to data through the ANR website, and increased reporting to relevant legislative committees.

Problem Definition: There is a wide gap between what experts and industry officials know about the use of chemicals and what the public knows, as well as insufficient public access to chemical use related information that is reported. This lack of information leaves members of the public at a disadvantage when they are trying to limit their exposure to toxic chemicals.

Critique of Current Policy: The ANR currently retains significant data on the presence and use of toxic chemicals and hazardous materials, but there are inconsistencies with the ease with which the public can access this information. We should require greater transparency for data regarding the presence and use of toxic chemicals and hazardous materials in order to better inform the public.

Policy Recommendation: Companies that report under Act 100 are required to submit annual progress reports to the ANR and the Natural Resources Committees of the House and Senate. In practice companies now report to ANR and then ANR will provide a general report on reduction of hazardous materials and toxic chemicals to the legislature. We should require that ANR post

[38]See 36

all individual progress reports and plan summaries on their website, and submit all individual reports to the committees annually.

These reports should be used to help populate the ANR atlas with geo-locators for all companies that are required to report under the law. These identifiers should then link to the progress reports and plan summaries listed on the ANR website.

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Improve Citizens Right to Know, Assess & Address Risks of Contamination**

Author(s): **Vermont Natural Resources Council (VNRC), Vermont Conservation Voters (VCV) and Vermont Public Interest Group (VPIRG)**

Introduction:

There is a gap in Vermont laws and policies regarding how citizens are informed about the risks posed by toxic substances in their communities. The PFOA releases in North Bennington are clear examples of this gap. In North Bennington, we only found out that PFOA had contaminated private wells because one person tested their well after hearing about PFOA contamination in nearby Hoosic Falls, New York. There is clearly a gap in our laws that did not allow the people in North Bennington to learn about the risks associated with PFOA, assess if their water might be at risk of contamination and should be tested, and ultimately address the contamination of their water by PFOA. Our proposal addresses this gap in information and provides tools to address the risks associated with the presence of these substances in Vermont communities.

Problem Definition & Critique of Current Policy

With proper information, the citizens of North Bennington may have been able to prevent the contamination. At a minimum, they would have been able to identify and address the impacts much sooner. Because the people of North Bennington did not have adequate, timely information for years after the contamination occurred, some residents have suffered serious health impacts. While Vermont must strive to reduce the use of harmful chemicals, the reality is these chemicals exist and Vermonters require as much information as possible to be able to make informed decisions and take action to protect themselves from the harm these chemicals can cause.

Currently, there is reporting of the use of toxic substances and hazardous waste through Title 10, Chapter 159 and to the Vermont Department of Emergency Management (VDEM) pursuant to the federal Emergency Planning and Community Right to Know Act (EPCRA). In addition, the Vermont Department of Health (DOH) collects information about toxics. For example, Title 18, Chapter 38A, which addresses chemicals of high concern to children, requires the submission of information about chemicals of high concern to DOH. As you can see, information is collected by separate Departments, in different formats, on different uses, and on different chemicals. None of these entities is providing the public with readily accessible information on the toxic substances and hazardous waste that might be contaminating the air, water, soil, or products in Vermonters homes.

Fundamentally, there is a lack of easily accessible comprehensive information that would allow Vermonters to evaluate the risks associated with the presence of harmful chemical in their communities. For example, information on the proximity of chemicals to groundwater, private wells, facilities that serve vulnerable populations such as children or the elderly, surface water, wetlands, and other natural resources would allow Vermonters to assess and respond to the risks of contamination in their communities.

Policy Recommendation

To address the gap in Vermont law described above, we propose the following:

- Consolidate the reporting of information about toxic substances, hazardous waste, and/or chemicals of concern within the Vermont Agency of Natural Resources (ANR). This would enable state government to more easily make the information about toxic substances, hazardous waste, and/or chemicals of concern available through the Natural Resources Atlas. The Natural Resources Atlas is an interactive mapping tool available on ANR's website that includes information about natural resources, water supplies, hazardous waste sites and other resources.

- Require ANR to clearly identify on the Natural Resources Atlas facilities where toxic substances, hazardous waste or chemicals of concern have been reported. Include information on the Atlas about the risks associated with these substances, how the substances are used, and the proximity of these substances to water supplies, groundwater and other natural resources.

- Populate the Natural Resources Atlas with the information already reported to the State of Vermont and with additional information gathered through improvements to the Vermont Toxic Use Reduction Act, which is set forth in Title 10, Chapter 159, Subchapter 2, as proposed by VPIRG, VNRC and VCV.

- Increase fees on toxic substances, hazardous waste, and/or chemicals of concern to fund additional staff necessary to collect information about these substances, improve the availability of the information on the Natural Resources Atlas and create a fund that could subsidize the cost of testing drinking water and

groundwater in areas where the risk of contamination of water supplies is determined by ANR to be high. Such action would be consistent with and supported by the obligation of the State of Vermont to manage and protect groundwater as a public trust resource, pursuant to Title 10, Chapter 48. Under Vermont law: "[i]t is the policy of the state that the groundwater resources of the state are held in trust for the public. The state shall manage its groundwater resources in accordance with the policy of this section, the requirements of subchapter 6 of this chapter, and section 1392 of this title for the benefit of citizens who hold and share rights in such waters." 10 VSA § 1390 (5).

- Require testing of private water supplies, e.g. wells, when property is transferred. Currently public water supplies are highly protected and regulated pursuant to Title 10, Chapter 56. However, there is no requirement that private wells be tested. In addition to the fund described above that would be used to test private wells at high risk of contamination, this initiative would ensure that private wells would at least be tested at the time title to property is transferred, and provide an additional mechanism for detecting contamination. This initiative is also consistent with and supported by the obligation of the State of Vermont to manage and protect groundwater as a public trust resource.

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Citizen Suit Enforcement**

Author(s): **Ken Rumelt, Vermont Law School**
Jon Groveman, Vermont Natural Resources Council
Paul Burns, Vermont Public Interest Research Group

Introduction:

This Proposal addresses a gap related to the enforcement of existing environmental laws and regulations that are designed to minimize or eliminate exposure to toxic chemicals.[1] We recommend, as more fully discussed below, that the Legislature adopt "citizen suit" provisions in several of Vermont's environmental statutes. These citizen suit provisions will authorize affected Vermonters to enforce violations of environmental laws, including those that govern toxic chemicals, when the State lacks the resources, capacity, or willingness to do so. We further recommend that the Legislature model Vermont's citizen suit provisions after federal analogs that balance the role of the government and citizens in enforcing environmental laws.

Problem Definition:

Congress recognized more than forty years ago that regulators have limited capacity and sometimes lack the willingness to enforce anti-pollution laws. It addressed this enforcement gap by including a citizen suit provision in many environmental statutes.[2] Since then, citizens across the country have successfully brought claims in federal court to bring polluters into compliance to protect public health and the environment.

States like Vermont have adopted anti-pollution laws and regulations that may be more protective than federal law or regulate gaps left open by federal law. For example, Vermont adopted more restrictive drinking water standards for perfluorinated chemicals than the U.S. Environmental Protection Agency. These and other more restrictive standards may be unenforceable through federal citizen suit provisions, thereby leaving toxic pollution un- or under-addressed.

Many states have followed Congress's lead and adopted citizen suit provisions authorizing citizen enforcement of state environmental law. However, Vermont is not among those states. Consequently, affected Vermonters must rely exclusively on state agencies to bring violators into compliance.

[1] We do not address here the adequacy or sufficiency of the underlying environmental requirements.
[2] Congress included a citizen suit provision in the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act; and the Toxic Substances Control Act.

Critique of Current Policy:

Vermont's current policy requires Vermonters to rely on state agencies to enforce violations of pollution laws. This leaves Vermonters affected by toxic pollution potentially vulnerable if an agency is unable or unwilling to bring a violator into compliance.

Policy Recommendation:

Act 154 instructs the Working Group on toxic chemical use in the State to evaluate whether existing State and federal programs are sufficiently effective in preventing releases of toxic substances, hazardous wastes, or hazardous materials (collectively "toxic substances").[3] Consistent with the Legislature's instructions, we recommend the Legislature enact a citizen suit provision, modeled after federal counterparts, within Vermont's waste management statute and its groundwater protection statute.

Mechanics of a Citizen Suit

Notice: Citizen plaintiffs must first provide a 60-day notice of intent to sue to an alleged violator and relevant agency officials. This notice is intended to allow the violator and agency to address the violation without the need for citizen litigation. If the agency decides to enforce the violation, it can bring enforce the violation in court.

Diligent Prosecution Bar: If the regulator is "diligently prosecuting" enforcement of the violation in court it will bar the citizen suit. While barred from bringing her own lawsuit, a citizen may intervene in the agency's enforcement lawsuit. However, if the relevant agency does not "diligently prosecute" the violations, the citizen may file suit after 60 days in court.

Remedies: Citizen suits provisions authorize citizens to seek injunctive relief to bring the violator into compliance. They also authorize citizens to seek penalties for violations that are payable to the treasury. Citizens may not, however, sue for money damages for harm to their person or property; and because money damages are not available, citizen suit provisions typically authorize citizen plaintiffs to recover attorney fees and costs if they are successful. This is a critical feature of citizen suits because lawsuits are costly. Without the possibility of an award of money damages, the possibility of attorney fees and costs provide the only economic incentive for attorneys to bring a citizen suit claim.

Federal citizen suits also typically authorize citizens to compel agencies to perform nondiscretionary duties. These citizen suits often focus on missed deadlines.

Vermont Statutes

Various Vermont laws address toxic chemicals, hazardous materials, or hazardous wastes. After considering these statutes, we recommend adding a citizen suit provision to Vermont's waste management law and the groundwater protection law. Except when in compliance with a State or federal permit, Vermont's waste management laws prohibit the "release of hazardous

[3] Act 154 § 10(b)(2)(A).

materials into the surface or groundwater, or onto the land of the State . . . ."[4] The term "hazardous materials" is defined to include CERCLA "hazardous substances"; petroleum, including crude oil or any fraction thereof; and "hazardous wastes" as defined under Vermont law.[5] The term "release" is defined broadly to include "any intentional or unintentional action or omission resulting in the spilling, leaking, pumping, pouring, emitting, emptying, dumping, or disposing of hazardous materials into the surface or groundwaters, or onto the lands in the State. . . ."[6]

A citizen suit provision in Chapter 159 would give ordinary Vermonters a significant tool to prevent or mitigate exposure to toxic substances. In particular, Chapter 159's prohibition on toxic releases is broad enough to encompass any release into the environment. Affected Vermonters could then sue to stop the pollution in the absence of action by state agencies. Vermonters could also enforce other violations of Chapter 159's requirements, including any permit violations, that are designed to protect human health and the environment.

Citizen suits are eminently practical and feasible. A citizen suit provision requires no additional allocation of resources for state programs or agencies because citizens, not the state, take the lead on enforcement. Indeed, one of the main purposes of a citizen suit provision is to address the enforcement gap created by financial and capacity constraints.

[4] 10 V.S.A. § 6616.
[5] 10 V.S.A. § 6602(16)(A). *See also* 42 U.S.C. § 9601(14) (CERCLA definition of "hazardous substance) and 10 V.S.A. § 6602(4) (Vermont definition of "hazardous waste").
[6] 10 V.S.A. § 6602(17).

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Medical Monitoring**

Author(s): **Ken Rumelt, Vermont Law School**
Jon Groveman, Vermont Natural Resources Council
Paul Burns, Vermont Public Interest Research Group

Introduction:

This Proposal addresses a gap in Vermont's civil remedies for individuals who, due to their exposure to toxic chemicals, must bear the costs of medical tests and monitoring for latent diseases and other ailments. No statutory provision for medical monitoring presently exists in Vermont, and the Vermont Supreme Court has yet to consider whether individuals may recover such damages under the common law absent a physical injury. As discussed in more detail below, we recommend that the Legislature create a statutory provision authorizing individuals to recover the costs of monitoring for latent diseases due to their exposure to toxic chemicals. A statutory provision will eliminate uncertainty in the common law, thereby ensuring a remedy for individuals and shifting the burden of medical monitoring expenses from harmed individuals and the state onto the responsible parties.

Problem Definition:

Toxic chemicals have been linked to a range of diseases and other ailments, including cancer, heart disease, thyroid disease, ulcerative colitis, and immunotoxicity.[1] Individuals exposed to toxic chemicals may not suffer from any present physical injury, and symptoms of the related diseases are often substantially delayed. Nonetheless, the exposure increases their risk of developing diseases and other ailments. To minimize the impact of the disease, those exposed must undergo periodic medical testing in order to detect these latent diseases and other ailments at the earliest stage possible.

Currently, state and federal laws governing hazardous materials, hazardous wastes, and toxic chemicals, such as the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), do not allow individuals to recover damages, including medical monitoring expenses. Generally, these laws focus on controlling and preventing the harmful effects of these substances and provide no avenue for recovery for those exposed. Instead, those individuals must seek recovery under traditional tort law. However, the Vermont Supreme Court has not yet considered whether individuals exposed to toxic chemicals can recover for these damages.

---

[1] These are the adverse health effects linked to perfluorooctanoic acid (PFOA).

Critique of Current Policy:

Due to this gap in Vermont law individuals exposed to toxic chemicals may not be able to recover expenses for medical monitoring absent a physical injury, thereby delaying detection of latent diseases at an early stage when treatment or other planning will minimize or mitigate impacts. Addressing this gap will help ensure that Vermonters can recover these costs without incurring the delay and expense of an appeal to the Vermont Supreme Court.

Policy Recommendation:

We recommend that the Legislature enact a statutory provision authorizing individuals to recover the expense of monitoring for latent diseases and other ailments based on a defendant's tortious conduct. A carefully drafted statute will help ensure that recovery is available for all individuals exposed to toxic chemicals and provide certainty on the scope and mechanics of the remedy.

Components of the Statute

The purpose of the medical monitoring statute is to eliminate the uncertainty surrounding the availability of medical monitoring damages under Vermont law. To avoid unnecessary litigation, the statutory language should avoid ambiguity for attorneys and the courts, but allow flexibility to accommodate for emerging science, new tort laws, and other unforeseen issues.

Who May Recover: Individuals who have been exposed to toxic substances as a result of a defendant's tortious conduct and, due to their exposure, have an increased risk of developing diseases, ailments, or other physiological changes may recover medical monitoring damages.

What Toxic Substances: Individuals should be able to recover when exposed to substances at concentrations linked to diseases, ailments, or other physiological changes, according to available science. The Legislature should not limit recovery for exposure to substances identified as toxic at the time of enactment, or otherwise listed as toxic or hazardous under state or federal law.

What Conduct: Individuals should be able to recover for any tortious conduct that caused the harmful exposure and the resulting increased risk of disease.

Distribution of Award: Courts should place the award of medical monitoring damages into a court-supervised program administered by medical professionals. This will help ensure that individuals use the award for its intended purpose.

Attorney's Fees and Costs: Because the medical monitoring award will be placed into a court-supervised program, the statutory provision should allow successful plaintiffs to recover attorney's fees and costs. Without this provision, litigation will be prohibitively expensive.

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Strict Joint and Several Liability with a Right to Seek Contribution**

Author(s): **Ken Rumelt, Vermont Law School**
Jon Groveman, Vermont Natural Resources Council
Paul Burns, Vermont Public Research Interest Group

Introduction:

The Vermont Legislature tasked the Working Group to evaluate "whether civil remedies under Vermont law are sufficient to ensure that private individuals are adequately protected from releases of hazardous materials, hazardous wastes, and toxic chemicals and that persons responsible for such releases pay for any harm caused."[1] Consistent with this charge, we identified two significant gaps in Vermont law on this topic. First, Vermont law does not clearly establish strict liability for harm caused by the release of toxic chemicals into the environment.[2] The lack of strict liability means that persons responsible for toxic releases may not have to pay for the harm they caused. The risk that such a party escapes liability is likely even greater when dealing with emerging toxins, where the harm may not have been foreseeable. Second, chemical manufacturers are likely to avoid liability for chemicals released into the environment by third parties. Yet in some cases, chemical manufacturers may be responsible for the release by failing to warn third parties of the chemical's harmful properties.

To address these issues, we recommend that the Vermont Legislature establish strict joint and several liability for the release of toxic chemicals. This liability regime will ensure the persons harmed by a release will be fully compensated, that parties responsible for the harm will be held liable, and that risk of liability will encourage safer behavior to help ensure that "private individuals are adequately protected." In addition, we propose that any party found strictly liable can seek contribution from other parties that bear responsibility for the harm, including chemical manufacturers that failed to warn of the chemical's propensity to cause harm when released.

Problem Definition:

The release of toxic chemicals into the environment can significantly harm private citizens physically and financially. For example, exposure to toxic chemicals can lead to debilitating medical conditions that result in high medical costs, pain and suffering, and lost income or an inability to work. Similarly, the value of one's home can drop considerably if contaminated, causing significant financial distress for the homeowner. Act 154 recognizes that civil remedies are potentially available to Vermonters affected by toxic releases, but that these remedies may

[1] Act 154 § 10(b)(6).
[2] As used in this proposal, "toxic chemicals" also includes hazardous materials and hazardous wastes.

not adequately protect citizens from releases, require those responsible for the harm to pay, or both.

Critique of Current Policy:

Vermont law does not clearly establish strict liability for harm caused to private citizens by the release of toxic chemicals into the environment. The lack of strict liability means, in the words of Act 154, that persons responsible for toxic releases may not pay for the harm they caused. For example, under Vermont's common law of negligence, parties that release toxic chemicals are liable for the harm caused only if they owed the persons harmed a duty of care and their breach of that duty proximately caused the harm.[3] The existence of a duty of care depends in part on whether the harm is foreseeable. The risk that a party escapes liability is likely even greater when dealing with emerging toxins, where the harm may not have been foreseeable.

There are several high-profile examples of industries withholding information from the public about significant health risks from their products. News reports indicate that manufacturers of PFOA knew it was harmful to human health as early as the 1960s.[4] Such manufacturers may escape liability even though they may bear some degree of responsibility for the handling of their chemicals, particularly if they fail to warn customers of the chemical's' propensity to cause harm.

Policy Recommendation:

To ensure that private individuals are adequately protected from releases of hazardous materials, hazardous wastes, and toxic chemicals and that persons responsible for such releases pay for any harm caused, we recommend that the Legislature:

- Adopt strict joint and several liability for toxic chemical releases. Strict joint and several liability will ensure that persons responsible for releases of toxic chemicals will be held liable for any harm caused.

- Allow parties held liable for toxic chemical releases to seek contribution from any other responsible party, including chemical manufacturers for failing to warn of the chemical's propensity to cause harm when released.

- This proposal will ensure that parties responsible for toxic releases fully compensate those harmed, encourage safer behavior by chemical manufacturers and their customers, and place the burden on responsible parties to apportion liability.

---

[3] A person responsible for the release of a toxic chemical (defendant) is liable if: (1) the defendant owed a legal duty to the plaintiff; (2) the defendant breached that duty; (3) the plaintiff was actually injured; (4) and the defendant's breach was the proximate cause of the plaintiff's injury.

[4] The Lawyer Who Became DuPont's Worst Nightmare, The New York Times Magazine, Nathaniel Rich, Jan. 6, 2016, http://www.nytimes.com/2016/01/10/magazine/the-lawyer-who-became-duponts-worst-nightmare.html?_r=0.

- This proposal is both practical and feasible. Establishing strict joint and several liability with the right to contribution does not require any additional resources from the state. Moreover, the proposal is similar to the liability framework created under the Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA), which establishes strict joint and several liability for costs incurred remediating toxic waste sites.

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Expanding Act 100 Reporting to all chemicals entering Vermont**

Author(s): **Martin Wolf, Ashley Orgain and Nicole Sala, Seventh Generation, Inc.**

Introduction:

This section should include a brief summary of (1) the problem (i.e. gap, inefficiency, or other issue identified by the Act 154 Working Group); (2) the current policy; (3) why the current policy should be changed; (4) the policy recommendation; and (5) how the recommendation will address the problem.

Under the Toxic Substances Control Act of 1976 (TSCA), chemicals used in commerce in the United States, except agricultural chemicals and food, drug, and cosmetic ingredients, were to be reviewed by the United States Environmental Protection Agency (EPA) prior to commercial use. However, the law exempted from review the 62,000 chemicals in use at the time, and restricted the ability of the EPA to test new chemicals for toxicity. Thus, most of the chemicals in use today have had limited or no toxicity characterization. The updated Lautenberg Chemical Safety Act of 2016 requires the EPA to test 10-20 of these legacy chemicals per year. Thus, it may take up to 8,000 years to fully test all the chemicals currently registered for use in commerce.

Under the Federal Insecticide, Fungicide, Rodenticide Act, the EPA is authorized to require submittal of extensive test data on pesticides before they can be registered for use. Despite such testing, dozens of approved pesticides have later been found to pose significant threats to human health and the environment. Thus even chemicals that were tested and found to be safe may emerge as concerning after years of use.

Most regulatory schemes are "reactive," restricting the use of a chemical only after years of use and exposure have led to the conclusion the chemical is of concern. However, after years of use, a chemical is likely dispersed throughout our factories, homes, environment, and even within us, and locating and removing the chemical from our factories, homes, and environment is very expensive or technically impossible.

Proposed here is expanding to all chemicals entering Vermont the reporting requirements of Vermont Act 100. In this way, the presence, distribution, use, and disposal of all chemicals will be known. This simplifies the process of locating chemicals should they be identified as being of concern.

Laws that direct the disclosure of, restrict the use of, or phase-out hazardous chemicals, such as Act 100, Act 154, and Act 188, should be expanded so that as chemicals are identified as being of concern, the laws are automatically expanded to apply to the newly identified substances.

This approach to chemicals management has been adopted by many companies to reduce their costs of compliance, and to meet increased supply chain requirements for chemical disclosure. Global Foundries described the use of this approach at their facility in Essex, Vermont. The electronic storage manufacturer, Seagate Electronics, uses this approach, and reports savings of thousands of dollars annually when compared to the conventional approach of reacting to each new chemical restriction.

This approach will not eliminate all the problems associated with the current regulatory schema, but it will permit a more rapid and comprehensive response, at lower cost, than is now possible.

Problem Definition:

This section should describe one or more problems identified by the Act 154 Working Group, provide an overview of the root cause(s) of the problem, and identify the threat to human health and the environment posed by the problem.

The Working Group identified the following issues with existing regulatory schema:

- Chemical-by-chemical approaches are not effective and will never encompass all chemicals.
- Many regulatory schemes are "reactive" instead of preventative.
- Lack of knowledge on chemicals, toxicity, and occurrence limit the State's ability to effectively identify contamination and perform remediation.

Critique of Current Policy:

This section should provide a summary of the current policy and discuss why the current policy should be changed.

Current chemical management policies require disclosure of, or restrict, limited lists of specific chemicals, and do not allow for expansion of those lists as new chemicals of concern are identified.

Current chemical management policies allow decades of chemical use without full knowledge of where and how chemicals are being used, because the chemicals have not been identified as being of concern.

Current chemical management policies focus on specific environmental compartments or uses. For example, Vermont Act 188 applies only to children's products, though many other household products may contain the same 66 chemicals of concern. Consequently, these regulations do not comprehensively protect citizen and environmental health.

Current chemical policies do not require manufacturers to disclose at point of sale. Additionally, disclosure of full product name or UPC code is not required, making it difficult for consumers to make an informed decision.

Policy Recommendation:

Be as specific as possible.

This section should include a description of the proposed recommendation, and discuss how the proposal would address a problem identified by the Act 154 Working Group; why the proposed action is necessary to protect human health and the environment; and how the proposed policy aligns with one or more of the values identified by working group members. If information is available, discuss why the proposed action is practical and feasible.

Expand Vermont Act 100 to require the reporting of all chemicals above a certain mass entering or being produced within the State of Vermont. The reporting entity must indicate where the substance is stored, and its disposition (transfer to another entity within the state, transfer to another entity outside the state, discharged to water, disposed of as solid waste, emitted to air). De minimus levels and articles would be exempt to avoid burdensome reporting requirements.

Other laws, would be expanded to apply to any substance found to be hazardous to human health or the environment, so as scientific understanding of a chemicals properties evolve, existing regulations would apply rather than require legislative action for each chemical. Act 188 would be expanded to cover all consumer products, and the list of substances of concern would be expanded in concert with other states' lists. Product specific reporting under Act 188 should be improved to include product name and UPC. Chemicals of concern should be phased out over time.

# # #

Act 154 Working Group on Chemical Use in Vermont

Policy Recommendation Proposal

Title: **Testing of private water for manmade chemicals**
Author(s): **Vermont Department of Health**

Introduction:

This section should include a brief summary of (1) the problem (i.e. gap, inefficiency, or other issue identified by the Act 154 Working Group); (2) the current policy; (3) why the current policy should be changed; (4) the policy recommendation; and (5) how the recommendation will address the problem.

- The Problem
  - While public drinking water systems are required to tested for naturally-occurring and manmade chemicals, and many homeowners test for naturally occurring-contaminants, private water systems are not generally tested for manmade chemicals.
  - Potentially injurious manmade chemicals, such as PFOS and PFOA, may be present in private drinking water systems and domestic wells, but are not routinely tested.
- The Current Policy
  - The current policy in the State of Vermont is to not require homeowners to test their private drinking water nor does the State does currently provide cost-free testing to homeowners.
  - DEC tests private drinking water supplies that are potentially impacted by known contaminated sites but many sites, or other sources of exposures are likely unknown.
- Why Policy Should be Changed
  - There is a threat to human health due to drinking water that is contaminated with harmful manmade chemicals.
  - Many chemicals can be present in groundwater or drinking water without any obvious taste or odor and are not otherwise detected.
- Recommendation
  - The State should adopt a methodologically-sound sampling program that would test private water system across Vermont in order to detect possibly injurious manmade contaminants.
  - The Department of Health should build the capacity of the Department's laboratory to test for more manmade chemicals.
- How it addresses the problem

    - Such a program would provide detection of dangerous chemicals and allow the public and the State the necessary information to prevent injury and provide treatment for such exposures.
- Conclusion
    - The action addresses several values of the workgroup, including identifying and addressing gaps in regulatory oversight, prioritizing regulatory gaps based on the potential for human exposure, allowing government to do more to prevent exposure and harm, proactively identifying and addresses emerging chemicals of concern, preventing another PFOA-related incident, and informing the public about chemicals to which they are potentially exposed.

Comments to Act 154 working group 11/1/16.

Please accept these comments on the policy proposals put forth by the committee.

1) VAAFM homeowner pesticide usage proposal.
    a. Lack of information on what pesticide products are being bought and used by homeowners is a large gap in our knowledge of what pesticides are getting into the Vermont environment. The current VAAFM program is inadequate because it collects information only on **commercial** pesticide sales/use and location is only collected at the county level. I suggest that small pesticide retailers be required to report sales annually, while large retailers such as: Aubuchon, True Value, Walmart, and Home Depot report sales by zip code of the purchaser. This will more accurately estimate where pesticides are actually being used. With zip code level of detail it will be possible to more accurately estimate what watershed the use is occurring in. Urban pesticide use is of continuing concern at the national level because pesticides in stormwater runoff have been shown to be toxic to aquatic life in urban streams. Knowing where pesticides are being used is critical in predicting areas of large use, developing environmental monitoring programs and educational outreach activities.
    b. Similar to the above pesticide tracking, a mechanism for tracking prescription pharmaceutical sales by zip code would make it possible to optimize wastewater treatment facilities (WWTFs) for their removal. Emerging Contaminants, and pharmaceuticals in particular, in our WWTF effluent are a serious concern in Vermont and worldwide. In areas where surface water is the source of drinking water, such as Burlington, emerging contaminants from WWTF effluent are potentially ending up in our drinking water. So not only is this an environmental issue, but also a potential human health concern. Knowing the amounts of pharmaceuticals in use within areas of specific WWTFs would make possible cost effective monitoring of effluent as well as being able to optimize treatment to remove contaminants of most concern. In order to make the creation of these pesticide and pharmaceutical databases cost effective, it is suggested that they be maintained by one agency, perhaps VDOH. Combining both the pesticide and pharmaceutical databases into one database within the VDOH would ensure privacy concerns are addressed and house them within an agency with in-house statistical expertise for data analysis.

2) VDOH testing of private water supplies for manmade chemicals.

    Developing the capability in-state for testing of private drinking water supplies for unregulated contaminants of concern is an excellent idea. As part of developing this testing capability, I would suggest that this proposal be expanded to include all public water supplies. Currently, the USEPA has a program to collect information on the presence of contaminants of emerging concern in U.S. drinking water supplies, The Unregulated Contaminant Monitoring Rule (UCMR). The most recent list of contaminants which were required to be tested for under UCMR3 included perfluorinated compounds and estrogenic hormones. Unfortunately, most public water supplies in Vermont are small enough that they are exempt from UCMR testing requirements. Of the 20 or so public drinking water supplies in Vermont getting water from Lake Champlain, only the City of Burlington was required to test for perfluorinated compounds, and none needed to test for the hormones.

    As a first step in understanding emerging contaminants in our drinking water, I suggest that **all** public drinking water supplies be required to routinely (at least annually) test for all UCMR compounds, as well as any other compounds deemed appropriate by the legislature, VTDEC, or VDOH.

    Sincerely,

Nat Shambaugh

Berlin, VT 05602

natsh@myfairpoint.net