PESTICIDE REGISTRATION AND EVALUATION COMMITTEE (PREC)
Meeting Minutes – March 21, 2025

Committee Members/Alternates in Attendance:

Elizabeth Marder – Department of Public Health (CDPH)
Fabiola Estrada – U.S. Environmental Protection Agency (EPA), Region 9
Garrett Keating – Department of Industrial Relations (DIR)
Kristen Pidcock – Department of Resources Recycling and Recovery (CalRecycle)
Krista Hoffmann – Department of Fish and Wildlife (DFW)
Katherine Sutherland-Ashley – Office of Environmental Health Hazard Assessment (OEHHA)
Fatemeh Ganjisaffar – California Department of Food and Agriculture (CDFA)
Wendy Linck – State Water Resources Control Board (SWRCB)
Jonathan Williams (alternate) – SWRCB
David Fairman (alternate) – SWRCB
Stan Armstrong – Air Resources Board (ARB)
Mai Ngo – Department of Toxic Substances Control (DTSC)
Kari Arnold – University of California (UC), Davis, IR-4 Program and Environmental Toxicology
Stephen Scheer – CA Agricultural Commissioners and Sealers Association (CACASA)
Tulio Macedo – Department of Pesticide Regulation (DPR)

Visitors in Attendance:
Note: Only attendees who identified themselves using their full name are listed below

Amanda Albers
Anne Katten – California Rural Legal Assistance Foundation
Barzin Moradi – California Department of Food and Agriculture (CDFA)
Chris Hassinger
Emily Saad – Exponent
Frida Mendez
Hamed Madaeni
James Nakashima – Office of Environment Health Hazard Assessment (OEHHA)
Jennifer Stafford – CSI
Jessie Cuevas
Jing Tao – OEHHA
Jonathon Milanese
Joshua Bingham – California Department of Food and Agriculture (CDFA)
Julius Reitemeier
Justine Weinberg – CDPH Occupational Health Branch
Karen Da Silva
Kevin Cammack
Lia Murty

Marcia Trostle
Mark Weller – Californians for Pesticide Reform
Michael Gross – California Department of Food and Agriculture (CDFA)
Natalie Krout-Greenberg – California Department of Food and Agriculture (CDFA)
Noah Beyeler
Savannah Gosselin
Stephanie Burton

DPR Staff in Attendance:

Aniela Burant – Environmental Monitoring Branch
Andrew Turcotte – Pesticide Registration Branch
Atac Tuli – Environmental Monitoring Branch
Brenna McNabb – Pesticide Registration Branch
David Mauss – Pesticide Programs Division
Elana Varner – Pesticide Registration Branch
Jazmin Johnson – Environmental Monitoring Branch
Jolynn Mahmoudi-Haeri – Pesticide Registration Branch
JT Teerlink – Pesticide Programs Division
Laurie Brajkovich – Pesticide Programs Division
Manomita Patra Bhowmik – Pesticide Evaluation Branch
Maziar Kandelous – Environmental Monitoring Branch
Nan Singhasemanon – Pesticide Programs Division
Sidney Bastura – Enforcement Headquarters Branch
Taylor Whitehill – Pesticide Registration Branch
Tony Cantrell - Pesticide Registration Branch
Vince Aguirre - Pesticide Registration Branch
Whitney Smith - Pesticide Registration Branch
Yasuhiko Murata - Pesticide Registration Branch
Yvan Delagado – Environmental Monitoring Branch

1. **Introductions and Committee Business – Tulio Macedo, Chair, DPR**

   a. Approximately forty-five (45) people attended the meeting.
   b. Welcomed Wendy Linck, new PREC committee member representing SWRQCB.
   c. Reevaluation of Paraquat: DPR issued a notice of preliminary human health and ecological reports relative to the reevaluation of paraquat along with an informal comment period. The comment period closed March 17th. DPR is currently reviewing comments received.
   d. 1,3-dichloropropene: DPR issued a notice of proposed regulatory action for regulations concerning health risk mitigation for 1,3-dichloropropene on November 15, 2024, and the comment period closed on January 24. DPR and OEHHA are currently reviewing comments received on the proposed action.
   e. Chitosan: On January 31, DPR issued a notice of proposed regulatory action for

regulations concerning the addition of chitosan to the list of active ingredients allowed in exempted minimum risk pesticides. The comment closed on March 17, 2025. DPR is currently finalizing the rulemaking package.

f. Pesticide Prioritization Process: On April 8, DPR will host a Pesticide Prioritization Workshop. The purpose of the workshop is to share DPR's approach to developing a proposed pesticide prioritization process and structure for an advisory committee to inform this process. DPR will be seeking public comment on the proposed process and committee immediately following the workshop. Public comment will be accepted for 30 days after the workshop, through May 8, 2025

2. VOC Air Analysis – Error Identification and Correction – Dr. Mike Gross and Dr. Barzin Moradi, CDFA

The California Department of Food and Agriculture (CDFA) Center of Analytical Chemistry (CAC) is a regulatory lab, which maintains International Standards Organization (ISO) 17025 accreditations since 2004. The lab has a strong and independent quality assurance unit in charge of quality systems, internal audits, proficiency testing, and data review. Analytical services and investigational analysis are provided for regulatory and enforcement programs and agencies at the local level for counties, State of California, and federal government. The CAC has a specialized research and development team that develops new methodologies and evaluates current methodologies through numerous validations and quality assurance and control checks. CAC is committed to providing data of "known and documented quality" and is committed to complete transparency recognizing the importance of analytical data in decision making of regulatory and enforcement programs.

The Environmental Analysis section of CAC is responsible for analyzing pesticides in a variety of matrices including air, groundwater, and surface water. An error was identified through internal processes in the analysis of volatile organic compounds (VOCs) in ambient air. The CAC has analyzed VOCs for Department of Pesticide Regulation (DPR) Air Program since 2011. The analyses have targeted two fumigants methyl bromide (bromomethane) and 1,3-dichloropropene (1,3-D, cis- and trans- isomers). The samples are analyzed by specialized equipment in the laboratory that focuses the VOCs on traps prior to analysis by gas chromatography mass spectrometry.

In August 2024, CDFA identified a potential error with their VOC analysis through internal processes and immediately began a complete review and investigation. Through the review it was determined that standards used to quantitate methyl bromide and 1,3-D were prepared incorrectly. The effect of small changes in pressure on the final concentrations of standards were underestimated when prepared by static dilution by addition of partial pressures in canisters. The error became magnified as the method reporting limits were lowered consecutively in the following years and multiple dilutions were required for standard preparation. For the addition of partial pressures into canisters, an evacuated canister at -30 inches of mercury (inHg) is filled partially with a certified gas standard to a designated pressure and then further diluted with ultra-

high purity nitrogen to a final pressure. In this preparation, the canister was being filled to -17.5 inHg with the standard and then pressurized to 40 pounds per square inch gauge (psig).

Multiple equations may be employed for calculating the dilution of standard gas to working standards. The first equation is the dilution factor equation, or the final pressure divided by the receipt pressure:

$$Dilution\ Factor = \frac{14.7\ psig + P_f}{14.7\ psig(1 - \frac{RV\ (inHg)}{29.9\ inHg})}$$

where P_f is final pressure of the canister after adding standard and diluent gases and RV is the receipt vacuum of the canister, or the pressure of canister after adding standard gas. This equation has been used by CAC in multiple instances, typically when a canister is received under vacuum and had to be pressurized with nitrogen prior to analysis. The second equation is from the United States Environmental Protection Agency (U.S. EPA) toxic organics (TO) 15 method:

$$C_f = \frac{C_s(P_{sa} - P_{sb})}{P_f}$$

where C_f is the final diluted standard concentration, C_S is the stock standard concentration, P_{sa} is the absolute pressure of the canister after adding standard gas, P_{sb} is the absolute pressure of the canister before adding standard gas, and P_f is the final absolute pressure of the canister after adding standard and diluent gases. The first equation is solved for RV, using a dilution factor of 10 and a P_f of 40 psig. The second equation solves for P_{sa} using a C_f of 10 parts per billion volume (ppbV), P_{sb} of -30 inHg (-0.267 kPa absolute), and P_f of 40 psig (377.115 kPa absolute). Solving both of these equations results in values of -18.8 inHg and -18.9 inHg, respectively. Differences can be attributed to unit conversions.

Initial analyses were completed with a reporting limit of 1 ppbV, which only required a single tenfold dilution of the certified standard for analysis, 100 ppbV to a final concentration of 10 ppbV. The analyst prepared this standard by filling the gauge to -17.5 inHg with the certified standard and the pressurizing the canister to 40 psig. This resulted in a final standard concentration of 11.2 ppbV which was higher than the anticipated 10 ppbV.

The errors were magnified as reporting limits were lowered. In September 2011 the reporting limit was lowered to 0.1 ppbV and this required a second dilution to make a 1 ppbV working standard. First, a tenfold dilution of the 100 ppbV to 10 ppbV and then a second dilution from the 10 ppbV to a 1 ppbV final working standard. As a result, the error compounded. The final working standard had concentration of 1.26 ppbV versus the expected 1 ppbV.

Analysts continued to underestimate the effect of small changes to the pressure for filling the evacuated canister with the standard as this value was changed from -17.5 inHg to -17 inHg in May 2023 and to -16 inHg in June 2023. This resulted in final working standard concentrations

of 1.36 ppbV and 1.58 ppbV. The impact of underestimating the effect of the small pressure changes is that the intermediate and working standards were at higher concentrations than expected. Calibration curves were constructed from working standards using a mass flow controller that pulls air from these canisters at a designated flow rate for a set time. Sampling time and volume of air that was pulled from this working standard could affect the calibration curve concentrations, however, the changes in concentration were not instituted into the curve and the concentration levels remained the same as correctly prepared curves with no adjustment. The higher concentration of working standard would result in a greater response for each concentration level. As a result, there was underreporting of analytes for all the improperly diluted curves.

Corrections to the results determined from calibration curves constructed from the working standard determined a set of correction factors. For data analyzed from February 16, 2011 to August 29, 2011, data should be multiplied by 1.12. Data analyzed September 9, 2011 to March 23, 2023 are to be multiplied by 1.26. Data analyzed May 4, 2023 to May 25, 2023 are to be multiplied by 1.36. Lastly, data analyzed from June 1, 2023 to November 27, 2024 are to be multiplied by 1.58. Both DPR and CDFA have applied these correction factors to all data.

Besides correction factors, the analytical method for VOCs analyzing has been evaluated for further process improvements. The errors have created opportunities to improve the method including preparing standards through static dilution by the addition of known volumes into canisters using gas tight syringes, utilizing certified calibrated pressure gauge for final canister pressurization, and the use of multiple canisters at different concentrations and creation of standard curve while maintaining quality records of the standard preparation.

Committee Comment

Included with next presentation comments.

Public Comment

Included with next presentation comments.

3. **DPR VOC Air Analysis – 1.3-Dichloropropene and Methyl Bromide Updates – Dr. Aniela Burant, DPR**

The Department of Pesticide Regulation's (DPR) Air Quality and Monitoring team focuses on air monitoring and community engagement. DPR's Air Program conducts two long term monitoring studies. The first, the Air Monitoring Network, which has been in place since 2011, currently monitors for 40 pesticides, including 1,3-Dichloropropene (1,3-D) and methyl bromide at four locations across the state. Those sites are Watsonville, Shafter, Santa Maria, and Oxnard. DPR also conducts air monitoring for 1,3-D at two additional sites in the Central Valley. The Air Program has been monitoring for 1,3-D at Delhi and Parlier since 2016. The results of these

analyzes are published in Air Monitoring Reports and the Pesticide Air Monitoring Results (PAMR) Database <cdpr.ca.gov/environmental-monitoring/air-monitoring/>.

California Department of Food and Agriculture's (CDFA) Center for Analytical Chemistry conducts the analysis of 1,3-D through two methods. The first is a method using sampling pumps and charcoal tubes. This method is used for seasonal studies and the application site studies, including the five 1,3-D pilot studies that DPR conducted in 2010 and 2021, in support of the 1,3-D regulation development. The other method is using whole air sampling with canisters. This method is used for our long-term studies, the Air Monitoring Network and the 1,3-D monitoring study. This method also samples for methyl bromide. These air sampling canisters are used throughout the scientific community, and this method is based on an established United States Environmental Protection Agency (EPA) method for volatile organic compounds (VOC). The California Air Resources Board (CARB), has also performed analysis on canister samples from some of the long term monitoring sites between 2010 and 2020.

As discussed in the previous presentation, the CDFA lab notified DPR of an identified an error in the lab analyses conducted on air canister samples. The error affected samples analyzed between February 16, 2011 through November 27, 2020. The lab error resulted in the underreporting of 1,3-D and methyl bromide concentrations over this time period. It is important to note that canister samples analyzed by CARB were not impacted by this error. Approximately half of the 1,3-D samples were not impacted by this error. In addition, trace detections and non-detects were unaffected by this error.

So what was affected? Samples from February 2, 2011 to November 21, 2024. For that first correction factor, there were zero quantifiable detections during this time for both 1,3-D and methyl bromide. From August 19, 2011 through March 15, 2023, the correction factor was 1.26. and this is the largest time period and it affects the most samples. This affects 928 1,3-D samples and 331 methyl bromide samples, meaning the concentrations for these samples were underreported. For the two months between March 16, 2023 and May 11, 2023, the correction factor was 1.36. This affected ten 1,3-D samples and three methyl bromide samples, and then from May 12, 2023 through November 21, 2024, the correction factor is 1.58, affecting 52 1,3-D samples and three methyl bromide samples.

In total, this means that 990 (21%) of 1,3-D samples, and 337 (8%) of methyl bromide samples were affected. Samples in PAMR were detected at quantifiable levels and were affected by the error. There were 22 reports impacted by this error and 13 Air Monitoring Network reports impacted. The 2011 through 2016 comprehensive evaluation results, and eight annual reports regarding the 1,3-D study. Each report on the DPR website is now accompanied by a memo detailing the changes and impacts. The 2020 to 2021, 1,3-D Pilot Studies and the 2024 Stanislaus County Seasonal Study used a different analysis method and were not impacted. All of the updates to the Air Monitoring Reports and 1,3-D Monitoring Study are from 1,3-D and methyl bromide.

The main objective for both these studies is to evaluate long term pesticide concentrations in the air. The highest 24 hour concentration for comparison to acute regulatory targets or screening levels is reported. The highest 4 or 13 week average concentrations for comparisons to sub-chronic targets or screening levels, and the one year average concentrations for comparison to chronic screening levels. For 1,3-D, an average of all years of data for comparisons to the lifetime regulatory target. All values have been updated and are detailed in each memo. As an example, the 2016 concentrations: 2016 it's the first year for sampling Delhi and Parlier. So starting with Delhi in 2016, the corrected maximum 24 hour concentration is now 0.8 ppb, up from 0.63 ppb. However, the 2016 Oxnard data shows 2.9 for both corrected and uncorrected. During this time, the Oxnard samples were analyzed by CARB's lab. So there's no change in the data. The highest concentration stays at 2.9 ppb.

The correction factors resulted in three new exceedances of 1,3-D screening levels. There were previously eight known exceedances of 1,3-D screening levels. In 2022, the sub-chronic screening level in Parlier is exceeded. The revised 13 week concentration is at 3.0 parts per billion (ppb), which is exactly at the screening level. There are two new exceedances in 2018, the updated maximum 24 hour concentration of 1,3-D is now at 63.6 ppb over the regulatory target of 55 ppb. However, the 55 ppb regulatory target was not in place until 2022. The screening level at that time in 2018 was 110 ppb. Then finally, the 2020 chronic screening level for Shafter is now exceeded. The one year screening level is 2 ppb, and the corrected 2020 concentration is at 2.1 ppb. It's at 106% of its screening level. There continues to be no exceedances of methyl bromide screening levels for regulatory targets.

The exceedances of the screening levels, or regulatory targets were all before the implementation of the 1,3-D residential bystander regulation. The residential bystander regulation went into effect on January 1, 2024, however, the updated 1,3-D concentration still underscores the need for 1,3-D regulations. The scientific analysis for regulatory development, including the five 1,3-D pilot studies, did not rely on any data affected by the lab error. DPR is continuously evaluating the 1,3-D data to ensure that the regulations are providing appropriate protections. The 2024 1,3-D Annual Report, the final 2023 Air Monitoring Report, the 2024 Air Monitoring Report, and the 2024 1,3-D Monitoring Study report will all use the corrected data.

Committee Comment

Mai Ngo (DTSC) asked if the error was just an error in calculation or some error in the measured pressure in the canisters? Mike Gross from CDFA, stated that from their review, the calculation was understood to be from underestimating the effect of the minor change in the pressure for reading the pressure for filling that canister. So, they did the calculation correctly and were able to get that -18.8, -18.9 in of mercury, but underestimating the effect for getting a more accurate reading on the gauge and what the effect of that would be on the final concentration and how multiple dilutions would compound that error.

Katie Sutherland-Ashley (OEHHA) stated that the presenter said the analysis for the regulatory development doesn't rely on this data, are the 1,3-D monitoring concentrations used in any of the validations for the air modeling that you do to simulate long term air concentrations? Aniela Burant responded that they are used as part of the validation. We are taking a look at the model validation as part of the regulatory process. However, we're not really in a position to talk about the regulation right now. And that model validation since everything is still ongoing and it's a lot of data to work through.

Garrett Keating (DIR) asked when you might clarify that? Aniela Burant stated that DPR doesn't have an answer for that right now because they are still working through everything since there's over ten years of data to work through.

Elizabeth Marder (CDPH) stated she had the same questions as Katie and Garrett, and asked a follow-up question to theirs, do you anticipate appreciating that the timeline, there's a lot of data to go through in the models and validation, do you anticipate that being addressed in another meeting, or do you anticipate that just being put into your final statement of reasons for your regulatory process, or you don't know at this time? JT Teerlink responded that if there is interest, we are certainly happy to bring it to a PREC meeting. The rulemaking process has really specific touch points along that and so I think we can assess that once we're further down the road and appreciate feedback from the PREC Committee when we're at a point to talk about it. Elizabeth asked a secondary question of, there's a lot of interagency work in some of these communities, have you started working on a plan for planning to go back or provide additional support for community engagement to some of the communities for whom this data, maybe impacts projects? JT Teerlink responded that DPR is really focused on places where we're exceeding regulatory targets or screening levels and those are the numbers that Aniela highlighted in her presentation today. This will be part of our ongoing conversations with community members, and as we see need for additional touch points, we'll certainly follow up.

Stan Armstrong (CARB) asked, with the exceedances have you coordinated with CARB's laboratory and monitoring division on that conclusion? Aniela stated that Mike and Barzin worked very closely with the CARB lab. Mike Gross then added that CDFA worked closely with CARB to help identify the error and prepared some proficiency testing (PT) samples during the process of putting in the process improvements and in the investigation and review.

Public Comment

Anne Katten (California Rural Legal Assistance Foundation) asked if CDFA could please explain why trace deductions weren't affected by this error? Dr. Gross stated that was mainly to have a systematic treatment of the data. We maintain data in the environmental analysis section for five years. Trace data is data that is less than the reporting limit but greater than the MDL, but we do not report any numerical value with that. Those results, and therefore a correction factor could not be applied for data that is older than five years. So therefore we wanted to have

that systematic treatment of all the data. As a follow-up question, Anne asked, what are PT samples? Dr. Gross apologized for using the abbreviation and clarified that PT samples are "proficiency testing" samples.

4. **Agenda Items for Next Meeting**

None to report.

Today's meeting is Tulio's last meeting as the PREC Committee Chair.

The next meeting is scheduled for Friday, May 16, 2025 at 10:00 a.m. This meeting will be held virtually on the Zoom platform and broadcast live on the CalEPA webcast page. <video.calepa.ca.gov/>

5. **Adjourn**