

Reponses to Comments on the AIR MONITORING NETWORK RESULTS FOR 2012 - VOLUME 2

APPENDIX A:

Reponses to Comments on the
AIR MONITORING NETWORK RESULTS FOR 2012
VOLUME 2

| Comment Number | Comment | Response | Action |
|----------------|--|--|--|
| 1. | <p>From ARB:</p> <p>Objectives –</p> <p>On Page 1 of the Introduction, the objectives of the air monitoring network are described. The fourth objective is listed as “estimate cumulative exposure to multiple pesticides with common modes of action.” We assume “common modes of action” refers to common physiological modes of action in humans (e.g., cholinesterase inhibitors). We suggest that this be clarified.</p> | <p>Edited sentence to read:</p> <p>Estimate cumulative exposure to multiple pesticides with common physiological modes of action in humans (e.g., cholinesterase inhibitors).</p> | <p><i>Suggested changes to the report were made.</i></p> |
| 2. | <p>From ARB:</p> <p>Site Locations –</p> <p>On pages 1 and 2, the current monitoring site locations are described (Ripon in San Joaquin County, Shafter in Kern County, and Salinas in Monterey County). At a meeting of the DPR Pesticide Registration and Evaluation Committee on August 16, 2013, DPR staff stated that they will evaluate the proximity of these sites to reported use of the monitored pesticides for the days of the highest monitoring results in an effort to evaluate the representativeness of these monitoring sites. We suggest including this evaluation in the final report on the 2012 monitoring. This may also provide information with regard to the adequacy of only collecting one 24-hour sample per week at each site (e.g., if the highest 24-hour concentration at a monitoring site was several days after a nearby application).</p> | <p>Pesticide use data for 2012 will not be available for at least several weeks. DPR will conduct this evaluation when the data is available, but does not plan to delay release of the final report. The evaluation will be included in a separate or amended report.</p> | <p><i>No changes</i></p> |

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| 3. | <p>From ARB:</p> <p>Chloropicrin sampling method –</p> <p>Table 2 lists the pesticides monitored using canisters. Chloropicrin is listed in Table 2. However, the paragraph before Table 2 indicates that chloropicrin was collected on XAD-4 sample tubes. We believe the text is accurate and that Table 2 should be revised.</p> | <p>Table 2 was updated to include an asterisk next to Chloropicrin and MITC.</p> <p>Asterisk note under Table 2 now reads:</p> <p style="padding-left: 40px;">*are collected on individual sample tubes until CDFA is able to include in canister method.</p> | <p><i>Changes to the report were made.</i></p> |
| 4. | <p>From ARB:</p> <p>Tables 37 and 38 –</p> <p>Tables 37 and 38 should be labeled Tables 38 and 39</p> | <p>Tables 37 and 38 were originally mislabeled in the Draft Report and have been edited as Tables 38 and 39 on pages 46 and 47, respectively.</p> | <p><i>Changes to the report were made.</i></p> |
| 5. | <p>From ARB:</p> <p>Quality Control Results –</p> <p>The last paragraph on page 45 refers to Table 39 and states that for duplicate samples with quantifiable concentrations, the maximum relative percent difference for three of the four sample types was 0 percent, "indicating proper field and laboratory procedures." However, the data in Table 39 indicate that there were no sample pairs for those three sample types in which both the primary and duplicate samples had quantifiable results. We suggest revising this misleading conclusion about the field and laboratory procedures.</p> | <p>Deleted the phrase "indicating proper field and laboratory procedures" from the sentence. New edited sentence now states:</p> <p style="padding-left: 40px;">Duplicate samples (Table 39) with quantifiable concentrations had a maximum relative difference of 0 percent for the XAD multiple pesticide samples, 11.3 percent for the MITC samples, 0 percent for chloropicrin samples, and 0 percent for VOC samples.</p> | <p><i>Changes to the report were made</i></p> |

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| 6. | <p>From ARB:</p> <p>Representativeness of three monitoring sites –</p> <p>Table 37 compares the highest 24-hour concentrations measured in the network during 2011 and 2012, compared with prior studies conducted in other parts of California. There is considerable variability between 2011 and 2012, with many compounds measured at concentrations below the limit of quantification. The highest concentration of the soil fumigant 1,3-dichloropropene at any of the three sites in 2012 being 3.6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) at the Shafter site.</p> <p>In ARB's statewide urban area toxics monitoring network, a comparable concentration of $3 \mu\text{g}/\text{m}^3$ was measured in 2012 in downtown Fresno, several miles from the nearest application. No chloropicrin was detected at any of the three network sites. In 2011, the pesticides 1,3-dichloropropene and chloropicrin were the third and sixth most heavily used pesticides in California, based on DPR's pesticide use data. These monitoring results put into question how representative the three sites are to cumulative exposure to pesticides that are heavily applied.</p> | <p>The concentrations detected for 1,3-D and Chloropicrin are listed on the AMN report tables on pages 25, 28, and 32 for Salinas, Shafter, and Ripon, respectively. Concentrations for these and most pesticides were lower in 2012 compared to 2011. The highest concentration of 1,3-dichloropropene at any of the three sites was $3.6 \mu\text{g}/\text{m}^3$ at the Shafter site. Although concentrations as high as $12 \mu\text{g}/\text{m}^3$ were detected in 2011. For chloropicrin, concentrations as high as $4 \mu\text{g}/\text{m}^3$ were detected in 2011. Pesticide use data is not yet available for 2012, but historical data indicates that the monitoring sites are high use areas for most pesticides. ...</p> | <p><i>No action was taken.</i></p> |

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| 7. | <p>From ARB:</p> <p>Suggestions for modifications to monitoring network –</p> <p>For selection of pesticide air monitoring sites, we suggest continuing to focus on counties and communities that are heavily impacted by pesticide use, with priority given to the towns that have the greatest potential exposure, based on proximity to historical use of the pesticides that DPR will be monitoring. In addition, we suggest attempting to locate monitoring sites near the edge of a town in proximity to historical pesticide use, rather than in the heart of a town. DPR's monitoring network grew out of DPR's successful year-long monitoring effort in the Fresno County town of Parlier. Based on 2011 pesticide use data, Fresno County continues to be the county with the highest pesticide use in California, followed by Kern, Tulare, Madera, San Joaquin, and Monterey Counties. We suggest considering communities in these high use counties. We have the following suggestions:</p> <ul style="list-style-type: none"> i. move the Ripon monitoring site (San Joaquin County) to a town in Fresno, Tulare, or Madera County, with an emphasis on proximity to historical use of the pesticides that DPR plans to monitor; ii. move the Shafter site (Kern County) to a different location in Kern County, such as south of Bakersfield to assess cumulative exposure to pesticides used in the carrot and potato growing region between Lamont and Arvin; and iii. move the Salinas site (Monterey County) to a different site south of Salinas and more in the heart of the Salinas Valley between Chualar and King City. | <p>DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network.</p> | <p><i>No changes to the report are needed. Suggestions for the 2014 monitoring plan were taken into consideration by DPR</i></p> |

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| 8. | <p>From WPHA:</p> <p>No changes be made to the air network –</p> <p>WPHA believes that CDPR should maintain its commitment to the current project and should complete its five year assessment under the current parameters and locations for monitoring.</p> <p>We believe that CDPR should continue and complete the current program unchanged so that it may accurately identify any kind of trend lines, whether they be positive or negative. WPHA does not support either changing locations or monitoring sites. We also do not support changing the chemicals being monitored. Again, to change any of these factors would result in not only incomplete data, but insufficient amounts of data from which the department could make credible summary assessments of product use and safety.</p> <p>WPHA recommends continuance and completion of the current Air Monitoring Network.</p> | No response needed. | <i>Suggestions were taken into consideration by DPR</i> |
| 9. | <p>From CRLAF-PANNA-CPR:</p> <p>Changes to sampling site locations and sample collection –</p> <p>Air monitoring should be discontinued at these three sites because monitoring is not yielding data that will be useful for characterizing exposures. If the air monitoring network is continued, care should be taken to select future sites located in high pesticide use areas within communities with high pesticide use ratings. Sampling several times a week at several sites in a community during portions of the year when pesticide use is heaviest would be a preferable monitoring strategy. Seasonal sampling was recommended by PREC Members from the ARB and SWRCB at the August 16, 2013 PREC meeting. Sampling could be conducted in different months for fumigants and other pesticides since different monitoring methods are used. This should still result in significant reduction of analytical costs.</p> <p>In selecting possible air monitoring sites, DPR should also look at density of pesticide use in unincorporated communities, or the unincorporated but populated areas surrounding very small towns. The Cal-EnviroScreen tool may be useful for identifying high density areas of pesticide use in unincorporated areas, particularly once it is made available at the census tract level.</p> | DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network. | <i>No changes to report are needed. Suggestions were taken into consideration by DPR</i> |

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| 10. | <p>From CRLAF-PANNA-CPR:</p> <p>Keep current list of pesticides monitored in the monitoring network –</p> <p>In future sampling, DPR should continue monitoring for all pesticides and breakdown products included in the 2011 and 2012 sampling with the possible exception of pesticides which have been phased out of use. Restricting monitoring to only fumigants and organophosphates, as suggested by DPR staff at the August 2013 PREC meeting, would be inappropriate given the high percentage of trace detections of some fungicides and herbicides.</p> | <p>DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network.</p> | <p><i>No changes to the report are needed. Suggestions were taken into consideration by DPR</i></p> |
| 11. | <p>From CRLAF-PANNA-CPR:</p> <p>Monitor time should be changed when pesticide use is the highest –</p> <p>DPR should carefully consider pesticide use in localized areas of highest exposure at peak times of usage along with weather data and advice from the Air Resources Board and other PREC member agencies, in order to improve selection of future air monitoring sites. Increased monitoring at the times when pesticide use is the highest will provide information that is useful in assessing the true nature of risk in those communities where exposure is most likely to happen.</p> | <p>Increased sampling during high use peak periods is not currently feasible considering that we monitor for 32 pesticides and 5 breakdown products, all of which do not have the same use seasons. Due to budgetary constraints, increased monitoring at high use area for small subset of pesticides out of the 37 chemicals monitored is not feasible.</p> <p>DPR will take into consideration advice from the Air Resources Board and other PREC member agencies in regards to a possible sample site location move.</p> | <p><i>No changes to the report are needed. Suggestions were taken into consideration by DPR</i></p> |
| 12. | <p>From CRLAF-PANNA-CPR:</p> <p>Screening levels used should be lower –</p> <p>We are concerned that screening levels used for some of these pesticides including methyl bromide and chloropicrin are higher than levels OEHHA considers adequately health protective and screening levels do not incorporate Food Quality Protection Act (FQPA) uncertainty factors or even list them. We note with concern that the highest one day chlorpyrifos level (130.9 ng/m³) measured in Shafter exceeds the acute one day screening level for children of 120 ng/m³ if the FQPA factor is used.</p> | <p>As indicated in the report, regulatory goals are used instead of screening levels for pesticides that have a risk management directive. Methyl bromide and chloropicrin are two pesticides for which the risk management directives specify air concentration goals for developing regulatory requirements. Data from the air network is used in part to determine the effectiveness of regulatory requirements. Therefore, it is more appropriate to compare the detected concentrations to the regulatory goals instead of screening levels.</p> | <p><i>No changes to the report are needed. No Action Taken by DPR</i></p> |

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| 13. | <p>From CRLAF-PANNA-CPR:</p> <p>Lost samples –</p> <p>It is concerning to note that multiple samples at the Watsonville methyl bromide monitoring site were invalid including one sample on September 24, 2012 during the peak fumigation season. That missing sample could have caused the maximum 4 week sub-chronic rolling total to have a low bias. Was air monitoring conducted for chloropicrin, metam and 1,3 dichloropropene in Watsonville or at the other ARB fumigant monitoring sites? Given declining use of methyl bromide and rising use of the other fumigants, all four fumigants should be monitored and results should be reported together.</p> | <p>While every care is taken by DPR sampling personnel for the proper sample collection and by CDFA lab personnel in the proper sample analysis, there are rare occurrences where a sample is lost due to unforeseen reasons (e.g., whether, vandalism, extraction contamination, etc.) As stated on the report, a grand total of one air sample was invalid: an MITC air sample taken from the Salinas sampling location collected rain water inside of the sampling media tube thus making the MITC sample invalid. The invalid MITC sample was not replaced and was not included in any of the average calculations. No methyl bromide samples were lost from the air monitoring network in 2012.</p> <p>The Watsonville site is not part of the air monitoring network. In August 2011, DPR U.S. EPA entered into an Agreement requiring DPR to expand on-going monitoring of methyl bromide air concentrations and to share these monitoring results with U.S. EPA and the public on an annual basis. This agreement only applies to methyl bromide monitoring. DPR currently provides methyl bromide monitoring results from six sampling locations (Salinas, Shafter, Ripon, Camarillo/Oxnard, Santa Maria, and Watsonville). Although in conjunction with the Air Monitoring Network, the sampling sites in Watsonville, Santa Maria, and Camarillo do not monitor for other pesticides included in the air network aside from MBr, as required. Although 1,3-D is included in the same sample and analysis. Expansion of the pesticides monitored in these three sites is not an option as DPR and U.S. EPA's MBr monitoring agreement concludes at the end of 2013 and DPR has no current plans on expanding this monitoring beyond 2013.</p> | <p><i>No changes to the report are needed. No Action Taken by DPR</i></p> |
| 14. | <p>From CRLAF-PANNA-CPR:</p> <p>Temporary stop the air monitoring network –</p> <p>At today's PREC meeting we learned that continuing the Air Monitoring Network will tie up all of DPR's air monitoring resources, resulting in delay in monitoring to check the adequacy of buffer zones for mite generating fumigants and chloropicrin which have been set using modeling. We think that air monitoring to ground truth these buffer zones and better characterize emissions from entire fields where strip fumigations and TIF tarps are used, to supplement data obtained from small test plots, is urgently needed and should take priority. Taking a break from the Air Monitoring Network would also allow for comparison of 2012 air monitoring results and 2012 pesticide use data.</p> | <p>DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network.</p> | <p><i>No changes to the report are needed. Suggestions were taken into consideration by DPR</i></p> |

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| 15. | <p>From CDPH:</p> <p>Chemical Selection –</p> <p>Results from modeling we have conducted show a high degree of variation in use of pesticides meeting certain hazard criteria, consistent with criteria used by DPR, in 15 agricultural counties near schools. Based on our modeling, we would suggest consideration be given to exploring the feasibility of adding the following chemicals, which have also scored high on DPR's scoring system, to the monitoring:</p> <ul style="list-style-type: none"> • Paraquat • Maneb • Captan • Mancozeb • Methomyl • Glufosinate-ammonium <p>Given that 14 chemicals were not detected at the three sampling sites, dropping several of these non-detects, especially those ranking 7,8, or 9 on the CDPR scale, could help reduce the cost of the above additions. We recommend retaining chloropicrin, despite its absence in the 2011/2012 detections, due to its high rate of use statewide, and its known acute hazard properties.</p> | <p>DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network.</p> | <p><i>No changes to the report are needed. Suggestions were taken into consideration by DPR</i></p> |

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| 16. | <p>From CDPH:</p> <p>Site Selection –</p> <p>It is evident from the 2011/2012 results, and also considering the well-known fluctuations in land-use patterns, that pesticide application rates are not static, and that the site rankings according to the CDPR system will therefore shift from year to year, depending on the crops in a given area. Given the resource limitations that currently prevent expanding the air monitoring network, we would recommend, if feasible, shifting the sites annually if the yearly results from a given site show a low level of concern for the monitored chemicals. While this would diminish the ability to follow trends over time in a given area, in trade-off it would enhance the ability to locate highest priority sites.</p> <p>A separate consideration that CDPH would suggest be considered, as part of the site selection methodology, is the existence of documented pesticide-related illness reports (occupational or non-occupational). We would suggest that consideration be given to including illness reports (from physician records or County Agricultural Commissioner reports) as an additional qualitative layer of data feeding into the existing site-selection scoring.</p> <p>We suggest that the monitoring be further targeted by focusing more on sampling during work hours in these areas and on pesticides most likely to be used in the surrounding fields (based on type of crop and historical use per the Pesticide Use Reports).</p> | <p>DPR will take this comment along with other comments made by interested stakeholders into consideration before making a final decision on the future of the air monitoring network.</p> | <p><i>No changes to the report are needed. Suggestions were taken into consideration by DPR</i></p> |

Reponses to Comments on the AIR MONITORING NETWORK RESULTS FOR 2012 - VOLUME 2

Attachments: Comments Correspondence



Matthew Rodriguez
Secretary for
Environmental Protection

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov



Edmund G. Brown Jr.
Governor

Edgar Vidrio
September 20, 2013
Page 2

bcc: Cynthia Marvin, SSD
Dan Donohue, SSD
Peggy Taricco, SSD
Angela Csondes, SSD

TO: Edgar Vidrio
Environmental Scientist
Environmental Monitoring Branch
Department of Pesticide Regulation

FROM: Lynn Baker *Lynn Baker*
Staff Air Pollution Specialist
Technical Analysis Section
Emissions Assessment Branch
Stationary Source Division

DATE: September 20, 2013

SUBJECT: COMMENTS ON DRAFT AIR MONITORING NETWORK REPORT

At your request, we reviewed the draft report "Air Monitoring Network Results for 2012," prepared by the Department of Pesticide Regulation (DPR), dated July 2013. The report summarizes the second year of pesticide monitoring data collected by DPR in three towns impacted by cumulative exposure to the use of multiple pesticides. We support DPR's efforts to continue to operate a pesticide air monitoring network in areas of California, although we have suggestions for modifying the current network of three monitoring sites. Our comments are attached. If you have questions regarding our comments, please contact me at (916) 324-6997 or at lbaker@arb.ca.gov.

Attachment

cc: Charles Salocks, Ph.D.
Manager, Pesticide Epidemiology Section
Office of Environmental Health Hazard Assessment

Eric McDougall
Manager, Special Purpose Monitoring Section
Monitoring and Laboratory Division
Air Resources Board

Russell Grace
Manager, Special Analysis Section
Monitoring and Laboratory Division
Air Resources Board

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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S: TAS/Lynn/DPR Air Monitoring Network Comments Sept. 2013.doc

Reponses to Comments on the AIR MONITORING NETWORK RESULTS FOR 2012 - VOLUME 2

Attachment

Comments on Draft "Air Monitoring Network Results for 2012"

1. **Objectives** – On page 1 of the Introduction, the objectives of the air monitoring network are described. The fourth objective is listed as "estimate cumulative exposure to multiple pesticides with common modes of action." We assume "common modes of action" refers to common physiological modes of action in humans (e.g., cholinesterase inhibitors). We suggest that this be clarified.
2. **Site locations** – On pages 1 and 2, the current monitoring site locations are described (Ripon in San Joaquin County, Shafter in Kern County, and Salinas in Monterey County). At a meeting of the DPR Pesticide Registration and Evaluation Committee on August 16, 2013, DPR staff stated that they will evaluate the proximity of these sites to reported use of the monitored pesticides for the days of the highest monitoring results in an effort to evaluate the representativeness of these monitoring sites. We suggest including this evaluation in the final report on the 2012 monitoring. This may also provide information with regard to the adequacy of only collecting one 24-hour sample per week at each site (e.g., if the highest 24-hour concentration at a monitoring site was several days after a nearby application).
3. **Chloropicrin sampling method** – Table 2 lists the pesticides monitored using canisters. Chloropicrin is listed in Table 2. However, the paragraph before Table 2 indicates that chloropicrin was collected on XAD-4 sample tubes. We believe the text is accurate and that Table 2 should be revised.
4. **Tables 37 and 38** – Tables 37 and 38 should be labeled Tables 38 and 39.
5. **Quality control results** – The last paragraph on page 45 refers to Table 39 and states that for duplicate samples with quantifiable concentrations, the maximum relative percent difference for three of the four sample types was 0 percent, "indicating proper field and laboratory procedures." However, the data in Table 39 indicate that there were no sample pairs for those three sample types in which both the primary and duplicate samples had quantifiable results. We suggest revising this misleading conclusion about the field and laboratory procedures.
6. **Representativeness of three monitoring sites** – Table 37 compares the highest 24-hour concentrations measured in the network during 2011 and 2012, compared with prior studies conducted in other parts of California. There is considerable variability between 2011 and 2012, with many compounds measured at concentrations below the limit of quantification. The highest concentration of the soil fumigant 1,3-dichloropropene at any of the three sites in 2012 being 3.6 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) at the Shafter site.

In ARB's statewide urban area toxics monitoring network, a comparable concentration of $3 \mu\text{g}/\text{m}^3$ was measured in 2012 in downtown Fresno, several miles from the nearest application. No chloropicrin was detected at any of the three network sites. In 2011, the pesticides 1,3-dichloropropene and chloropicrin were the third and sixth most heavily used pesticides in California, based on DPR's pesticide use data. These monitoring results put into question how representative the three sites are to cumulative exposure to pesticides that are heavily applied.

7. **Suggestions for modifications to monitoring network** – For selection of pesticide air monitoring sites, we suggest continuing to focus on counties and communities that are heavily impacted by pesticide use, with priority given to the towns that have the greatest potential exposure, based on proximity to historical use of the pesticides that DPR will be monitoring. In addition, we suggest attempting to locate monitoring sites near the edge of a town in proximity to historical pesticide use, rather than in the heart of a town. DPR's monitoring network grew out of DPR's successful year-long monitoring effort in the Fresno County town of Parlier. Based on 2011 pesticide use data, Fresno County continues to be the county with the highest pesticide use in California, followed by Kern, Tulare, Madera, San Joaquin, and Monterey Counties. We suggest considering communities in these high use counties. We have the following suggestions:

- move the Ripon monitoring site (San Joaquin County) to a town in Fresno, Tulare, or Madera County, with an emphasis on proximity to historical use of the pesticides that DPR plans to monitor;
- move the Shafter site (Kern County) to a different location in Kern County, such as south of Bakersfield to assess cumulative exposure to pesticides used in the carrot and potato growing region between Lamont and Arvin; and
- move the Salinas site (Monterey County) to a different site south of Salinas and more in the heart of the Salinas Valley between Chualar and King City.

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September 19, 2013

Mr. Edgar Vidrio
California Department of Pesticide Regulation (CDPR)
Environmental Monitoring Branch
PO Box 4015
Sacramento, CA 95812-4015
Submitted via email to: Edgar.Vidrio@cdpr.ca.gov

Re: Air Monitoring Network Project

Dear Mr. Vidrio,

On behalf of the Western Plant Health Association (WPHA), I am submitting these comments in response to CDPR's required evaluation of its Air Monitoring Network. WPHA appreciates the opportunity to comment on this project. WPHA represents the interests of crop protection & fertilizer manufacturers, agricultural biotechnology providers, and agricultural retailers in California, Arizona, and Hawaii.

WPHA has closely monitored the various air monitoring projects that CDPR has undertaken over the past several years, including the Lompoc Ambient Air Monitoring Project in 2000, the Parlier Pilot Air Monitoring Program in 2006, and the current CDPR Air Monitoring Network. We understand the importance of these projects for CDPR to assess and assure communities around California that CDPR pesticide regulations are protective to human health and the environment. We commend the department on its ongoing commitment to develop scientifically sound projects that provide valid data from which credible results can be obtained.

CDPR has consistently utilized safety thresholds for assessing air quality impacts well below regulatory requirements, as well as utilizing protocols that establish appropriate Environmental Justice communities for monitoring, and where within those communities monitoring should take place to assess risk and protect the most sensitive populations. Because of these efforts, we believe CDPR has developed a scientifically sound air monitoring program that is sensitive of the risks to disadvantaged communities.

4460 Duckhorn Drive, Suite A, Sacramento, CA 95834 * Phone: 916.574.9744 * Fax: 916.574.9484 * www.healthyplants.org

Currently, CDPR is accepting comments to consider the future of the Air Monitoring Network, and any changes to that project. WPHA believes that CDPR should maintain its commitment to the current project and should complete its five year assessment under the current parameters and locations for monitoring. Results for the Air Monitoring Network thus far have been very positive. We believe the results are a clear demonstration of the improvements in application methods and awareness by growers and applicators on the importance of sound use practices. We also believe this demonstrates the advancements in product development of new pesticides that present less risk to the public. Finally, we believe the results demonstrate the effectiveness of CDPR's regulatory program that protects the health and safety of all communities.

We believe that CDPR should continue and complete the current program unchanged so that it may accurately identify any kind of trend lines, whether they be positive or negative. WPHA does not support either changing locations or monitoring sites. We also do not support changing the chemicals being monitored. Again, to change any of these factors would result in not only incomplete data, but insufficient amounts of data from which the department could make credible summary assessments of product use and safety.

The Air Monitoring Network was established to assure that disadvantaged communities are not being placed at risk by unsafe levels of pesticides. WPHA would be very concerned that either changing the communities being monitored or the monitoring locations would send a signal that the department is no longer committed to those communities and the intent of the program. Changing the communities being monitored would leave the current project with incomplete data for those communities. Moving the monitoring sites would compromise the intent of the monitoring, which is to monitor the most sensitive populations. As with changing communities, changing the pesticides being monitor would result in incomplete data from which to identify any trends, and could compromise the scientific methodology being utilized for the current project.

For these reasons, WPHA recommends continuance and completion of the current Air Monitoring Network. We thank you for your consideration of our comments. If you have any questions or require any additional information, please feel free to contact me at (916) 574-9744.

Sincerely,

A handwritten signature in black ink, appearing to read "Renee Pinel", written over a horizontal line.

Renee Pinel
President/CEO

4460 Duckhorn Drive, Suite A, Sacramento, CA 95834 * Phone: 916.574.9744 * Fax: 916.574.9484 * www.healthyplants.org

October 31, 2013

Reponses to Comments on the AIR MONITORING NETWORK RESULTS FOR 2012 - VOLUME 2

California Rural Legal Assistance Foundation

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--Sustainable Communities Project
--Workers Rights Project

September 20, 2013

Edgar Vidrio
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E-mail: Edgar.Vidrio@cdpr.ca.gov

RE: Comments on DPR Air Monitoring Network Draft Report

Dear Dr. Vidrio:

Thank you for providing this opportunity to comment on the draft report of air monitoring network results for 2012 and on possible monitoring plan changes for 2014. We appreciate the clear and detailed manner in which the report presents the air monitoring results for 2012 with key comparisons to previous air monitoring. However, we disagree with the conclusion in DPR's Press Release that the low pesticide air levels measured at the three sites in 2012 indicate a low level of risk from pesticide exposure in the three communities. The predominantly low levels measured indicate low levels at the specific sites monitored on the days monitored, but it is not valid to assume that levels monitored at these sites are typical, nor is it valid to say that they demonstrate the highest levels of exposure for each community. In addition, chronic exposure to the fumigant 1,3 Dichloropropene exceeded 1 in 100,000 cancer risk at both the Salinas and Ripon sites in 2011 and exceeded 1 in one million cancer risk at the Salinas and Shafter sites in 2012. DPR has designated 1 in 100,000 cancer risk as for a level of health concern for lifetime exposure and some agencies consider 1 in 1 million cancer risk as an exposure level of health concern. The highest one day level of chlorpyrifos measured at the Shafter site also exceeds the children's health screening level if the FQPA factor is used.

Data collected in the past two years of monitoring suggest that the monitoring sites were not appropriately chosen. While each of the communities selected has a high level of pesticide use overall, the sites chosen were not sufficiently close to areas of high pesticide use to reflect average, let alone maximum exposures for each community. The Ripon site is in the center of town and the Salinas site is near the airport. The fact that there were no chloropicrin detections at the Salinas site in 2012 illustrates that it is not an appropriate site for characterizing pesticide exposure in a strawberry growing community, where chloropicrin is known to be heavily used.

In the presentation made to the DPR Pesticide Registration and Evaluation Committee on August 16, 2013, DPR scientists noted that the Air Monitoring Network is probably yielding insufficient data to correlate concentrations with use and weather patterns due to the low number of samples with quantifiable concentrations of pesticides. Re-assigning test sites to places that will yield useful data should be a priority of the Air Monitoring Network if and when it is continued.

Air monitoring should be discontinued at these three sites because monitoring is not yielding data that will be useful for characterizing exposures. If the air

monitoring network is continued, care should be taken to select future sites located in high pesticide use areas within communities with high pesticide use ratings. Sampling several times a week at several sites in a community during portions of the year when pesticide use is heaviest would be a preferable monitoring strategy. Seasonal sampling was recommended by PREC Members from the ARB and SWRCB at the August 16, 2013 PREC meeting. Sampling could be conducted in different months for fumigants and other pesticides since different monitoring methods are used. This should still result in significant reduction of analytical costs.

The draft 2012 Air Monitoring Network report notes that pesticide air concentrations monitored at the three air monitoring network sites were much lower than concentrations which have been measured at other sites by the Air Resources Board or Pesticide Action Network North America and also much lower than air concentrations measured at the same sites in 2011. The Air Resources Board should assist in site selection if DPR continues the air monitoring network. Now that the pesticide use data is available for 2011, an analysis should be done to compare that use data to 2011 monitoring results and site weather conditions to assist in selection of more appropriate monitoring sites. A preliminary analysis should also be conducted to determine whether there were changes between 2011 and 2012 in acreage planted to type of crops grown near each site.

It is concerning to note that multiple samples at the Watsonville methyl bromide monitoring site were invalid including one sample on September 24, 2012 during the peak fumigation season. That missing sample could have caused the maximum 4 week sub-chronic rolling total to have a low bias. Was air monitoring conducted for chloropicrin, metam and 1,3 dichloropropene in Watsonville or at the other ARB fumigant monitoring sites? Given declining use of methyl bromide and rising use of the other fumigants, all four fumigants should be monitored and results should be reported together.

Maximum cancer risk estimates for 1,3 D exposure at the Salinas site were above 1 in a million both years. This raises concerns about cancer risk in other areas of heavier 1,3 D use. The Salinas site clearly is not within the highest 1,3 D use township on the central coast and there are also higher 1,3 D use townships in the Central Valley than those including the Ripon and Shafter sites.

At all three sites combined, there were quantifiable detections of the fumigant breakdown product MITC in 28% of samples and methyl bromide in 7% of samples, with quantifiable detections of 9 other pesticides in 1 to 3% of samples. Pesticides detected in trace, unquantifiable levels in a large number of samples include chlorothalonil (15% of samples), chlorpyrifos and cpf OA (26% and 22% of samples), dacthal (17% of samples), malathion (17% of samples), simazine (8% of samples) and trifluralin (10% of samples). These sites are located somewhat outside of areas of highest pesticide use, suggesting that exposure to these pesticides may exceed levels of concern in higher use areas.

In future sampling, DPR should continue monitoring for all pesticides and breakdown products included in the 2011 and 2012 sampling with the possible exception of pesticides which have been phased out of use. Restricting monitoring to only fumigants and organophosphates, as suggested by DPR staff at the August 2013 PREC meeting, would be inappropriate given the high percentage of trace detections of some fungicides and herbicides.

DPR staff's presentation to the August PREC meeting included a summary of top rated communities for pesticide use, based on 2011 data. As pointed out by ARB representative Lynn Baker, it is odd that no Tulare communities are included in the list, given that Tulare county ranks third in pesticide use. At today's PREC meeting we learned that several Tulare communities rank just below those presented in the summary of top rated communities in pesticide use and also that only communities identified in the census are included in the analysis. In selecting possible air monitoring sites, DPR should also look at density of pesticide use in unincorporated communities, or the unincorporated but populated areas surrounding very small towns. The Cal-EnviroScreen tool may be useful for identifying high density areas of pesticide use in unincorporated areas, particularly once it is made available at the census tract level.

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We are concerned that screening levels used for some of these pesticides including methyl bromide and chloropicrin are higher than levels OEHHA considers adequately health protective and screening levels do not incorporate Food Quality Protection Act (FQPA) uncertainty factors or even list them. We note with concern that the highest one day chlorpyrifos level (130.9 ng/m³) measured in Shafter exceeds the acute one day screening level for children of 120 ng/m³ if the FQPA factor is used.

In conclusion, in the future DPR should refrain from making unjustified claims that the low pesticide air levels monitored at individual air monitoring network sites indicate low pesticide risk in entire communities. Instead, DPR should carefully consider pesticide use in localized areas of highest exposure at peak times of usage along with weather data and advice from the Air Resources Board and other PREC member agencies, in order to improve selection of future air monitoring sites. Increased monitoring at the times when pesticide use is the highest will provide information that is useful in assessing the true nature of risk in those communities where exposure is most likely to happen.

At today's PREC meeting we learned that continuing the Air Monitoring Network will tie up all of DPR's air monitoring resources, resulting in delay in monitoring to check the adequacy of buffer zones for mite generating fumigants and chloropicrin which have been set using modeling. We think that air monitoring to ground truth these buffer zones and better characterize emissions from entire fields where strip fumigations and TIF tarps are used, to supplement data obtained from small test plots, is urgently needed and should take priority. Taking a break from the Air Monitoring Network would also allow for comparison of 2012 air monitoring results and 2012 pesticide use data.

Thank you for your careful consideration of these comments. Please contact us if you have any questions.

Sincerely,



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CDPH Comments on the CDPR Air Monitoring Network Results from 2011/2012

CDPH appreciates the opportunity to submit comments and suggestions on the CDPR Air Monitoring Network results from 2011/2012. Generally CDPH supports the continuation of the CDPR Air Monitoring Network, and acknowledges the good work CDPR staff have put into this challenging program. We are especially pleased at how the program has taken steps to select sites that reflect heavy agricultural use adjacent to population centers, while taking into consideration vulnerable low-income and ethnically diverse areas. The value of monitoring is greatly enhanced when combined with modeling efforts, as each serves to inform and refine the other. Our comments for possible improvement of the Network relate to the following:

- 1) Chemical selection
- 2) Site selection

An overarching theme in these suggestions is one that encourages incorporating greater flexibility in methodology. Currently each station monitors for the same chemicals, and monitors one random day/week throughout the year. It seems the program could be more economical if each station had the flexibility to monitor/sample for just those chemicals (within the larger list) of interest that are likely to be the most relevant for that site, and to monitor temporally in a way that reflects a greater intensity during the most likely seasonal times of application of the chemicals of greatest interest. In other words, if it is practical to do so, we would see value in tailoring each site's sampling strategy to the uniqueness of that site, rather than keeping the sampling consistent (i.e., as replicates) across sites.

Chemical Selection

Results from modeling we have conducted show a high degree of variation in use of pesticides meeting certain hazard criteria, consistent with criteria used by DPR, in 15 agricultural counties near schools. Based on our modeling, we would suggest consideration be given to exploring the feasibility of adding the following chemicals, which have also scored high on DPR's scoring system, to the monitoring:

- Paraquat
- Maneb
- Captan
- Mancozeb
- Methomyl
- Glufosinate-ammonium

Given that 14 chemicals were not detected at the three sampling sites, dropping several of these non-detects, especially those ranking 7,8, or 9 on the CDPR scale, could help reduce the cost of the above additions. We recommend retaining chloropicrin, despite its absence in the 2011/2012 detections, due to its high rate of use statewide, and its known acute hazard properties.

Site Selection

It is evident from the 2011/2012 results, and also considering the well-known fluctuations in land-use patterns, that pesticide application rates are not static, and that the site rankings according to the CDPR system will therefore shift from year to year, depending on the crops in a given area. Given the resource limitations that currently prevent expanding the air monitoring network, we would recommend, if feasible, shifting the sites annually if the yearly results from a given site show a low level of concern for the monitored chemicals. While this would diminish the ability to follow trends over time in a given area, in trade-off it would enhance the ability to locate highest priority sites.

CDPH has piloted an assessment, using improved spatial precision from field-level data, to better understand where hazardous pesticides are being applied in proximity to schools in 15 agricultural counties in California. This methodology could be informative in helping with site selection, and we would offer to work with CDPR in this area.

A separate consideration that CDPH would suggest be considered, as part of the site selection methodology, is the existence of documented pesticide-related illness reports (occupational or non-occupational). We would suggest that consideration be given to including illness reports (from physician records or County Agricultural Commissioner reports) as an additional qualitative layer of data feeding into the existing site-selection scoring. The comments (below) from the CDPH Occupational Pesticide Illness Prevention Program highlight the issue of industrial areas nested within agricultural areas, where significant potential exists for chronic or acute pesticide exposures from adjacent fields.

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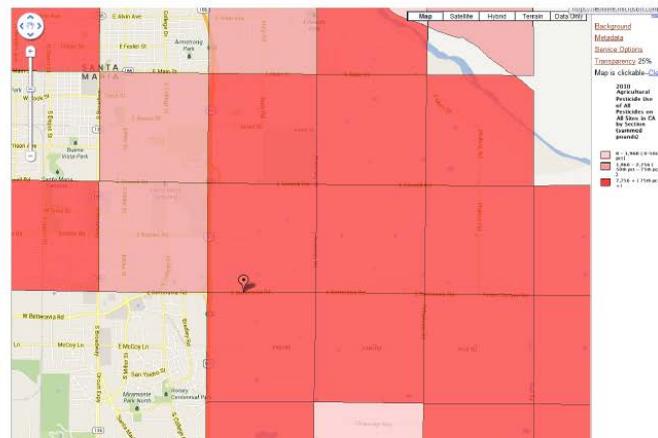
Comments from CDPH's Occupational Pesticide Illness Prevention Program

We would like to suggest that a sampling strategy be developed that will assess the potential for occupational pesticide exposure in industrial park "islands" that are found throughout California's agricultural landscape. In these locations, land is used for non-agricultural work, but is completely surrounded by land used for agriculture. In one recent incident investigated by the Santa Barbara County Agricultural Commissioner (SB CAC), we suspect that employees of a company that repairs and maintains construction equipment experienced symptoms from an application of herbicides on an adjacent property, and that employees of a neighboring business in the same industrial park had experienced symptoms due to drift from previous pesticide applications. Their work location is completely surrounded by berry fields; pesticides used during previous applications include chloropicrin, methyl bromide, and 1,3-dichloropropene. In fact, the SB CAC found that, in a ten-day period, 13 separate fumigations were conducted by several growers within ¼ mile of the industrial park. Here is a satellite map of this industrial park:



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Here is a screen shot of EHB's Agricultural Pesticide Use Map with the location of the industrial park marked. It is in a high pesticide use area:



While the Santa Barbara CAC was not able to find conclusive evidence of an exposure to herbicides in this particular case, this and similar incidents in our database suggest that conducting air monitoring at locations like this on an ongoing basis may provide useful information for characterizing the potential for bystander exposures.

We suspect that this happens much more often than is reported – workers will notice an odor and experience symptoms such as headache and nausea, but do not report them because they don't realize symptoms should be reported or to whom.

We suggest that the monitoring be further targeted by focusing more on sampling during work hours in these areas and on pesticides most likely to be used in the surrounding fields (based on type of crop and historical use per the Pesticide Use Reports).

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