Provisional Joint Health Statement Summary

The Zeneca and UC Richmond Field Station Sites

Contra Costa County Health Services Department and California Department of Health Services

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Health officials in our two agencies have been asked to comment on the possible health consequences from exposures at two adjacent sites in Richmond, Zeneca (formerly Stauffer Chemical Company) and University of California (UC) Richmond Field Station (RFS) (formerly the California Cap Company). Both sites are located between the San Francisco Bay (where they include contaminated marshland) and highway 580, and between Point Isabelle on the southeast and Marina Bay on the northwest.

Historic industrial activities at the Zeneca site included production of sulfuric acid starting in the late 1800s and between the 1950s and 1985, as well as production of pesticides and herbicides. Starting in the late 1800s, explosives were manufactured on the southeast portion of the RFS site, leaving mercury contamination. Furthermore, materials from the Zeneca site were deposited on adjacent parts of the RFS. Since the 1950s, the RFS has been used as a research center, library storage facility, and laboratory.

This joint interim health statement of the Contra Costa County Health Services Department and the California Department of Health Services is based upon available information about *current* exposure from these sites. We have focused on airborne exposures to workers and immediate neighbors during recent excavation activities on the Zeneca site, potential exposures to regular employees who have to dig in the soil of either site including the marshes, as well as exposures to community members who come into contact with marsh soil and surface water. We also discuss the potential of exposure from possible off-gassing of volatile chemicals in shallow groundwater under the Zeneca site and under the businesses on 49th Street, just southeast of the Zeneca excavation site.

If any new information arises that warrants changes in our conclusions or our recommended actions, we will release an updated report. A more complete report will be drafted over the next year. Below is a summary of the statement.

Contaminants of Concern

Contaminants detected on the Zeneca site include pyrite cinder waste (which contains arsenic, lead, zinc, selenium, cadmium, and copper), pesticides, herbicides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs) including the carcinogen vinyl chloride, and petroleum hydrocarbons. Contaminants detected on the RFS site include mercury from the former California Cap Company, and pyrite cinder waste from Stauffer Chemical Company. PCBs also have been detected.

Current Routes of Exposure

Outdoor Air

Outdoor air at the Zeneca and Richmond Field Station or in the surrounding area does not appear to pose a public health hazard, except during remediation activities.

Air sampling just within the fence line of the Zeneca excavation during the last year did not detect pesticides, PCBs, or volatile solvents at levels that would violate current health standards (and for the most part these have not been detected at all). Arsenic or other carcinogens have not been detected in the air. Dust levels have reached the point that eye and respiratory irritation may occur to workers and the nearest neighbors. Hydrogen sulfide gas, which is present in swampy areas and may be related to the residues from old sulfuric acid production byproducts, has also been detected and could lead to transient irritation symptoms in workers and nearest neighbors.

Occupational Contact with Soil

Activities like tree planting and plumbing repair on the RFS campus may bring workers into contact with one of the spots with mercury, arsenic, or PCBs in the soil at levels of health concern. This is especially true of the southeast part of the site.

Workers at the Zeneca site, when excavating, can encounter a wider range of agents.

Restoration work in the excavated (i.e., remediated) areas of the marsh does not pose a current public health hazard.

Recreational Contact with Soil in the East and West Stege Marsh

Handling of unremediated marsh soil and contact with surface waters can lead to skin absorption, dust inhalation, and inadvertent ingestion.

The most likely health effects from the usual kind of exposure to soil and surface water would be skin problems from arsenic, although chemicals at higher doses can have toxic effects on various organ systems. We attempted to estimate theoretical lifetime cancer risks from the usual kind of exposure from soil contact and they were extremely low.

Volatile Chemicals in the Groundwater

The shallow groundwater flowing toward the bay under the Zeneca site, which is not used for drinking, is close enough to the surface that it could potentially off-gas into nearby buildings.

Indoor air sampling and computer models based on samples of the air in subsurface soil (i.e., soil gas) suggest that there is no health risk to children or staff who use building on the Zeneca property for the Making Waves after school program..

The Department of Toxic Substances Control (DTSC) is conducting investigations of groundwater and soil gas under businesses along South 49th and South 50th Streets. Once these investigations are complete, an evaluation of whether the indoor air in these businesses is being affected by contaminated groundwater will be done.

Recommendations

Additional Information

1. DTSC should conduct additional sampling of groundwater on South 49th Street to ensure that there is an adequate understanding of the extent of the VOC-contaminated groundwater plume. DTSC plans to collect this data by fall 2005.
2. DTSC should sample the imported surface sediments used in recent (2004 – 2005) East Stege Marsh remediation to ensure clean fill materials are used to backfill the marsh.
3. DTSC and UC should sample surface water in the marsh to better understand current conditions.
4. The UC should characterize the groundwater at the east and northeast side of the RFS to better understand the potential for soil gas to be affecting the indoor air in buildings in this area.

Action

1. Future activities on the site should be monitored for air quality along the perimeter of the site to ensure safe air quality for workers, residents, and recreators in the area.
2. Local workers and residents should be notified of remediation activities before they begin.
3. Detection limits in future air sampling at both sites should be set as low as feasible to better understand the air quality in the area and the potential impacts on people.
4. DTSC should fence and post the East Stege Marsh to reduce potential for exposure to unremediated parts of the marsh. *(Action completed December 2005)*
5. UC should fence and post the West Stege Marsh to reduce potential for exposure to unremediated parts of the marsh.
6. UC should draft a letter to RFS staff as promised that assures them of no reprisals or recrimination for asking questions about environmental quality at the site.
7. UC should review past worker practices on the site to determine which workers were digging in unexcavated areas and how often, to better inform their health and safety plan.
8. UC health and safety plans should assume that contamination could be found at any location on the site until it is shown to be "safe." Staff on the RFS grounds should be instructed what to do if they encounter cinders when digging.
9. UC should develop a health and safety plan for restoration work in the excavated areas of the UC marsh that takes into account the current and future exposures from chemicals migrating from non-excavated areas of the marsh.
10. UC should provide all RFS staff access to updated computer-based maps demonstrating locations of historic structures and where soil samples have been obtained, along with the associated contaminant level measurements.
11. UC should offer Hazwopper training to workers whose work may involve handling or digging in soils on site.

Next Steps

1. Contra Costa County Health Services Department and California Department of Health Services will continue to review data provided by DTSC, UC RFS, and Zeneca and their contractors.
2. We will reevaluate this health statement and share our findings every 6 months with the Community Advisory Group (CAG) or in another public context unless new information warrants emergency action. *(First revision completed December 2005)*
3. Upon reviewing all available data on past and future exposure pathways (exposures we did not discuss in this statement), we will issue a final health statement and recommendations.
4. We will consult with local health care providers and offer technical assistance to Richmond city officials as needed.
5. In addition, we propose to schedule an interagency process evaluation for February 2006. We will ask involved agencies to describe what was done, what still needs to be done, and what regulatory or policy changes may be needed.