USC University of Southern California

DEPARTMENT OF PREVENTIVE MEDICINE

Gideon Kracov, J.D., Chair
Independent Review Panel to the DTSC

Re: Recommendations for DTSC on addressing lead contamination

June 13, 2016

Chairman Kracov:

Below please find our recommendations to improve site assessment and remediation to prevent exposure to lead and other toxic metals around the Exide Technologies (Exide) facility in Vernon, CA as well as across the state of California. We are faculty in the Division of Environmental Health at the Keck School of Medicine at University of Southern California in Los Angeles, CA where we also co-direct the Community Outreach and Engagement Program for the Southern California Environmental Health Sciences Center. Additionally, Ms. Hricko serves on the Exide Community Advisory Group.

DTSC testing for lead soil contamination

When hazardous waste is found on public or private property, DTSC has the responsibility to test the level of waste and to determine the best methods of removing it safely. In the case of Exide, DTSC has taken months (and actually many years) to test the soil in the community around the Exide battery recycling facility in Vernon, CA. Up until recently, their approach relied upon laboratory methods for analysis. Currently, DTSC started to use an X-ray fluorescence (XRF, a method of instantaneous detection) machine for detecting lead in soil, with samples taken for laboratory validation. We recommend that DTSC routinely use rapid-sampling assessment approaches, such as the XRF, for community testing of metals in soil and paint, with some samples taken for laboratory validation.

Making lead testing results more transparent

The use of on-site rapid soil lead (Pb) testing in the community surrounding Exide is an important step in the identification of current contamination levels and exposure risks. However, there is a need to make the process and the results transparent, not only to individual homeowners, but for the larger community. Sharing data not only increases transparency and accountability of public agencies, but also empowers communities with the needed information to inform action. In order to appropriately provide data to the participants, there are several items to consider to improve risk communication: (1) present the individual samples results in context of residential and hazardous waste soil standards relevant to the state of California (that is, rather than providing just a “number” to residents, provide an explanation); (2) contextualize the results within the average and range of measured Pb concentrations in the larger neighborhood so that residents can see the results for their home compared to others; and (3) clearly label and describe all data provided in lay terms.

Sharing patterns of lead contamination in the community with other public agencies and the general public

Aside from individual properties, it is important for the community and for public agencies to target efforts based on the patterns of Pb contamination in the community. This information can inform not only remediation efforts, but the focusing of resources. DTSC is the agency collecting the data. Sharing this information, assessing patterns of soil Pb levels (and other toxic metals), and encouraging the use of such data by other entities, is critical. Thus, DTSC should be sharing the names/addresses/and lead-in-soil (and lead-in-paint if obtained) contamination levels with both the County Health Department and the California Department of Public Health (CDPH) Lead Poisoning Prevention Programs. Also, currently, it is difficult for the public to obtain maps of lead in contaminated soil, even by public records act requests. We recommend that DTSC create maps of communities impacted by lead averaging lead levels in contaminated soil by census block and make the maps public.

Public Health Surveillance on Lead

The presence of toxic metals in soils appears to be an important problem, not only for the neighbors of Exide, but across Los Angeles County (and beyond). Lead is one chemical where there exist multiple mandates to monitor both people and the environment. The events around Exide demonstrate that there is no coordinated effort to understand Pb exposures across sources and jurisdictions in the state of California. A Statewide Lead Taskforce could assist in the sharing of information, leveraging of resources and establishing of a comprehensive surveillance program that examines trends and patterns using current scientific knowledge on lead toxicity. There is compelling evidence that lead harms children in any amount, including very low-levels of exposure. Exposure to high levels of lead is also harmful to workers, and workers can bring lead home in their cars or on their clothes. The Taskforce should include, at the least, representatives of the DTSC, CDPH, Cal OSHA, the Regional Water Quality Control Board, representatives of the County health departments with the largest number of children with elevated blood lead levels, worker safety advocates and union representatives knowledgeable about lead exposure, healthy housing representatives, and environmental justice advocates from impacted communities.

Blood lead testing and sharing of results

The California Department of Public Health (CDPH) collects and stores all blood Pb testing results from children living in CA. Only children in public programs (i.e. MediCal or food stamps) are mandated to receive a blood Pb test at ages 1 and 2. The current rate of participation among young children is not known to the authors, although a recent news story stated that only 1/3 of eligible children in the state receive blood lead tests paid for by MediCal. The state's childhood lead biomonitoring program uses antiquated guidelines, inconsistent with current evidence. A lead poisoning case is defined as one blood lead test ≥ 20 µg/dL or two tests ≥ 15 µg/dL. Recommendations from the Centers for Disease Control (CDC) is one quarter this concentration or ≥5 µg/dL. Despite overwhelming evidence that cognitive deficits are possible in children with blood Pb levels less than 5 µg/dL, the state does not require laboratories to report values <5 µg/dL. For example, if a child has a blood Pb level of 3 µg/dL, the laboratory may only report to the state that the levels are <5 µg/dL. As a result, there is a significant gap in data to evaluate children

blood Pb trends. Secondly, it does not appear that this data is routinely mapped to assess pattern across space and time. Such activities are fundamental components of public health surveillance.

Exide Technologies and childhood blood lead levels

Largely due to the weaknesses in the Pb biomonitoring dataset described above, the utility of the analysis of BLL in 2012 near Exide is limited to address human health risk or assess the impact of the Pb emissions due to Exide operations. The CDPH study examines only the prevalence of BLL ≥5 µg/dL during one year and is not designed to look at trends (or changes) in concentrations of Pb in children's blood. Secondly, the oldest homes evaluated in the CDPH study of blood lead levels are also the homes closest to Exide, the source; thus it is difficult to distinguish in the CDPH model the influence of age of home versus proximity. The homes closest to the site, where a higher prevalence of elevated BLL were seen in 2012 may also have higher concentrations of Pb indoors as the Pb concentrations may buildup over time. Wind patterns were not considered in this analysis. Since Pb emissions were airborne and deposited on the surrounding community, dominant wind directions are an important risk factor.

The data were aggregated to census tract level. While, this may be appropriate to examine patterns across the county of Los Angeles, there are not sufficient number of tracts in the 1.7-mile area to evaluate any distance trends. Census blocks, which are designed to represent a "neighborhood block" would be a more appropriate geographic unit to assess relationship between elevated BLL and distance from Exide. This analysis is limited to one year of data, when Exide reduced its ambient air Pb emissions. Understanding trends and distance relationships relations leveraging multiple years of data. We recommend including at least 5 years of data in any CDPH analysis to have the data be of use to DTSC.

Finally, P-values ("significance") or confidence intervals should be assessed with caution in this model. This CDPH/DTSC study involved neither random sampling nor random allocation, results may be due to the factors under investigation, unmeasured factors, or measurement error, but not chance.

Making DTSC data more accessible to the public

Figure 1: Public search on DTSC webpage
https://www.dtsc.ca.gov/IDManifest/Manifests.cfm

Some data of DTSC is available on EPA's Envirostor database. But if one wants to find out all of the hazardous waste generators in a given community or within in a certain distance from a particular address, there does not seem to be a public-friendly way to conduct this search. This is the search form – and it does not work unless one fills in all the different blanks (Figure 1). In other words, if one puts in "Los Angeles, CA" nothing is retrieved.

We recommend that DTSC have a public and easily accessible database through which the public can search for hazardous waste generators and transporters by simply putting in an address of a location that interests the questioner.

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Summary of Recommendations to DTSC and state of California

- Establish a Statewide Lead Task Force to develop methods for surveillance of Pb exposures in CA that includes environmental, public health and occupational agencies at the state and local level.
    - Improve interagency dialogue and methods to utilize and share information across departments.
    - Review best practices on Pb prevention and surveillance activities and provide recommendations.
- Compile BLL data at the census block level with average, range and prevalence of elevated BLL (≥5 µg/dL) for the state of California. DTSC staff (and County Health Departments) would then be able to identify any areas in California where there seemed to be an unusually high rate of elevated blood lead levels to investigate potential sources of emissions or hazardous waste.
- Use 2orker (and employers) BLLs to identify potential community 'hot spots' for lead exposure.
    - All labs should be reporting names/addresses of employers of workers' blood lead data to the CDPH.
    - CDPH should inform county health departments about problem companies and ensure that county checks on all children of workers with elevated BLLs.
- Leverage resources to address multiple exposure pathways to Pb in this community.
    - Assess indoor exposures and dust in the study area.
    - Assure that cleanups are not impacting house interiors.
    - Enforce adequate protections such that cleanup workers are not bringing lead dust into their cars or homes.
- Improve accessibility of DTSC data for the public.

Respectfully,

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