



**DEPARTMENT OF PESTICIDE REGULATION
PESTICIDE REGISTRATION AND EVALUATION COMMITTEE
Meeting Minutes – January 21, 2011**

Committee Members/Alternates in Attendance:

Syed Ali, State Water Resources Control Board (SWRCB)
Lynn Baker, Air Resources Board (ARB)
Martha Harnley, Department of Public Health (DPH)
David Luscher, Department of Food and Agriculture
Ann Prichard, Department of Pesticide Regulation (DPR)
Rebecca Sisco, University of California, IR-4 Program
David Ting, Office of Environmental Health Assessment (OEHHA)
Gabrielle Windgasse, Department of Toxic Substances Control (DTSC)
Dave Whitmer, California Agriculture Commissioners and Sealers Association
Barry Wilson, UC Davis, Department of Environmental Toxicology
Elena Yates, CalRecycle

Visitors in Attendance:

Denise Alder, DPR
Vaneet Aggarwal, DPR
Gabriel Berzamina, NDS
Teresa Chan, DPR
Angela Csondes, ARB
Robert Dolejal, Arysta Life Sciences
Amy Duran, DPR
Billy Gaither, Pest Controllers of California
Ann Hanger, DPR
Sumi Hoshiko, DPH
Artie Lawyer, Technology Sciences Group
Eileen Mahoney, DPR
Brandi Martin, DPR
Jeanne Martin, DPR
Eric Paulsen, Clark Pest Control
Lisa Quagliaroli, DPR
Lisa Ross, DPR
Fabio Santori, DPR
Jay Schrieder, DPR
David Siegal, Office of Environmental Health Hazard Assessment (OEHHA)
Nan Singhesemanon, DPR
Richard Spas, DPR
Marilyn Underwood, DPH
Pam Wofford, DPR



1. Introductions and Committee Business – Ann Prichard, Acting Chairperson, DPR

- a. About 25 people attended the meeting.
- b. No corrections to the minutes of the previous meeting, held on November 9, 2010, were identified.

2. Kettleman City Investigation of Birth Defects and Community Exposures – Findings – David Siegel, OEHHA and Sumi Hoshiko, CDPH

Ms. Sumi Hoshiko presented information on the comprehensive state investigation by the California Environmental Protection Agency (Cal/EPA) and the California Department of Public Health (CDPH) into the environmental and health conditions in Kettleman City. The investigation did not find a conclusive cause for recent incidents of birth defects in the area. CDPH examined the state's registry for the rate of birth defects from 1987 to 2008, and reviewed the cases of 11 children identified as born with major structural birth defects between 2007 and March 31, 2010. In order to gather detailed risk factor and exposure information, CDPH conducted in-person interviews with six of 11 mothers willing and available to participate. The interviews found that mothers had pre-natal care and generally followed good health practices during pregnancy, did not have significant medical conditions known to increase risk for birth defects, and had not used alcohol, drugs, or tobacco. Although some birth defects shared similar features, for instance, cleft palate, CDPH found that the infants with birth defects had different underlying conditions, and no unusual patterns or types of defects were present. Although the review did not find a cause for the birth defects, continued monitoring for birth defects was recommended. The report also noted efforts underway to provide funding and technical assistance to the local water district to identify a new source of water for the community. The report and other useful information are available on CDPH's Web site at <http://www.cdph.ca.gov/programs/cbdmp/Pages/default.aspx>.

Mr. David Siegel with OEHHA presented on the exposure assessment aspect of the Kettleman City study; OEHHA was the lead agency in this investigation. However, nearly all of the Boards and Departments within Cal/EPA contributed to this investigation. OEHHA and CDPH were requested to investigate and perform an exposure assessment of Kettleman City to determine if there was any type of exposure (chemical/pollutant exposure) that may suggest why there is an increase in birth defects. Kettleman City itself is surrounded by agriculture fields to the west, north, and east of the community. To the south are the commercial area and the waste facility to the south-west three and a half miles away. The California Aqueduct runs through this city.

The study consisted of testing for approximately 35 chemicals that may cause or potentially cause birth defects and that may be present in or near Kettleman City. Because the analytical

method covered more than just the 35 chemicals and the community was concerned about other pollutants, OEHHA tested for more than 150 other hazardous chemicals. The extensive testing consisted of air, water, soil, and soil gas. To obtain the list of chemicals tested, Mr. Siegel's presentation is posted to DPR's Pesticide Registration and Evaluation Committee (PREC) Web site at <<http://www.cdpr.ca.gov/docs/dept/prec/precsummary.htm>>. The chemicals listed in yellow font are the currently used pesticides. The sources of possible contamination consisted of agricultural operations, hazardous waste facilities, industries and oil operations in the area, water, homes, and other sources (commercial areas within the community).

History of Kettleman City

Created in the 1920s, Kettleman City was created due to the surrounding oil fields. The Kettleman dome oil field provided much California's oil. While, oil used to be a large industry in Kettleman City, the primary industry now is agriculture. The extensive testing performed did not find exposures to hazardous chemicals that could explain the birth defects. Additionally, researchers found that the levels of environmental pollutants in Kettleman City were no different than other California Valley communities. This is not to say that there were no exposures.

Agricultural Operations

Overall, agricultural operations in Kettleman City use less pesticides than many other Central Valley communities. For a few days between 2006 and 2009, the modeled air levels were estimated to be above screening levels for possible general health effects for three pesticides (pesticides that produce methyl isothiocyanate (MITC) (1 occasion), chlorpyrifos (9 occasions), and diazinon (6 occasions)). On one day, the modeled air levels for MITC were calculated to be higher than a screening level for possible reproductive effects. OEHHA recommends that DPR continue to take measurements to reduce statewide exposure to these pesticides. DPR is already working on mitigating these active ingredients.

Hazardous Waste Facility

There is no evidence that facility operations between 2007 and 2009 affected air quality in Kettleman City or posed risks to residents. Monitoring at this facility looked for polychlorinated biphenyls (PCBs) down to femtograms per cubic meter. There were no detections of PCBs in soil or soil gas. PCBs were found in the city air at background levels which were no higher than those seen in the Central Valley. The facility, which is under the U.S. Environmental Protection Agency's (U.S. EPA's) oversight, performed a one year study for PCBs and found similar levels. The groundwater plume is not moving from the hazardous waste facility to Kettleman City. The city receives water from the first two aquifers which is separated by a formation from the facility.

Water

Drinking water well analysis found both arsenic and benzene in the municipal drinking water wells in Kettleman City. Benzene is removed from the groundwater before it is sent into the distribution system. Residents were being exposed to arsenic levels which were above the state standards (maximum contaminant levels (MCLs)), but are similar to other San Joaquin Valley communities. Most mothers of children with birth defects who were interviewed said they did not drink tap water. OEHHA recommends CDPH and Kettleman City Services District continue efforts to reduce arsenic levels in the water. Lead levels were detected below regulatory level in the school's well and one municipal well. Subsequent retesting of the school well did not find lead in the water. No homes in Kettleman City are on private wells. OEHHA recommends that the Air Resources Board and San Joaquin Valley Air Pollution Control District investigate and take appropriate action to mitigate benzene air concentrations.

Homes

Chlordane was found at a high level in the soil at one home possibly from an application for termite control. OEHHA recommends the Department of Toxic Substances Control investigate this further. U.S. EPA plans to measure pesticide levels in house dust later this year.

Other findings

Some evidence of illegal dumping of trash or automobiles on the periphery of the community was found. However, they are not a source of contaminant exposure to the community. Arsenic levels were measured in the California Aqueduct and a drainage canal. The drainage canal sediment contained arsenic levels similar to soil in the community. Lead found in California Aqueduct was below state action level (MCL). Diesel exhaust exposure was a concern of the community because of their proximity to Interstate Highway 5 and the trucks going to the oil facility. The analysis showed that diesel exhaust exposure was less than the comparison county (Kern).

Conclusions

Extensive testing of air, water, soil, and soil gas did not find any exposures to hazardous chemicals likely to be associated with birth defects found at Kettleman City.

3. Hexazinone Found in Ground Water and DPR Response – Lisa Ross, DPR

DPR's Ground water monitoring program is guided by the Pesticide Contamination Prevention Act, enacted in the mid 1980s to prevent further pollution of ground water due to legal agricultural use of pesticides. This law requires DPR to monitor wells to determine if pesticides are migrating to ground water. If pesticides are found in ground water as a result of

legal agricultural use, continued use of these pesticides is formally evaluated by a subcommittee of the PREC. This three member subcommittee consists of a representative from the SWRCB, OEHHA, and DPR.

Hexazinone was detected in 26 of approximately 120 wells targeted for sampling in high hexazinone use areas. Hexazinone is part of a chemical screen that DPR uses to sample wells throughout California, including about 2,300 wells statewide. DPR determined this contamination resulted from legal agricultural use and has set a public hearing for May 9, 2011, to hear testimony from the registrant and the public about continued use of hexazinone products. A deliberative meeting will be held June 7, 2011, where additional information will be presented to the subcommittee for their consideration before making recommendations to the Director of DPR regarding the future use of hexazinone products.

4. Changes to Soil Fumigant Labels – Brandi Martin, DPR

In May 2009, after consulting with stakeholders and obtaining extensive public input, U.S. EPA issued amended Reregistration Eligibility Decisions (REDs) for soil fumigant pesticides, including new safety measures to increase protections for agricultural workers and bystanders. In 2010, DPR received 49 amended soil fumigant labels. The label amendments included products containing the active ingredients 1,3-dichloropropene and chloropicrin, methyl bromide and chloropicrin, dazomet, metam sodium, metam potassium, and chloropicrin. After a preliminary evaluation by Worker Health & Safety, Medical Toxicology, Environmental Monitoring, Pesticide Use Enforcement, and Pesticide Registration Branches, DPR accepted all 49 amended labels in the fall of 2010. Per U.S. EPA requirements, the revised labels needed to be in the channels of trade by December 31, 2010.

The overall areas of revision on the labels consisted of:

- 1.) Revised Personal Protective Equipment (PPE) section
- 2.) Revised Environmental Hazards section
- 3.) Added Handlers (Fumigation) section
- 4.) Added Protection for Handlers section
- 5.) Added Protection and Stop Work Triggers section
- 6.) Added Application Requirements section
- 7.) Added Mandatory Good Agricultural Practices (GAPs) section
- 8.) Added Site Specific Fumigation Management Plan (FMP) section
- 9.) Revised Entry Restricted Period and Notification Requirements section

A second round of soil fumigant label revisions is expected to take place in 2011. The second round, mainly involving buffer zones, has already begun at the U.S. EPA. DPR expects to receive amended labels from registrants by June 2011.

5. Copper Antifoulant Reevaluation – Richard Spas and Nan Singhasemanon, DPR

Mr. Nan Singhasemanon provided the history of the antifoulant paints and a summary of the studies performed throughout the state. Tributyl tin (TBT), the previous class of antifoulant paint (AFP) compounds, was phased out in the late 1980s due to deleterious effects to bivalves. Also available to consumers at that time were copper-based antifoulant paints. The phase out of TBT created a sudden shift to copper-based antifoulant paints. Now, the majority of the antifoulant paints in California are copper based. In the late 1990's, San Diego Regional Water Quality Control District developed a copper Total Maximum Daily Load (TMDL) for the Shelter Island Yacht Basin (SIYB). At Shelter Island, there are approximately 2,200 recreational boats, a majority of which have copper based antifouling paint on their hulls. The TMDL includes passive leaching of the paints and the activity of in-water hull cleaning. Subsequent to the establishment of SIYB's TMDL, Marina del Rey (MdR) and Lower Newport Bay developed metal TMDLs. These TMDLs suggest that they may have issues coming from copper antifoulant paints.

DPR initiated a broader investigation to see if this was a localized issue or if it was a statewide concern. DPR also formed a copper antifoulant paint sub-workgroup with the help of the State Water Resources Control Board (SWRCB) and a number of other agencies. The sub-workgroup, established in 2004, continues to meet. The primary goal of the sub-workgroup is to gather existing data on copper antifoulant paints; identify various data gaps that existed; and, coordinate California studies. DPR maintains a Web site for the "Copper Antifouling Paint Sub-Workgroup/Antifouling Strategy Workgroup" available at <http://www.cdpr.ca.gov/docs/emon/surfwtr/caps.htm>.

In the summer and fall of 2006, DPR conducted a multi-regional study, which is the basis of DPR's current copper based antifoulant paint reevaluation. This is a joint study with SWRCB and the Regional Water Boards co-funding of the project. The study objectives are to:

- 1.) Assess the occurrences of AFP biocide indicators (ie., copper, zinc, irgarol and its degradate M1) and the magnitude of their concentrations in various marina areas in California.
- 2.) Determine whether concentrations exceed water quality standards, criteria, guidelines or other relevant benchmarks.
- 3.) Look at marina vs. background samples.
- 4.) Sample fresh vs. brackish vs. salt water marinas.
- 5.) Measure toxicity of marina waters and confirm identify of toxicant(s).
- 6.) Apply predictive toxicity models to ascertain potential copper toxicity on a larger scale.

Results of the study:

Median dissolved copper concentrations in the marinas were higher than respective values for local reference sites. The difference was statistically significant among the 15 salt-water marina areas. California Toxic Rule (CTR) chronic standards (3.1 ppb) for copper were exceeded in most of the salt-water and brackish water marinas. Many of those also exceeded the higher acute standard (4.8 ppb). In fresh water marinas, CTR standards were rarely exceeded. Particularly elevated concentrations of dissolved copper were documented for South and Central Coast marinas. Moderate levels were observed in the San Francisco Bay Area marinas. When marina source surveys and boat leaching estimates were considered, it is likely that boat AFPs are the major source of copper, particularly in salt-water marinas during dry periods.

Other findings from the study include:

- 1.) Some marina water samples were toxic to test organisms. Evaluation of toxicity points to copper as the most likely cause.
- 2.) Zinc concentrations were noticeably higher in marinas than local reference sites; however, zinc levels were always below CTR standards for zinc. Moreover, AFP sources of zinc may not be the predominant source of the metal in marinas.
- 3.) Irgarol and its major breakdown product – M1 were ubiquitous, sometimes at concentrations that could have sub-lethal effects on aquatic plants and algae.

Copper results from the DPR study were very similar to those found in three other California studies conducted at marina sites between Lower Newport Bay and the United States (U.S.)/Mexico Border. An interesting observation made from these studies showed that water column toxicity did not occur when dissolved copper concentrations were just above the standard threshold, but rather when levels were higher at the 9-10 ppb range. Monitoring for copper on the East Coast and in Europe showed similar observations of elevated copper levels in areas of high boating activity. Three ecological risk assessments (one in U.S. and two in Europe) determined that copper generally poses low levels of risk to aquatic life although higher probability of risks were noted for areas of high boating activity.

Summary:

Marinas are localized sources of copper as well as zinc and irgarol and its degradate M1. Boat antifoulant paints are a significant source of copper in salt and brackish water marinas during dry periods. Ecological impacts from dissolved copper are unlikely in fresh water marinas. However, high dissolved copper could adversely impact sensitive marine species. Copper toxicity at Marina del Rey plus salt water Biotic Ligand Model (BLM) predicts more widespread copper toxicity. Other California studies support investigation findings. The entire report is available on DPR's Web site at <http://www.cdpr.ca.gov/docs/emon/pubs/ehapreps/eh0805.pdf>.

Mr. Richard Spas presented an update on DPR's current copper based antifoulant paint reevaluation. He went over the following reevaluation steps, which includes some new information regarding data generation.

- 1.) Within 90 days, registrants needed to provide a statement of how they would comply with reevaluation, identify existing data and the type of paint in each product.
- 2.) Within 120 days, registrants needed to submit copies of existing studies that may be relevant to the reevaluation data requirements.
- 3.) Within 150 days, registrants need to submit leach rate data using either the American Society for Testing Method (ASTM) - Organotin Release Rates of Antifouling Coating Systems in Sea Water (ASTM D5108-90); or ASTM Test Method - Standard Test Method for Determination of Copper Release Rate from Antifouling Coatings in Substitute Ocean Water (ASTM D6442-06).
Based on responses received, DPR is considering accepting leach rate data generated using the newly accepted method ISO 10890:2010 as an alternative to data from the ATSM methods.
- 4.) Registrants need to submit a mitigation proposal for strategies to reduce the amount of dissolved copper concentrations below either the California Toxic Rule or regionally applicable standards.

DPR is working with the registrants on implementation of the mitigation strategies and to establish timelines for implementation. DPR will also facilitate the monitoring of marina waters to determine compliance with the California Toxic Rule standards. Following these three steps, DPR plans on meeting the objective of decreasing the amount of copper found in the California waterways.

6. Public Comment

None received.

7. Agenda Items for Next Meeting

No agenda items were suggested.

The next meeting will be held on Friday, March 18, 2011, in the Sierra Hearing Room on the second floor of the Cal/EPA building, located at 1001 I Street, Sacramento, California.

8. Adjourn