OREGON BUSINESS & INDUSTRY | OBI

October 14, 2025

Leah Feldon
Director
Department of Environmental Quality
700 N Multnomah St., Suite 600
Portland, OR 97232

Re: Scientific Issues with DEQ's CAO TRV Rulemaking

Dear Director Feldon:

I am writing on behalf of Oregon Business & Industry (OBI) regarding the Cleaner Air Oregon (CAO) Toxic Air Contaminant Review and Update Rulemaking. OBI is a statewide association representing businesses from a wide variety of industries and from each of Oregon's 36 counties. In addition to being the statewide chamber of commerce, OBI is the state affiliate for the National Association of Manufacturers and the National Retail Federation. Our 1,600 member companies, more than 75% of which are small businesses, employ more than 250,000 Oregonians. Oregon's private sector businesses help drive a healthy, prosperous economy for the benefit of everyone.

On August 21, 2025, OBI wrote to request your help in providing Oregon businesses with regulatory certainty in relation to DEQ's ongoing CAO Toxic Air Contaminant Review and Update Rulemaking. **OBI requested confirmation that Oregon air permittees already called into the CAO program would not be subject to new rules or standards not adopted into law at the time of those sources' call-in. OBI also asked DEQ to delay calling additional existing sources into the CAO program until DEQ completes the proposed rulemaking**.[1] OBI looks forward to discussing those issues with you. In the meantime, I am writing to present OBI members' significant concern with -- and to seek your assistance to improve -- DEQ's process for evaluating the science underlying the toxicity reference values (TRVs) that are the subject of this critically important rulemaking.

The proposed changes to the CAO rules are critically important to Oregon manufacturers. The CAO rules can constrain manufacturers' production and compromise necessary manufacturing activities. It is well publicized that we are in year two of an Oregon-specific manufacturing recession. Yet, CAO's complex and perpetual tightening of regulatory requirements jeopardize business investments and economic recovery efforts across the state, further entrenching Oregon as a competitive outlier with our peer regional states. The introduction of new and more restrictive TRVs will create particular challenges for existing facility operations, and render nearly impossible even simple maintenance activities. For example, under the CAO rules, common maintenance activities like welding may be severely restricted (of course, welding is also a key manufacturing activity in and of itself). As another example, the CAO rules make it difficult for facilities to make use of backup electricity generation, which is essential to ensuring readiness during power shortages and natural disasters when the need for energy reliability is crucial. Both of these existing issues will be exacerbated by the proposed TRV rulemaking. In order to avoid unnecessary harm to the manufacturing sector during this critical time, it is imperative that DEQ

[1] As of this writing, DEQ has called in at least one additional existing source into the CAO program despite OBI's August 21, 2025 letter requesting that additional call-ins be paused until this rulemaking is adopted.

proceed cautiously in adding to manufacturers' Oregon-specific regulatory burdens, especially when those burdens come in the form of an even more restrictive CAO program.

The proposed TRV rulemaking has proceeded in two phases. Phase 1 involved review by the Air Toxics Science Advisory Committee (ATSAC), in consultation with DEQ and the Oregon Health Authority (OHA), of the inhalation TRVs in the CAO rules. At the May 2025 Environmental Quality Commission (EQC) meeting, DEQ reported to EQC that ATSAC's Phase 1 review was complete.

DEQ recently announced that it is immediately proceeding to phase 2, formal rulemaking to propose updated TRVs for action by the EQC. DEQ intends to establish a rulemaking advisory committee this fall and to present rules that include updated TRVs for the EQC's adoption by early 2026. As detailed below, OBI requests that DEQ revise its approach to evaluating the TRVs to incorporate the detailed technical review warranted by the proposed changes.

With respect, DEQ has not provided sufficient time or opportunity for a sound technical assessment of whether the proposed TRVs shown to the ATSAC reflect the best available science. Through this rulemaking, **DEQ intends to ask the EQC to introduce (for the very first time) or change more than three hundred TRVs for chemicals regulated under CAO**. The vast majority of the proposed TRV revisions set entirely new toxicity values (197 new proposed values) or make existing values more stringent (i.e., decrease them). Moreover, many of the proposed new and revised TRVs were set by DEQ with internal input from OHA as opposed to being established by other, better-resourced sources recognized as authoritative by the CAO rules (such as California's Office of Environmental Health Hazard Assessment). In the proposed TRV revisions, the number of TRVs for which DEQ is listed as the authoritative source has dramatically increased as compared to the currently adopted TRVs. If adopted, the proposed comprehensive overhaul of the TRVs will immediately render compliance with the CAO program substantially more challenging and potentially impossible (cost prohibitive) for Oregon businesses.

Despite the enormous potential consequences of this rulemaking to Oregon businesses, and despite DEQ's best intentions, DEQ's process for reviewing the TRVs with the ATSAC's input has been inadequate. The CAO program's core purpose, enumerated in OAR 340-245-0005, is to be "science-based" and to reflect "verified science and data." However, to date, DEQ's ATSAC review has been primarily an endorsement of the overall process without including the attention to detail for individual chemicals that is needed to fulfill the CAO program's purpose.

In all, DEQ and OHA hosted three, 180-minute long meetings with the ATSAC to discuss all but two of the proposed TRV changes.[2] Of DEQ's total meeting time with the ATSAC, less than two minutes was available for each of the more than three hundred chemicals for which DEQ has proposed TRV changes. In reality, the ATSAC spent much less time discussing the scientific basis for the proposed TRVs because much of the meeting time was spent on the process of ATSAC's review. What is more, DEQ did not invite the regulated community, through their representatives, to present any technical questions or input to ATSAC.

OBI respects that ATSAC is comprised of volunteer members, and we appreciate their service. However, we question whether it is reasonable or appropriate to expect even that select group of part-time

[2] DEQ hosted two separate ATSAC meetings (one for each chemical) for the TRVs for manganese and DPM.

volunteers to complete the rigorous reviews necessary to support the multitude of changes to the TRVs currently under consideration. Certainly, as at least one ATSAC member reported to DEQ, such an all-encompassing review of the TRVs has not yet been possible in the time afforded ATSAC to complete that substantial task.[3]

Over the course of this year, various OBI members engaged independent toxicologists from ToxStrategies – a highly-respected consultancy with significant experience working with state and federal agencies to assess inhalation toxicity values for regulatory purposes – to review the TRVs for ten chemicals with the potential to significantly impact CAO risk assessments. Those ten proposed TRVs were selected for review due to their potential to have an outsized impact on CAO risk assessments. The proposed TRVs reviewed by ToxStrategies included those for the following chemicals: hydrogen chloride (HCL), perfluorinated compounds, fluoride, amorphous silica, naphthalene, vanadium, trivalent chromium, cobalt, nickel, and lead.

ToxStrategies' review of just these few TRVs required hundreds of hours of analysis of the underlying authoritative source and toxicological data. In their review, Tox Strategies identified scientific flaws, issues or concerns with the proposed TRVs for all of the chemistries reviewed.

For instance, DEQ's proposed TRV for acute nickel exposure is based on a very recent Toxicological Profile prepared by the Agency for Toxic Substances Disease Registry (ATSDR) that ATSDR has since removed from the agency's website for further review. On the substance of that proposed TRV, ToxStrategies found that the withdrawn ATSDR profile cannot support an acute TRV (set for 24-hour exposures in the CAO program) because the underlying study reviewed by ATSDR was based on an exposure duration spanning multiple days.

As another example, consider hydrogen chloride, for which a time adjustment was proposed by DEQ to set the acute TRV using a study reporting irritant effects. As a toxicological matter, however, no time adjustment is required for sensory irritants. Of particular note, ATSAC member Dr. John Budroe commented during the review meeting on February 7, 2025 that time adjustments do not apply to chemicals that act by sensory irritation.[4] Yet, it is entirely unclear if DEQ appreciated that comment should apply to the proposed acute TRV for hydrogen chloride.

The table below lists the proposed TRVs that ToxStrategies' determined warrant further review and briefly summarizes the scientific flaws, issues or other concerns with those TRVs.

[3] DEQ sought and elicited written feedback from ATSAC members about the three meetings at which ATSAC was assigned the task of considering the TRV changes. In response to the question "what was your experience like preparing for this review process as an ATSAC member," ATSAC member John Budroe wrote: "There were 197 new TRVs and 107 changed TRVs = 304 TRVs proposed for review. That was a pretty substantial number of chemicals to review in the time from [sic] the review materials were made available to the meeting dates. It would have been useful if the review materials (especially Workbooks 1 and 2) had been provided farther in advance of the meeting (an additional 2-4 weeks)."

[4] At approximately at 1 hour and 46 minutes of the recording for the February 7, 2025 meeting https://www.youtube.com/watch?v=FKekvexRvqQ.

Chemical	Proposed TRV Endpoint	Significant Issues
Amorphous silica	Chronic	Narrowly focused toxicity data (fumed silica) was inappropriately applied to a very broad category of all amorphous silica.
Chromium (III)	Chronic	Authoritative sources do not provide the basis for the proposed chronic TRV for soluble Cr(III). Chromium in alloy form should be exempted from this TRV.
	Acute	Authoritative sources do not provide the basis for the proposed acute TRV for soluble and insoluble Cr(III). Chromium in alloy form should be exempted from these TRVs.
Cobalt and compounds	Insoluble Acute, Chronic, and Cancer	The proposed TRVs for insoluble cobalt are based on studies of exposure to cobalt forms that are freely soluble in lung biological fluids. The cobalt TRVs should be limited and specific to cobalt forms that are soluble in biological fluids.
	Soluble Acute, Chronic and Cancer	Specify that *in vitro* inhalation bioaccessibility tests may be used with the soluble cobalt TRVs to assess cobalt's potential to be bioavailable and potentially pose a health concern. This is consistent with the guidance of the authoritative source, California's Office of Environmental Health Hazard Assessment (OEHHA), which explicitly exempts cobalt in alloy form (e.g., steel) from the TRVs for insoluble and soluble cobalt because cobalt in alloy form is not soluble in biological fluids.
Fluoride and inorganic compounds	Acute	Narrowly focused toxicity data for hydrogen fluoride was applied for all inorganic fluoride compounds without underlying toxicological data. The TRVs should be specific to hydrogen fluoride.
Hydrogen chloride	Acute	The proposed TRV includes an improper time adjustment for a chemical with short-term sensory irritant effects; see comment above from ATSAC member Dr. Budroe.
Hydrogen chloride	Chronic	Proposed chronic TRV is improperly based on authoritative sources (EPA and OEHHA) with highly dated values, and which both applied outdated and incorrect Regional Gas Dose Ratios (RDRGs) in their derivations. EPA's current guidance regarding RGDRs should be used to set a chronic TRV.
Lead and compounds	Acute	The proposed acute TRV is incorrectly based on the national ambient air quality standard, which was developed to be applied as a three-month average concentration, not for 24-hour exposures. EPA's All Ages Lead Model (AALM) demonstrates that a much higher value acute TRV would be protective of 24-hour exposures and should be proposed, consistent with the definition of an acute TRV.
Naphthalene	Acute	ATSDR used outdated EPA guidance for dosimetric adjustment and poor model selection, which DEQ, in consultation with ATSAC, should update in proposing any adjustment to the acute TRV.

Chemical	Proposed TRV Endpoint	Significant Issues
Nickel and compounds	Acute	The very basis for the proposed TRV, i.e., the Agency for Toxic Substances Disease Control (ATSDR) Toxicity Profile, has been removed by ATSDR to "evaluate calculations," and should not be used as the basis of an acute TRV. An alternative has been suggested based on a recent study consistent with 24-hour exposure duration of an acute TRV.
Perfluorinated Compounds (10 individual compounds reviewed)	Chronic	It is premature to develop inhalation TRVs for these compounds because only very limited inhalation toxicity data exists, and there is significant uncertainty in extrapolating oral toxicity data for inhalation exposures. No authoritative sources have set inhalation exposure values for these compounds.
Vanadium and compounds	Acute, Chronic, and Cancer	Narrowly focused toxicity data for vanadium pentoxide was inappropriately applied to all forms of vanadium. The TRVs should be specific to vanadium pentoxide.

The attached technical memoranda, produced by ToxStrategies, detail the toxicological concerns with the proposed TRVs listed in the above table and, for each, include recommendations for how DEQ should proceed. Collectively, ToxStrategies' memoranda demonstrate that it would be inappropriate for DEQ to include these proposed TRVs in the current rulemaking process.

In light of ToxStrategies' findings, **OBI requests that DEQ remove from the current rulemaking the proposed TRVs that ToxStrategies evaluated for which it has recommended further technical review (ten chemicals or chemical groups). For those proposed TRVs, OBI calls on DEQ and OHA to complete further technical evaluation informed by and open to input from the regulated community. Specifically, OBI requests that DEQ present ToxStrategies' analyses to ATSAC and request that ATSAC provide substantive feedback on the proposed TRVs assessed by ToxStrategies**.

The issues identified by ToxStrategies warrant further analysis and regulatory consideration akin to the attention that DEQ, OHA and ATSAC gave to the petition submitted in 2022 requesting revision of the TRV for acute exposure to manganese. Upon closer review of that TRV, the agencies and ATSAC concluded that it was not grounded in science, and determined that the manganese TRV required revision. Based on ToxStrategies' assessments, OBI anticipates similar outcomes following the agencies' scrutiny of the proposed TRVs that ToxStrategies analyzed.

To reiterate, **OBI urges DEQ to not include the proposed TRVs, which are identified in the attached technical memoranda, in the current TRV rulemaking**. Adoption of any of these proposed TRVs will have real-world, negative ramifications on Oregon businesses subject to CAO review, while simultaneously producing unrepresentative risk values. Given that each of the proposed TRVs carries significant scientific uncertainty, we expect that – before moving forward – DEQ should want to engage with OHA and ATSAC to consider the evaluations completed by ToxStrategies to fulfill DEQ's objective of ensuring that the TRVs used in the CAO Program are science-based.

Toward that same objective, **OBI also requests that DEQ amend the current rulemaking process to include a technical review element**. To date, OBI's members have had the time and resources to cause

ToxStrategies to scrutinize just a select handful of the proposed TRVs that DEQ proposes to adopt in this rulemaking. Nonetheless, DEQ recently proposed to convene a rulemaking advisory committee to meet just four times between now and early 2026 before DEQ recommends rules for EQC's adoption that include the entire set of proposed TRVs. With respect, OBI is concerned that such a limited rulemaking process — which lacks adequate attention to or the agencies' receipt of technical input from the regulated community on the scientific bases for the TRVs — cannot ensure the TRV set adopted into the CAO rules will achieve the program's purpose of being science-based.

For these reasons, **in addition to requesting that the specific TRVs addressed by ToxStrategies' work be further evaluated by DEQ, OHA and ATSAC before being included in any TRV rulemaking, OBI also asks that DEQ amend the current rulemaking process to incorporate additional time for careful, toxicological review and discussion between the regulated community and DEQ, OHA and ATSAC**.[5]

OBI seeks and looks forward to an opportunity to discuss with you the issues raised in this letter.

Sincerely,

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Senior Policy Director

cc: Ali Mirzakhalili
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Rep. Emerson Levy
Rep. Mark Owens
Rep. Daniel Nguyen

[5] OHA and ATSAC should also seriously consider the level of uncertainty built into the proposed TRVs in light of the conservatism incorporated into other aspects of the CAO program. Often, the TRVs include uncertainty or other correction factors that lower the TRVs by orders of magnitude. These values are then used as part of risk calculations in the CAO program that also include significant levels of conservatism in both the emission calculations and the dispersion modeling results. The application of conservatively established TRVs with high uncertainty adjustments to CAO's already highly conservative risk assessment methodology will not produce representative risk values and, as a result, will both misinform the public and pose an even greater threat to the future of Oregon's businesses.

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