November 17, 2018

Via email to sarah.pillsbury@des.nh.gov

Sarah Pillsbury, Administrator
Drinking Water and Groundwater Bureau
N.H. Department of Environmental Services
29 Hazen Drive, PO Box 95
Concord, NH 03302-0095

Re: Comments of the Responsible Science Policy Coalition
Technical Considerations for Developing Maximum Contaminant Levels and Groundwater Levels for PFOA, PFOS, PFNA, & PFHxS

Dear Ms. Pillsbury:

On behalf of the Responsible Science Policy Coalition (RSPC), we appreciate the opportunity to offer perspectives on the charge questions raised by the Drinking Water and Groundwater Bureau at the PFAS Water Standard Technical Work Sessions conducted in connection developing state drinking water standards (Maximum Contaminant Levels or MCLs) and groundwater remedial standards (Ambient Groundwater Quality Standards or AGQS) for perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and other perfluoroalkyls substances (PFAS). In addition to these written comments, we would appreciate an opportunity to meet with DWGB's experts to provide additional perspectives on the science questions. The RSPC was formed to advance the application of sound science, decisional transparency, and wide public participation to governmental regulatory and semi-regulatory decision-making concerning health and environmental impact assessments of chemical substances, and concerning the manufacture, processing, use, disposal, regulation and environmental remediation of chemical substances. These principles better assure that such decisions are based on the best-available information and reflect balanced and transparent public policy choices considering all relevant factors and perspectives. Such decision-making also provides a solid foundation for balanced and effective risk communication.

I. STUDY SELECTION FOR RISK ASSESSMENT.

Beyond the studies considered in the recently released ATSDR Toxicity Profiles and the existing EPA Health Advisories, are there other studies or data that should be considered in deriving the health risk limits for each contaminant?

A. Studies Not Included in the ATSDR Analysis

ATSDR's review summarized in its draft report failed to consider several key and recent studies that could have provided substantial insight into ATSDR's draft analysis. In addition, there are studies that ATSDR cited or mentioned, but failed to evaluate fully. We highlight a few of these studies and their implications below:

For PFOA, ATSDR selected a study, documented in two separate publications, that lacks fundamental scientific quality and adherence to scientific best practices (e.g., a single dose study without any dose-response, small sample size with only six pregnant animals; no details on the reproductive nor the developmental hallmarks, and many other concerns). The results of this study should not be used in any risk assessment for humans. RSPC member companies have encouraged ATSDR to consider evaluating a 2017 published phase 1 clinical trial data with PFOA in 49 human subjects.[1]

For PFOS, ATSDR did not consider more recent and more relevant toxicity studies. ATSDR did not use a 2017 published clinical study with monkeys exposed to PFOS for its risk assessment.[2] Since these non-human primates have much more similar physiological resemblance to humans than those of rodents, the results are more relevant to determine potential human effects than the rodent studies.

For PFHxS, the ATSDR's thyroid histology finding in rats cannot be replicated in another rodent species (mice) under similar study conditions. ATSDR did not fully evaluate a 2018 published reproductive and developmental study in mice with PFHxS for its assessment.[3] ATSDR also did not recognize that there are distinct differences in thyroid hormone regulations between rodents and humans.

The above-referenced studies should be more completely analyzed by the Bureau.

B. Studies Not Included in the U.S. EPA Life-Time Health Advisories

The U.S. Environmental Protection Agency (EPA) published its life-time health advisory guidance levels (LHAs) for PFOA and PFOS in 2016. Since then there have been many relevant studies published that address the shortcomings in the scientific literature that EPA discussed in the 2016 evaluation. The most important relevant studies not included in EPA's LHA are also listed in Attachment A. We note that the final rationale for the LHA's derived by EPA for PFOA and PFOS toxicity values underlying the LHAs has never undergone independent public peer review. Therefore, we encourage the Bureau to conduct its own independent review of EPA's 2016 analysis, especially in light of the newer studies that are now available.

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[1] Convertino, M., Church, T.R., Olsen, G.W., Liu, Y., Doyle, E. Elcomboe, C.R., Barnett, A.L., Macpherson, I.R., Evans, T.J., 2018. Stochastic Pharmacokinetic/Pharmacodynamic Modeling for Assessing the Systemic Health Risk of PFOA. Toxicol Sci 163, 293-306.

[2] Chang, S., Allen, B.C., Andres, K.L., Ehresman, D.J., Falvo, R., Provencher, A., Olsen, G.W., Butenhoff, J.L., 2017. Evaluation of Serum Lipid, Thyroid, and Hepatic Clinical Chemistries in Association With Serum Perfluorooctanesulfonate (PFOS) in Cynomolgus Monkeys After Oral Dosing With Potassium PFOS. Toxicol Sci 156, 387-401.

[3] Chang, S., Butenhoff, J.L., Parker, G.A., Coder, P.S., Zitzow, J.D., Krisko, R.M., Bjork, J.A., Wallace, K.B., Seed, J.G., 2018. Reproductive and developmental toxicity of potassium perfluorohexanesulfonate in CD-1 mice. Reprod Toxicol 78, 150-168.

C. Recommendation.

The draft report supporting ATSDR's draft minimum risk levels (MRLs) is useful in identifying many of the relevant studies on PFAS hazards, however, the MRLs resulting from that analysis are an inappropriate point of departure for setting state drinking water standards. As noted, the ATSDR review omitted key studies and used others improperly. Comments submitted in August 2018 by RSPC and others have highlighted these shortcomings. We are hopeful these issues will be addressed in the final version. In the interim, it remains only a draft and does not represent a sound basis for regulation. Indeed, the MRLs are not intended by ATSDR as regulatory values. ATSDR is states clearly in its draft report that a causal link between the listed perfluoroalkyls and health effects in humans has not been established.[4] The MRLs are intended by ATSDR only as highly conservative screening guidance values and not as safety thresholds. They are set well below such thresholds.

We recommend that the Bureau use the ATSDR and EPA documents as a resource to identify some of relevant hazard assessment information. However, due to the limitations discussed above and ATSDR and EPA's own caution that their work is not meant to support regulation, the Bureau should conduct its own independent analysis of best available science. In addition, this evaluation is necessary since, as discussed below, neither the minimum risk levels (MRLs) nor the LHAs are methodologically appropriate for use in a benefit-cost analysis.

II. COST-BENEFIT ANALYSIS METHODS.

To conduct a methodologically sound cost-benefit analysis, we strongly recommend that the Bureau use the principles, guidance, and methodologies found in the U.S. Office of Management and Budget's Circular A-4 entitled, "Regulatory Analysis." [5] This peer-reviewed guidance has been Federal regulatory analysis policy since 2003 under administrations of both political parties. It applies economic principles to the practical challenges of conducting regulatory analysis amid uncertainty and resource limitations.

In addition, EPA's 2014 economic analysis guidelines also provide detailed theoretical and practical recommendations to analysts conducting social benefit-cost analyses of environmental regulations.[6] EPA has updated these economic analysis guidelines periodically since they were first published in the 1980s.

Both of these documents recommend starting the benefit and the cost analysis by determining how the alternative regulatory options will cause real changes in resource allocation (social costs) and in improved public health and welfare (social benefits). Specifically, the Bureau will need to estimate the real social costs of achieving the derived drinking water and ambient groundwater values throughout the State, including the actions (and capital and operating costs

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[4] ATSDR, Draft Toxicological Profile for Perfluoroalkyls, 2018, pp 635-636.

[5] U.S. Office of Management and Budget, Circular A-4: Regulatory Analysis, September 17, 2003.

[6] U.S. Environmental Protection Agency, National Center for Environmental Economics, Guidelines for Preparing an Economic Analysis, December 17, 2010 (updated May 2014).

of those actions) to be taken at each affected public water system (PWS) and private wells expected to have treatment or to be abandoned, changes to landfill leachate management at affected sites, and or soil excavation and remediation necessary to achieve groundwater values throughout the timeframe of the analysis. Likewise, the Bureau will need to estimate the incremental human health risk reduction benefits of those actions at different levels.

It will be critical for the Bureau to be transparent about the assumptions made in such analyses, the basis for those assumptions, the uncertainties in the conclusions. This may be particularly challenging given the particular nature of the potential health risks some have associated with certain PFAS, and the absence of any established causation at this time. It can be appropriate to act in a precautionary way with respect to potential risks, but such actions must be proportionate, and choices must be made with a clear understanding of the costs and benefits.

We recommend that the Bureau analyze several regulatory options for public comment and review. OMB Circular A-4 requires federal agencies to analyze more than one regulatory alternative so that policy officials and the public can have more understanding of an agency's policy choices.[7] With the growing amount of scientific information on the possible effects to PFAS, we recommend that the Bureau consider a range of possible MCLs so that it can respond more rapidly to changes in the best available science.

A. **Measuring Benefits**. *What data and methodologies should the agency consider in deriving a benefit value?*

1. Components of Social Benefit Analysis

(a) Baseline.

While abbreviated as "benefit-cost analysis," the economic principle to evaluate policy action is marginal benefit-cost analysis – in other words, what are the incremental benefits and incremental costs of the policy alternative under consideration? Federal regulatory agencies are charged under various Executive orders since 1981 to demonstrate that the incremental social benefits exceed or justify the incremental social costs.[8] To estimate the incremental benefits, the benefits with the policy alternative must be compared to the benefits without the policy alternative – i.e., the baseline. For the baseline, the agency should ask: what level of drinking water exposure would occur in the absence of the potential standards and what would the health effects be to that population from that exposure? Technologies change, changes are mandated by other regulations and laws, consumer behavior and preferences change, and other dynamic factors will affect the potentially exposed population and the incremental social benefits.

For a possible state drinking water standard, the agency should consider particularly how much drinking water or groundwater cleanup is already occurring due to other regulations/authorities and will reduce current exposure levels. A state MCL may fill gaps in legal authority or may accelerate the timing of actions that would likely occur. For example, a state MCL may be a

[7] Circular A-4, pg. 16.

[8] See, for example, Executive 12291 at 46 FR 13193 and Executive Order 12866 at 58 FR 51735.

clear "applicable or relevant and appropriate requirement" at a federal cleanup site, possibly enabling a potential remedy selection earlier than would occur if EPA were to use its baseline risk assessment step to set a PFAS remedial goal. However, existing federal and state laws would – and have – triggered exposure prevention even without a state MCL; it would be double-counting to assign to the state's drinking water standard the full social benefits from avoided exposure from on-going and likely cleanup actions and from other on-going actions to reduce exposure.

(b) Measurable and Valued Adverse Outcomes.

Benefit-cost analysis and microeconomics rest on the principle of consumers' voluntary willingness-to-pay for a good or service. Consumers express a willingness to pay to avoid health and safety risks when the negative attributes of the potential exposure can be estimated – e.g., a decision to pay a certain premium for a certain coverage level of fire insurance. Economic theory therefore requires that, for an action to have social benefits, (1) without the action, exposure to a contaminant causes an adverse outcome; and, (2) consumers can rationally value the expected value of adverse outcome.

Neither ATSDR's MRLs or EPA's LHAs satisfy either of these two requirements. ATSDR states in its draft toxicological profiles that causation has not been established for any of the potential health effects it identifies.[9] Further, the ATSDR document lists many epidemiological associations but *does not test these associations* for the likelihood that they describe a causal relationship. The toxicology and risk assessment profession has developed guidelines to assess whether observed associations between exposure and adverse outcomes are sufficient to infer causation. ATSDR does not describe in the draft profile any systematic, consistent methodology it utilized to evaluate causation for the statistical association it reports from the epidemiological literature. The National Academy of Sciences has repeatedly urged U.S. EPA and other agencies to adopt more transparent and rigorous techniques to assess causation.[10] ATSDR apparently did not follow the NAS recommendations in the draft profile.

ATSDR's failure to follow a consistent, scientifically rigorous and transparent methodology to assess causation is especially important since other independent experts have failed to find evidence of causation in the same studies cited by ATSDR. Specifically, independent experts on behalf of the Australian Ministry of Health determined that the available evidence is not sufficient to conclude PFAS causes many of the adverse effects listed in ATSDR's draft report.[11] Without evidence to support causation, any benefit from an MCL is at best speculative and possibly non-existent.

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[9] ATSDR, Draft Toxicological Profile for Perfluoroalkyls, 2018, pp 635-636.

[10] National Research Council. 2014. *Review of EPA's Integrated Risk Information System (IRIS) Process*. Washington, DC: The National Academies Press.

[11] Ministry of Health, Commonwealth of Australia, Expert Health Panel for Per- and Poly-Fluoroalkyl Substances (PFAS), March 2018.

In any proper benefit-cost analysis, not only is causation a necessary condition for benefits, but the analysis must define and value the incremental benefit the customers receive from regulation. The MRLs and LHAs, however, are threshold guidance values and have too many limitations to allow consumers to make rational choices and valuations. Specifically, as ATSDR states, "[t]hese MRLs are not meant to support regulatory action, but to acquaint health professional with exposure levels at which adverse health effects are not expected to occur in humans."[12] An "MRL may be as much as 100-fold below levels that have been shown to be nontoxic in laboratory animals."[13] ATSDR also emphasizes: "Exposure to a level above the MRL does not mean that adverse effects will occur."[14]

In general, ATSDR did not assess the draft PFAS MRLs on the same scale and includes explicit uncertainty factors that make it impossible for consumers to know the incremental social benefits from exposure reduction. First, due to the uncertainty factors, the public does not know the incremental potential harm if the exposure is equivalent to the MRL versus, for example, two times the MRL. It may be large or small. Second, since MRLs are calculated using different adverse effects, the MRLs are not on the same scale of harm. For example, the harm of exposure to one chemical at the 10 times MRL may be less than the harm from exposure to another chemical at 10 times its MRL. Third, most toxicity values are not the most likely estimate of the relationship between exposure and effect, but include uncertainty factors, safety assumptions, or choices on the probability distribution (e.g., 95th percentile) explicitly chosen to be protective. For example, in the ATSDR draft profile, ATSDR divides its most likely estimate by a 300-fold composite uncertainty factor. There are additional safety factors in other parts of ATSDR's derivation. Social benefit estimates that include these compounded safety factors are expected to overestimate the likely social benefits.

For these reasons, consumers cannot rationally state a willingness-to-pay to reduce exposure below or to an MRL. Many academic researchers have determined that threshold toxicity benchmarks like MRLs, LHA, EPA reference doses, and others are unsuitable for benefit-cost analysis and are difficult to use in risk communication and policy decisions. The National Academy of Sciences in one of its important studies on risk assessment practices, *Science and Decisions*, devoted an entire chapter to this problem with threshold toxicity benchmarks for noncancer effects and recommended that EPA and other agencies move away from these hazard characterization metrics.[15] The NAS recommended other hazard characterization approaches that are compatible with incremental policy analysis. For these reasons, we urge the Bureau to follow the NAS recommendations and do not quantify the incremental risk reduction using benchmark guidance values like an MRL or LHA. We recommend that the Bureau identify key scientific studies, identify causal dose-response relationships where they exist using reliable

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[12] ATSDR, Draft Profile, C-1.

[13] ATSDR, Draft Profile, A-1.

[14] Id.

[15] National Research Council. 2009. *Science and Decisions: Advancing Risk Assessment*. Washington, DC: The National Academies Press.

scientific methodologies, and (data permitting) use these relationships to estimate the incremental health benefits from reduced exposure.

(c) Valuation of Any Adverse Outcomes.

Valuation of potential adverse human health outcomes raises numerous issues. By applying economic theory to ascertain consumers' willingness-to-pay, EPA, other federal agencies, and academic researchers have estimated values for a substantial number of possible health conditions. Sources for these values include EPA regulatory impact analyses, EPA's economic analysis guidelines,[16] health utility information published by the U.S. Department of Human Health Services,[17] and the World Health Organization's global burden of disease initiative.[18]

(1) Population Exposed. EPA's national drinking water database, SDWIS, gives the population served by each U.S. public water system (PWS).[19] This database can provide population estimates for any state drinking water system expected to reduce PFAS levels in response to this regulation.

For private wells, the available national data is older.[20] However, it may be reasonable to assume that each private well serves a single household and use U.S. Census data to identify the number of people per household and their likely ages in the affected geographic area in New Hampshire.[21] The Census department also has estimated population growth rates for states and some smaller geographic units.

(2) Drinking Water Consumption Rate. Not all consumers get all, or even a majority, of their drinking water from public water systems or private wells. Some fraction of consumers chose bottled water for all their drinking water and some cooking requirements. EPA has compiled detailed information on the expected distribution of public water for the entire U.S. population and for certain subpopulations.[22] We

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16 See Economic Analysis Guidelines, pg. 7-15.

17 Research Initiative in Clinical Economics. Content last reviewed August 2018. Agency for Healthcare Research and Quality, Rockville, MD. http://www.ahrq.gov/professionals/clinicians-providers/resources/rice/index.html

18 World Health Organization, WHO methods and data sources for global burden of disease estimates 2000-2016,

19 https://www.epa.gov/enviro/sdwis-search. Global Health Estimates Technical Paper WHO/HIS/IER/GHE/2018.4, June 2018. The WHO uses disability-adjusted life-years (DALY) to compare across disease outcomes; in the Unites States, the more common term is quality-adjusted life-year.

20 See https://water.usgs.gov/owq/data.html.

21 Sources include: U.S. Census Bureau, American Community Survey 1-Year Estimates, Data Series S1101; American Community Survey 5-Year Estimates, Data Series S1101; American Community Survey, Housing Units: Year Structure Built.

22 U.S. EPA. Exposure Factors Handbook 2011 Edition (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/052F, 2011.

recommend that the Bureau adjust its estimated exposed population based on EPA's PWS consumption data.

(3) Discount Rate. Benefits and costs that occur in different time periods should be discounted for several reasons, all based on consumer preferences (see Circular A-4).[23] Discounting accounts for the opportunity cost of resources through time; consumers consistently act as if $100 today is worth more than $100 in six years. In addition to its theoretical basis, consistent discounting improves the transparency of the analysis by providing an "apples-to-apples" comparison of benefits and costs in the same temporal units.

OMB Circular A-4 requires federal agencies to use a real annual discount rate of seven percent.[24] The seven percent discount rate reflects the best estimate of the opportunity cost of private capital. Regulation typically requires firms to shift capital from other investment opportunities that produce revenue, profits, and employment toward regulatory compliance. The opportunity cost of the capital is the rate of return of these other investment opportunities.[25] We recommend that the Bureau follow Circular A-4's recommendation and use an annual discount rate of seven percent.

(4) Timeframe of the Analysis. As a practical matter, the choice of the discount rate often also gives the analytic timeframe. Under a seven percent discount rate, benefits occurring beyond fifteen years have little incremental effect on the present value estimate if the annual benefit stream is roughly constant. At a three percent discount rate, the comparable time period is approximately 30 years. Therefore, most benefit-cost analyses of drinking water federal regulations use a 30-year timeframe.

(5) Reference to "Avoided Costs." The Bureau has posted a presentation made at its PFAS MCL technical work session. In a bullet point on the benefit sections, the Bureau states: "Uncertain about our ability to quantify avoided costs, may need to rely on qualitative description."[26] If by "avoided costs," the Bureau means avoided potential adverse effects, the OMB and EPA guidance and the above recommendations are in line with that meaning.

However, some analysts try to value environmental media as the avoided costs of cleaning it back up to a cleaner condition. Under this reasoning, one measure of the social benefit of an MCL is the avoided cost of cleaning up some volume of groundwater/surface water in the future.

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[23] Circular A-4, pg. 31

[24] Circular A-4, pg. 33 citing OMB Circular A-94. Agencies may also conduct an alternative estimate using a real annual rate of three percent under Circular A-4.

[25] Even if the entity is a non-profit organization like a water authority, the increased water rates charged to their customers to pay for compliance diverts funds from these firms and households.

[26] N.H. Department of Environmental Services, "PFAS Water Standards Technical Work Session", slide 11.

We do not know if the Bureau is contemplating using "avoided cost" in this manner as a way to value the social benefits of a state MCL. However, if the agency is considering that approach, we point out that both EPA's economic guidelines and OMB Circular A-4 state that this technique is hardly ever methodologically correct. EPA's economic guidelines caution that avoided costs or "replacement costs" only are valid as a measure of social benefits if two strict conditions are met: "(1) damage to the asset is the only cost of the environmental deterioration; and (2) the least expensive way to achieve the level of satisfaction realized before the deterioration would be to replace the asset."[27] As EPA's Guidelines state, if the second condition is not met, using replacement costs will overstate the social benefits.

Remediation is almost never the least expensive way to satisfy water needs. Remediation only adds value if any contamination from the regulated activity precludes the highest-value use of the groundwater resource. Remediation costs per 1,000 gallons of water are often 10-fold to 100-fold more expensive than alternative water supplies.[28] Therefore, we recommend that the Bureau not consider using an avoided-cost methodology or valuation approach to estimate the social benefits of possible MCLs.

2. **Recommendations for Benefit Analysis.**

We recommend that the Bureau follow the best practices in social benefit analysis by following the principles and methodologies with OMB Circular A-4. We believe that the Bureau has information to evaluate quantitatively the avoided costs of some of the adverse effects. We emphasize that the agency must choose a methodology to estimate the expected, if any, number of adverse health effects at different potential MCLs for the analysis to be comparable to the Bureau's incremental social cost estimates. Incidents of exposure above benchmarks like an MRL or EPA's LHA are not suitable for social benefit estimation. While this fundamental caution is true for the use of any MRL or LHA, it is especially important for PFAS since the MRLs are still in draft form and the LHA's rationale did not undergo any independent peer review.

B. **Measuring Costs**. *What data and methodologies should the agency consider in deriving a cost value?*

Under OMB Circular A-4, social costs are the opportunity costs of the resources devoted to compliance with the regulatory requirement. In most markets, a good's or service's price represents its opportunity cost to society. Therefore, many regulatory agencies estimate social costs by calculating the total current market cost of capital equipment, labor, laboratory service,

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[27] EPA, Economic Guidelines, pg. 7-13.

[28] The American Water Works Association reports that the average drinking water cost is $1.50 per 1,000 gallons; a 2001 evaluation by EPA of 48 pump-and-treat systems found that the combined annual capital and O&M costs were $94 per 1,000 gallons. See U.S. EPA, Cost Analyses for Selected Groundwater Cleanup Projects: Pump and Treat Systems and Permeable Reactive Barriers, EPA 542-R-00-013, February 2001.

and other goods necessary for regulated entities to comply with the MCL. We recommend that the Bureau adopt an opportunity cost framework for its social cost estimates.

We strongly recommend that the social benefit and the social cost estimates have a common framework and common methodologies. For example, the social cost and social benefit estimates should have the same baseline assumptions, the same number of systems/sites affected, the same discount rate, and the same timeframe of the analysis. The public then can compare more easily the estimated social benefits and costs of different policy alternatives.

From our experience with other drinking water MCL analyses by EPA and by other states, the social costs fall into three categories: treatment costs, monitoring costs, and opportunity costs. We provide our suggestions on these three categories below:

1. **Treatment Costs**

Several sources of treatment cost information include:

- Water Research Foundation Publications. The Water Research Foundation (WRF) has some existing reports and has substantial on-going research on water treatment technologies, their costs, and their effectiveness. We recommend that the Bureau contact WRF for up-to-date information.

- Widefield Water and Sanitary District's Treatment Plant. In 2017, the first water treatment plant built specifically to remove PFAS compounds started operation in Colorado. The capital and current operating and maintenance costs of this project (and the corresponding annualized cost per 1,000 gallons) could be applied to any new water treatment systems.

- EPA Remediation Cost Estimates. Although an older document, EPA has prepared cost equations for EPA staff to estimate remediation technology costs.[29] EPA derived these estimates and methodology from actual costs at CERCLA remediation sites. The Bureau could update the costs of these EPA cost estimates for use in its social cost analysis.

- Cost estimation Manuals. To support cost estimation for project bids, procurement, and financing, there are several cost manuals that give price data for many common construction and environmental remediation activities. These data sources can allow the Bureau to estimate project costs for unique projects or routine requirements.

2. **Monitoring Costs**

Public water systems will likely be required to conduct periodic monitoring as part of the state MCL rulemaking. The cost of collecting, sampling, testing, and reporting required monitoring is a social cost of a state rulemaking. We recommend the Bureau consult with many cost estimation manuals and commercial laboratories to create monitoring cost estimates.

[29] https://clu-in.org/download/remed/542r01021b.pdf

3. Opportunity Costs

As mentioned above, OMB Circular A-4 emphasizes that social costs are the opportunity cost of the resource. While most costs will be real resource expenditures, state drinking water standards could temporarily take away the current, highest-valued use of a resource. The opportunity cost and part of the social cost of the rulemaking is the difference between the pre-regulatory and post-regulatory value of the resource. For example, if the state drinking water standard is lower than the concentration found in a private well, the lost value of this well water is an opportunity cost of the rulemaking. We recommend that the Bureau include the opportunity costs of its MCL policy choice.

III. CONCLUSION

We appreciate the opportunity to comment on the Bureau's charge questions in support of its upcoming rulemaking effort. The analysis in ATSDR's draft toxicological profile document and in EPA's LHA are unsuitable to support the Bureau's state regulation and methodologically unusable for a benefit-cost analysis. We recognize that the inability to simply apply either ATSDR or EPA's hazard guidance values increases the Bureau's work to establish sound state MCLs. The RSPC stands ready to support the Bureau with scientific information as it embarks on this rulemaking. In addition, we hope that the Bureau will consult with stakeholders as it undertakes the benefit-cost analysis to ensure that it has obtained the best data and used the soundest methods, and that it commences the consultation before a fully developed proposal is submitted for public notice and comment.

Thank you for your consideration of these requests. Please contact me at (202) 434-4227 or at votaw@khlaw.com if you require additional information.

Very truly yours,

James G. Votaw, *for the*
Responsible Science Policy Coalition

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