



California Department of Public Health



California Environmental Protection Agency

California Department of Public Health and California Environmental Protection Agency Follow-Up to Kettleman City Investigation: An Update

In the December 2010 report, "Investigation of Birth Defects and Community Exposures in Kettleman City, CA," the California Environmental Protection Agency (Cal/EPA) and the California Department of Public Health (CDPH) committed to providing the Kettleman City community an update on follow-up activities. The investigation in 2010 did not find a specific cause or exposure to chemicals in Kettleman City's environment that could explain why 11 children were born with birth defects between 2007 and 2010 to mothers who lived in the community during their pregnancies. This document describes several follow-up actions recommended in the 2010 report that Cal/EPA and CDPH are taking to address environmental conditions and health concerns in Kettleman City.

CDPH Activities Update

Birth Defects Monitoring

The California Birth Defects Monitoring Program (CBDMP) has been actively collecting birth defects information in the Central Valley counties since 1987. A report, "Birth Defects in Kettleman City," released in February 2010 included information on children born with birth defects through 2008 in Kettleman City and the surrounding area. A second report, released as part of the CDPH-Cal/EPA investigation in December 2010, included births through March 31, 2010.

CBDMP continues to monitor and expedite the review of all possible cases of children with birth defects with Kings County residences, including those from Kettleman City. CBDMP monitors children through the first year of life, because some birth defects might not be apparent at birth.

An update report is being prepared that will include information on children with birth defects born in 2009 and preliminary information on children born in 2010 and 2011. Information on rates of birth defects in Kings County and the surrounding counties will be included.

For more information, please contact Mr. Tivo Rojas-Cheatham, Chief, Community Participation and Education Section, Environmental Health Investigations Branch, CDPH (510) 620-3673.

Drinking Water Project

The Kettleman City Community Services District (KCCSD) has an existing drinking water source that exceeds safe drinking water standards for arsenic and benzene. The current KCCSD water treatment system removes benzene, but not arsenic. Arsenic occurs naturally in the soil and is found in a number of drinking water sources in California; some (as is the case in Kettleman City) at levels exceeding the drinking water standard.

CDPH provided \$400,000 in grant funding to KCCSD for a feasibility study to evaluate different solutions for their existing drinking water problem. This funding came from the Drinking Water State Revolving Fund (DWSRF).

Based upon this initial feasibility study and other information submitted by KCCSD, surface water from the California Aqueduct with treatment appears to be the most cost-effective solution for the community. This conclusion is based on Kings County providing additional funding for construction and Operations and Maintenance costs, and on securing uninterrupted deliveries of water from the California Aqueduct.

The Drinking Water program is working with KCCSD on a funding opportunity that will pay for the construction costs of the surface water treatment option as long as KCCSD can address the technical, managerial and economic feasibility of the surface water treatment option.

CDPH recommends that Kettleman City Elementary School be included in the community project. CDPH is currently working with the Reef-Sunset Unified School District on a feasibility study to assess costs to connect the school to the proposed KCCSD surface water treatment option project. The Kettleman City Elementary School is currently evaluating point-of-use treatment devices at drinking water fountains as an interim measure.

For more information, please contact Tricia Wathen, CDPH District Engineer, 559-447-3300.

Cal/EPA Activities Update

Chlordane contamination in the soil at one home

Chlordane, formerly used to control termites but now a banned pesticide, was found at elevated concentrations in some of the soil samples at one residence during the Cal/EPA investigation. The most likely source of the chlordane was a past application

to prevent a termite infestation. The chlordane in this one yard did not pose a threat to the community, but merited further attention.

In May 2011, the Department of Toxic Substances Control (DTSC) collected additional samples to further define the extent of contamination. On July 22 and 23, 2011, DTSC removed approximately 10.5 cubic yards (11.24 tons, generally 1 to 2 feet deep) of contaminated soil from the front and back yards of the home. Additional sampling after the soil removal confirmed that the contaminated soil had been removed as planned. The removal areas were restored with clean dirt and replanted with sod. The excavated soils were properly disposed of at the Waste Management Kettleman Hills Facility.

For more information, please contact Ray Leclerc, Hazardous Waste Management, DTSC, (916) 255-3582.

Pesticides: continue assessment and mitigation measures for applications of the pesticides methyl isothiocyanate (MITC), diazinon and chlorpyrifos

While the investigation conducted by Cal/EPA and CDPH did not find pesticide exposure to be a likely cause of the birth defects, Cal/EPA's modeling analysis estimated that airborne levels of three pesticides – MITC, chlorpyrifos and diazinon – were elevated on several days between 2006 and 2009. Similar elevated levels of these pesticides have also occurred in other agricultural areas of California. Cal/EPA concluded that the risk of toxic effects from pesticide exposures in Kettleman City is probably lower than in other Central Valley towns where pesticide use is greater.

To reduce pesticide exposures and health risks throughout California, the Department of Pesticide Regulation (DPR) has been conducting comprehensive risk assessments for all three pesticides. These risk assessments include evaluations of potential risks of birth defects, cancer and other health effects from exposures to these pesticides. The risk assessment for diazinon is in progress. For chlorpyrifos, DPR is reviewing and commenting on the US Environmental Protection Agency's (US EPA's) draft risk assessment, released on July 1, 2011. US EPA's risk assessment is comprehensive, including air monitoring data from California. DPR's risk assessment on chlorpyrifos is in progress and will include most of the collaborative work done with US EPA on data evaluation rather than duplicating the work.

DPR completed the risk assessment for MITC and, in December 2010, issued suggested conditions for MITC pesticide permits issued by county agricultural commissioners. In addition, US EPA is phasing in mitigation measures nationwide for MITC pesticides that should be complete by the end of the year. These measures cover the methods that may be used for applying MITC, specify "buffer zones" (locations close to populated areas) where it cannot be used, and also include worker protections, applicator training requirements, air monitoring, neighborhood notifications of MITC use, and community outreach. In April 2011, DPR and US EPA completed joint

training of staff from California's agricultural counties on the MITC permit conditions and the first phase of US EPA's mitigation measures.

For more information, please contact Randy Segawa, Pesticide Programs Division, DPR, (916) 324-4137.

Benzene emissions from the air stripping units at the municipal water wells

In its 2010 investigation, Cal/EPA measured elevated levels of benzene emissions into the air from a water treatment unit at the southwest Kettleman City drinking water well. The treatment effectively removes benzene from the drinking water before the water is delivered to the public. The measured benzene emissions in the air are too low to pose a general health risk to the community. However, there may be unnecessary exposures to benzene in the immediate surrounding area.

The San Joaquin Valley Air Pollution Control District (APCD) has determined that permits and emission controls are required to reduce benzene emissions from the water treatment units (also known as the air stripping units) at both of the community's two drinking water wells, including the southwest well. Although KCCSD is pursuing opportunities to use California Aqueduct water in place of well water, it will be a number of years before the infrastructure (water treatment plant) is available, so the APCD is requiring KCCSD to modify the existing treatment units.

The APCD is currently working with KCCSD on some design changes that will reduce benzene emissions from the treatment units. The APCD anticipates issuing permits for the operation of the treatment units with controls to reduce benzene emissions.

For more information, please contact Dave Warner, Director of Permit Services, San Joaquin Valley APCD, (559) 230-6000.