State of Oregon
DEQ Department of Environmental Quality

Cleaner Air Oregon Toxic Air Contaminant Review and Update Rulemaking Advisory Committee (RAC)

Meeting 3: May 21, 2026, 9 a.m. - 12 p.m. PT / Zoom

Meeting slides are available on the rulemaking website (link).

Meeting Attendees

RAC Members: Travis Quarles - Bridgewater/Trinity Consultants, Deborah Proctor – ToxStrategies, Geoffrey Tichenor - Stoel Rives, Jim Spahr - Cascade Steel Rolling Mill, Cassandra Jackson - Port of Portland, Crystal Weston - Oregon Environmental Council, Jonah Sanford - Northwest Environmental Defense Center, Cheyenne Holliday – Verde, Molly Kile - Oregon State University, Mary Peveto - Neighbors for Clean Air, Nadège Dubuisson - Multnomah County Health, Kathleen Johnson - Washington County Health, Patricia Kullberg - Oregon Physicians for Social Responsibility, Beth Ryder - Trinity Consultants, John Bird - Roseburg Forest Products

Project Team: Ali Mirzakalili - Oregon Department of Environmental Quality (DEQ), Apollonia Goeckner – DEQ, J.R. Giska – DEQ, Mike Poulsen – DEQ, David Farrer - Oregon Health Authority (OHA)

Facilitation Team: Ben Duncan - Kearns & West, Angela Hessenius - Kearns & West

Meeting Minutes

Welcome and Introductions

J.R. Giska, Oregon Department of Environmental Quality (DEQ), welcomed attendees to the Cleaner Air Oregon Toxic Air Contaminant Review and Update Rulemaking Advisory Committee (RAC) Meeting #3 and thanked the RAC members for their participation in this rulemaking process. J.R. shared that the group had very productive discussions where several committee members provided feedback, comments, and input regarding the priority list and the Toxicity Reference Values (TRVs), during the previous RAC meeting, and that this meeting will be a continuation of those discussions.

Ben Duncan, Kearns & West (K&W) facilitator, reviewed the Zoom webinar protocols and meeting guidelines and facilitated introductions from the RAC members and the DEQ-OHA project team.

J.R. reviewed the meeting agenda.

Toxicity Reference Values (Cont.)

Ben opened the continuation of the discussion from the previous meeting on the proposed Toxicity Reference Values (TRVs), inviting RAC members to provide additional information and comments.

TRV Discussion

- **Travis Quarles** shared that there was significant discussion on diesel particulate matter (DPM) during the previous meeting and that this has also been discussed with the Air Toxics Science Advisory Committee (ATSAC). Travis noted that for DPM, the risk calculated should be inclusive of components within the DPM (e.g., polycyclic aromatic hydrocarbons (PAHs) and metals) and not double count that risk, and that RAC members were looking for clarification on how this will be addressed.
- **J.R.** responded that this question will be addressed during the next RAC Meeting on implementation. TRVs are the values based on toxicity information; the TRVs are used to set the Risk Based Concentrations (RBCs) based on scientific and exposure assumptions, and then the third step is determining how these values are used in a risk assessment. Given the interest in this topic, there will be a robust discussion dedicated to DPM during the next RAC Meeting on implementation.

- **Travis Quarles** commented that regarding PAHs, there are several references in the support materials to the Minnesota Department of Health, but these links have been removed from the Minnesota Department of Health website and the website states that this guidance is outdated.
- **David Farrer, Oregon Health Authority (OHA),** shared that this is a recent change that DEQ and OHA are aware of and agree needs to be addressed.
- **Deborah Proctor** commented on the cancer TRV for arsenic. Deborah shared that the current value is consistent with EPA's value from 1995, but that the Texas Commission on Environmental Quality has done a more recent analysis that is based on the same two epidemiological studies but is more statistically robust. Deborah asked if DEQ and OHA in consultation with the ATSAC would review this newer study and consider revising the cancer TRV for arsenic.
- **David** encouraged Deborah to submit these comments in writing for DEQ and OHA's consideration.

Risk Based Concentrations (RBCs)

Mike Poulsen, Oregon Department of Environmental Quality (DEQ) reminded the RAC members that they reviewed the development of RBCs from TRVs during the first RAC meeting, including how to combine toxicity information and exposure information to calculate the RBCs. DEQ also prepared supplemental materials related to the RBCs including the Adjustment Factors Supporting Document and the MPAF Spreadsheet Tool.

RBC Discussion

- **Patricia Kulberg** asked how and where in the TRV and RBC development process adjustments are made to account for sensitive populations.
- **Mike** responded that the TRVs are developed based on the most sensitive members of society, so that accounting is already embedded in the derivation of the TRVs. In addition, in the RBC development process, there are cases in which DEQ looks at the segment of society that has the highest exposure, such as infants and young children that have higher incidence of soil ingestion.
- **David** added that, when possible, agencies choose studies that include the most sensitive population, but this data is not always available. Another way that OHA factors in sensitive populations is by adding an uncertainty factor for intraspecies variability (human-to-human variability) that is typically a factor of ten, which assumes that the most sensitive person in a population might be ten times more sensitive than the average person. Most of the TRVs include this uncertainty factor; the only reason it would be excluded is if the study was based on humans in the most sensitive population group. This uncertainty factor is not specific to why a certain population would be more sensitive (e.g., ethnicity, life stage, pre-existing conditions).
- **Mike** added that in addition to the inhalation TRVs that David described, this uncertainty factor for sensitive populations is also applied to the oral and dermal exposure toxicity values that are used in the multi-pathway adjustment to make sure that they are covering the most sensitive members of a population.
- **Deborah Proctor** asked whether the values in the multi-pathway adjustment factors (MPAFs) for the soil ingestion rates for different age groups are the mean, median, or another statistical value.
- **Mike** responded that DEQ would check and confirm.
- **Deborah Proctor** asked to clarify that DEQ uses the highest soil ingestion rates for non-cancer TRVs (acute and chronic) and uses the long-term average for cancer TRVs.
- **Mike** confirmed that this is correct.
- **Deborah Proctor** asked how that approach is consistent with using deposition quantification in the model for 70 years.
- **Mike** responded that the 70-year deposition quantification is for the deposition into the soil over a long period of time that leads to concentration in the soil, and then a child would be exposed to that concentration.
- **Crystal Weston** commented that for some of these technical questions, it would be helpful to submit in writing so that DEQ and OHA could respond.
- **Mary Peveto** shared a reminder that the Cleaner Air Oregon program was developed following a community crisis that included the deposition of very harmful toxics at a daycare facility next to an industrial facility. Therefore, this program is not a theoretical exercise but rather a practical opportunity to develop systemic protection for communities in Oregon reflective of this real experience.

- **Geoff Tichenor** asked for clarification on the process by which written questions might be answered in advance of proposed rulemaking where the materials provided do not yield clear answers.
- **J.R.** responded that DEQ will likely offer office hours again between this meeting and the next RAC meeting so that DEQ can follow up with RAC members, walk through the tools and materials, and make sure that the RAC members have the answers they need. There will also be a period following the last RAC meeting during which RAC members can submit comments, and DEQ can meet with RAC members as necessary for follow-up to discuss or clarify the questions and responses.
- **Mike** added that the original source of the equation for the deposition of the soil is the South Coast Air Quality Management District and their risk assessment guidance document, which is the same source as the original rulemaking.
- **Deborah Proctor** asked whether DEQ would update their default assumption of the soil ingestion rate for arsenic of 60% (which EPA and CalEPA also use) in the RBC process by doing additional testing of arsenic emissions to determine site-specific relative bioavailability.
- **Mike** responded that this would not be done as part of the default calculation for RBCs, but it could be a consideration for a site-specific Level 4 Risk Assessment, in which DEQ accounts for modifications beyond the default assumptions.
- **Crystal Weston** commented that if DEQ had more robust funding, then they could conduct soil tests that would yield more accurate numbers than modeling. Since the modeling does not account for multiple facilities that could be depositing bioaccumulative compounds in the same area or for historic uses, it is possible that the proposed levels are not protective enough. Additional testing of the soil would be helpful to have more exact data.
- **Mary Peveto** commented that this process of setting the values should be grounded in science to establish risk-based and health-protective tools for analysis. Mary suggested that the group separate the conversation about the complexity of implementation and have that conversation at a later time.
- **Geoff Tichenor** responded to Mary's comment and shared that there are complexities in the application of science in the Cleaner Air Oregon (CAO) program that reflect policy decisions, and that ToxStrategies is trying to better understand the scientific decision-making processes and call attention to potential new avenues for evaluation. Geoff noted that the rules require prioritizing public health and balancing that with the need to ensure that there is a thriving business community. Where there are values that could meaningfully impact businesses, the RAC should make careful choices about whether they are utilizing the best available science.
- **Crystal Weston** responded and emphasized that the ATSAC process has scientific integrity because it was conducted specifically to avoid any conflicts of interest. The risks being discussed represent real people and real health outcomes, and having emotions and caring about these outcomes does not indicate a lack of scientific reason.
- **Deborah Proctor** commented that in the MPAF tool, the absorption factor for arsenic is 0.6 and the absorption factor for lead is 1, but there is a default absorption factor for lead that is similar to arsenic. Deborah also asked whether the MPAFs are for both acute and chronic TRVs.
- **Mike** responded, clarifying that the MPAFs are for chronic TRVs, not acute TRVs. Mike also suggested that Deborah submit written comments if she would like DEQ to consider using a different absorption factor for lead.
- **Deborah Proctor** asked how the plant uptake and ingestion rates were modified from the previous rates.
- **Mike** responded that DEQ modified the default assumptions that were used previously that are based on the South Coast Air Quality Management District methodology, and the updates were partially based on site-specific experience. DEQ adjusted the upper percentile that was used from the 95th percentile to the 75th percentile based on other authoritative sources and the fact that there is greater uncertainty at the higher ranges, and they felt that the 75th percentile was a reasonable maximum based on that uncertainty while still being health protective.
- **Deborah Proctor** commented that separating child and worker MPAFs is the right approach.
- **Deborah Proctor** asked about the discussions around the selection of which values to use, those developed by EPA or by OEHHA, for the early life adjustment factors (ELAFs).
- **Mike** responded and clarified that DEQ is using the age adjustment factors developed by EPA.
- **Nadège Dubuisson** asked whether in utero exposure is represented in the ELAFs, or if that risk is represented elsewhere.

- **Mike** responded that the multi-pathway and early life adjustment factors are for infants and beyond (including breastfeeding), not for fetuses. The inhalation TRVs may be based on developmental effects which could occur in utero.
- **Travis Quarles** and **Deborah Proctor** asked to clarify whether the third trimester early life adjustment factor of ten is applied.
- **Mike** responded that DEQ will look in more detail into this and the potential impacts on the calculations.
- **Molly Kile** asked how the intake rates were derived and what source they came from, and whether they are differentiated for children and adults. The default intake rate that is set influences, and is typically incorporated into, the exposure value. Children have a higher breathing rate than adults, so their intake rate (for both ingestion and inhalation) is higher.
- **Mike** responded that DEQ's current approach is based on air concentrations rather than on dose relative to body weight or inhalation rate. DEQ will follow up with Molly to make sure this question is answered and addressed.
- **Travis Quarles** commented that another part of this rulemaking is that for new and changed toxic air contaminants (TACs), a hazard index of 3 or 5 is also being assigned for those chemicals. Following the first TRV rulemaking, there was a separate rulemaking on the process for determining which chemicals had a hazard index of 3 or 5. For a specific TAC, n-Propylbenzene, ethylbenzene is used as a surrogate for that, and it may not be appropriate to assume developmental effects based on a surrogate chemical. There were a few other TACs in which "some evidence" of developmental effects is listed as the reason for an HI3 classification, but there is not a lot of detail available about how those designations were made, and additional documentation would be helpful.
- **J.R.** responded and shared that DEQ used the established methodology from the previous HI3/HI5 rulemaking to designate the chemicals. It is not part of this rulemaking to update that methodology but is helpful to receive feedback on the designations of the new TACs. J.R. encouraged Travis to submit a written comment.
- **David** added that HI3/HI5 derivation materials are available under the supplemental materials section of the rulemaking website. The criterion that was used to qualify a TAC as an HI3 is documented in a column in the spreadsheet. David thanked Travis for sharing the feedback that there could be more detailed information and references in the spreadsheet. In general, the methodology used was that DEQ and OHA checked the lowest observable effect levels in the health effects section of ATSDR's toxicological profiles for a developmental or reproductive effect.
- **Crystal Weston** commented that in her experience working with government toxicologists, it is not typical to overstate or exaggerate statements about evidence.
- **Patricia Kullberg** commented that community members who are not environmental scientists often face significant barriers to participating meaningfully in these discussions.

Rule Language Changes

J.R. introduced the proposed rule language changes. Based on the significant amount of work needed to review and propose updates in this rulemaking, DEQ has determined that a three-year schedule is not feasible or sustainable. DEQ is proposing updates to the language in Division 247, Rule 40 for the "Process for Updating the Lists of Priority Toxic Air Contaminant List and Toxicity Reference Values" for revising the schedule from every three to every five years. Additionally, DEQ is proposing to include the "or as necessary" language, which is already included in the TRV review frequency language, in the Priority List language for consistency.

As Mike noted in the Risk Based Concentrations (RBC) discussion, DEQ has made some updates to the underlying exposure assumptions used to calculate the multi-pathway adjustment factors (MPAFs). For nonresidential child exposure locations, DEQ is proposing to update these assumptions to align with DEQ and EPA risk assessment practices of using the most health protective soil ingestion rates. This means that the assumptions will be based on the 0–2-year-old age range, rather than an average value. DEQ is proposing rule language updates that would allow more flexibility for sources performing risk assessments to modify this specific assumption. Currently in rule, a source would need to perform a Level 4 Risk Assessment to make adjustments to exposure assumptions – this requires a significant cost increase relative to a Level 3 Risk Assessment. DEQ is proposing to allow sources to modify the age range for soil ingestion for nonresidential exposure locations if there are only children of specified age ranges exposed at that location without having to perform and pay for a Level 4 Risk Assessment. Examples of this would be middle school, junior high, or high

schools that do not have day care facilities for infants in the 0–2-year-old range. In these cases, DEQ would allow adjustment of the soil ingestion age ranges from 0-2 to the appropriate ranges at that location. The proposed new language would be under a new subsection of the rules covering Modeling and Risk Assessment Work Plans.

Rule Language Discussion

- **Crystal Weston** asked how the proposed approach to soil ingestion rates would account for young people with disabilities who are at the middle or high school level who might have greater contact with soil relative to their age due to developmental differences.
- **Mike** responded that this is currently not included in the proposed approach, which would be conservative soil ingestion rates based on age groups, but that this is something that DEQ could consider.
- **Mary Peveto** commented on the proposed change from the three-year to the five-year review period. Given the agency's inability to meet the original three-year deadline and the lack of consequences, what assurances could be added to ensure the public that the five-year deadline will be met and is enforceable?
- **J.R.** responded that since this is the first time the agency went through this TRV review and update process, there was a lot of infrastructure that needed to be created, and there will likely be efficiencies in future TRV review processes. For accountability mechanisms, DEQ is open to hearing feedback and suggestions on what RAC members would like to see included and noted that DEQ would be subject to being challenged by external parties if they do not meet the deadlines outlined in rule.
- **Ali Mirzakalili, Oregon Department of Environmental Quality (DEQ),** added that there is a requirement for DEQ to report to the Environmental Quality Commission (EQC), and that the EQC and the Director hold the agency accountable, which aligns with DEQ's five-year report to the Commission as part of their program updates.
- **Mary Peveto** shared that given the institutional knowledge that DEQ has built through the first TRV review and update process and the potential for efficiencies, the reasoning behind the proposed change from the three to five-year review period is less clear. Mary asked if there were other reasons besides the length of the TRV review process that are scientifically valid based on the integrity of the program introducing the best and latest scientific information into the TRV determinations.
- **J.R.** responded that DEQ these rulemaking processes take a significant amount of staff time, and DEQ must balance that with implementing the program as well. DEQ feels that five years is still an acceptable window given the rate of scientific progress. J.R. also pointed out that DEQ preserves the right and authority in the rule language to conduct updates as necessary if new scientific information becomes available that they need to consider. Overall, DEQ needs to balance the rate they are seeing science change with the rate that they can sustain these rulemakings.
- **David** added that there is not a clear scientific answer to the optimal frequency of review. Science is always advancing, and it is a policy decision of how often to conduct these reviews. Part of the intent behind the original three-year review window was to try to be above average compared to other agencies, and part of what DEQ and OHA learned during this first review process is that it does take five years to complete.
- **Jonah Sandford** asked if DEQ has situations in mind that would trigger the "as necessary" review and whether it would be helpful to explicitly spell out what those situations might be in the rule itself.
- **J.R.** responded that it would be helpful for RAC members to submit written feedback if they have suggestions on potential language that could be added for the agencies to consider.
- **Crystal Weston** shared concerns about the proposed five-year review timeline and the "or as necessary" clause. How would a community know if their exposures necessitated any kind of review, particularly communities with less power and privilege? Crystal shared concern that the "or as necessary" language is insufficiently specific for the public to be able to know when it would be triggered and for there to be accountability.
- **Geoff Tichenor** shared comments on the proposal to adjust the frequency of reviewing TRVs from a three- to five-year cadence. It is important to ensure now that the TRVs that will be proposed for promulgation by the EQC is based on best available science, and to engage in the inquiry that the regulated community has proposed be undertaken for the chemistries of particular interest. Additionally, in the transition to a five-year cadence, the use of petitions to request that TRVs be made more stringent or more relaxed as science develops in the interim period becomes especially important to

bring new science to DEQ and OHA's attention. Regarding the other proposed language changes that would allow modifications to default soil exposure assumptions without requiring a Level 4 Risk Assessment, Geoff asked if DEQ would consider allowing modifications to the default plant ingestion assumptions without requiring a Level 4 Risk Assessment.

- **Molly Kile** commented on the proposed change to a five-year review cadence, noting that the regulatory consensus that leads to reference values takes time and that these numbers do not change frequently. Given the dependence on the authoritative sources that are listed in the statute, the shift to a five-year cycle is reasonable given that the time it takes for the regulatory agencies to establish those values is also on a five-year cycle.
- **Crystal Weston** commented that the DEQ fees for Level 4 Risk Assessments are too low if the proposal to go to a five-year review schedule is due to a lack of capacity.
- **John Bird** commented that the practical implications of changing from a three-year to a five-year review cycle is that since the rulemaking process requires time and resources, decreasing the frequency of the reviews will increase DEQ's ability to complete more risk assessments, which is a positive change from an implementation perspective.
- **Beth Ryder** commented that since there is a large change in the diesel particulate matter (DPM) TRV that will have a large impact on many different types of facilities, it would be helpful to better understand why the standards are different in California and Washington compared to Oregon even though the basis for the TRVs is the same. California and Washington look at filterable particulate matter coming from a diesel engine, whereas Oregon uses Oregon Method 5 which looks at both filterable and condensable particulate matter.
- **J.R.** responded that the RAC could discuss this further during the next meeting, and DEQ can take time to formulate a response to this question.
- **Beth Ryder** noted that diesel generators have different purposes at different facilities, but that they all have requirements for the frequency of operation, and a Level 1-3 risk assessment assumes continuous exposure to all these pollutants. Beth commented that the consideration for the frequency of exposure seems unaddressed at this point and that there might be approaches to support more realistic estimations of exposure. Additionally, Beth asked how the potentially stark difference between the amount of diesel permitted and the amount emitted might be addressed.
- **J.R.** noted that if any RAC members have any information to provide before the next RAC meeting, DEQ will share those materials with all the RAC members to help inform the discussion.

Final Comments

Ben invited RAC members to share any additional reflections or comments during the final roundtable discussion.

Final Roundtable Discussion

- **Mary Peveto** commented that prior to the crisis in 2016 that led to the development of the Cleaner Air Oregon (CAO) program, it was very difficult for the public to determine what was legal versus what was safe for public health, which created many points of conflict. Mary shared that the CAO program has shown that it has been effective to create the regulatory tool needed to address risk and that there has been a dramatic improvement in developing a regulatory system that is based on scientific evidence. Mary expressed appreciation for the work and intentionality of the agency, including the Air Toxics Science Advisory Committee (ATSAC) process that was very strong.
- **Beth Ryder** commented that currently there is a requirement to submit three separate reports (the AQ520 form, the modeling protocol and risk assessment work plan, and the risk assessment). Beth shared an interest in speeding up this process and requested that DEQ consider updating the rule language to recommend these steps and consultation with DEQ without requiring the creation of additional reports that might not be necessary.
- **J.R.** responded that proposing specific rule language changes in writing would be helpful, and that this topic may also apply during the implementation discussion during the next RAC meeting.
- **Crystal Weston** emphasized that this program is doing a good job using scientific findings to protect communities from air quality risks. Especially given federal rollbacks, this underfunded program is protecting public health in a critical way, and efforts to weaken it would be misplaced.
- **John Bird** asked if there is a timeline for when written comments will need to be submitted by.

- **J.R.** responded that DEQ will present that timeline and next steps during the next RAC meeting on June 30, 2026.

Public Input

Ben invited members of the public to provide comments. This is an opportunity for members of the public to provide informal public input and information that they would like the RAC members to consider while discussing this rulemaking. Ben clarified that this is not a formal public comment period. The public will have an opportunity to provide formal oral comments during the public hearing for this rulemaking and written comments during the subsequent public comment period.

- **Snigdha Mehta, Geoengineers,** commented regarding exposure time for acute TRVs. DEQ has a policy of a 24-hour exposure time to evaluate acute impacts. However, the maximal exposed individual receptor may not be exposed for 24 hours, and that makes the acute hazard index calculations overly conservative. DEQ should consider ways to refine those acute estimates to be more realistic.

Conclude Meeting #2

J.R. thanked the RAC members for their participation and providing valuable input during RAC Meetings #2 and #3 and reviewed the next steps for the RAC members. The next and final RAC Meeting #4 will be held on June 30, 2026, and will provide opportunities for the RAC members to present information to DEQ to consider related to the implementation of these rules as well as the fiscal and economic impacts of the proposed rules. This meeting will serve as the formal fiscal advisory committee meeting. Ahead of this meeting, DEQ will provide materials for the RAC members to review including a draft fiscal impact statement and proposed implementation plans. J.R. invited RAC members to submit any additional information for the agencies to consider related to the technical aspects of the proposed rules via email to caotrv.2026@DEQ.oregon.gov and to reach out to DEQ staff with any questions. DEQ will also send an email to schedule office hours with any RAC members who would like to have follow-up discussions from this meeting.

Ali appreciated the RAC members for their time, expertise, and contributions.

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