



Public Health Implications of Exposure to PCB-Contaminated Soil in the Far South Region of the Hamilton-Sundstrand RCRA Site - Denver, Adams County, Colorado

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The Hazardous Materials and Waste Management Division (HWWMD) of the Colorado Department of Public Health and Environment (CDPHE) requested that the Colorado Cooperative Program for Environmental Health Assessments (CCPEHA) evaluate the public health implications associated with exposure to polychlorinated biphenyl (PCB) soil contamination in Area of Concern 2 (AOC2) within the Facility Parcel at the Hamilton Sundstrand site in Adams County, Colorado. Future exposures are limited to three groups of people who could potentially contact contaminated soil in the future; recreational users, maintenance workers, and construction workers.

Site Background

- Hamilton-Sundstrand manufactured and tested components for the aerospace industry. The site opened in 1955 and ceased operations in April of 2004.
- Various wastes were generated during operations at the plant including polychlorinated biphenyls, solvents, and petroleum-based oils laden with tetrachloroethene and trichloroethene.
- Decommissioning began at the plant in 2002. Currently, the plant buildings and parking lots have been dismantled and the only buildings that remain onsite support remedial activities.
- The site consists of two main areas: the Facility Parcel and the adjacent Vacant Parcel. The Facility Parcel is 43 acres and consisted of the plant's buildings, underground storage tanks, and an above ground storage tank. Area of Concern 2 (AOC 2) is located in the far southern portion of this Facility Parcel.
- An Environmental Covenant is currently in place to restrict future land-use of the Facility Parcel to a recreational use area. Future residential exposures are not likely due to the environmental covenant that is in place, and the fact that this portion of the site lies in a 100 year floodplain area.
- PCBs are a group of man-made, chlorinated organic compounds that are not known to occur naturally in the environment. In 1979, the manufacture of PCBs in the U.S. was banned because of growing evidence indicating that PCBs can build up in the environment and cause harmful health effects. Despite the ban on PCBs, they are found throughout the environment due to their widespread use prior to 1979 and their resistance to degradation.

What did CCPEHA find in the Health Consultation?

- CCPEHA has reached one conclusion regarding the public health implications of future exposure to PCB contamination in soil in the far south portion of the Hamilton Sundstrand site:
 - *It is not known if contacting PCBs in soil in AOC 2 could harm the health of future child and adult recreational users, adult recreational users, construction workers, or maintenance workers.* This conclusion was reached because critical exposure data and health information is unavailable for detected PCB compounds found in surface and subsurface soil within AOC. Specifically, chronic health-based guidelines for Aroclor 1242 and Aroclor 1248 are unavailable, no acute health guidelines are available from the EPA or ATSDR to evaluate the potential for acute health effects from child exposures to PCBs in soil, and no data are available for the preferred surface soil depth interval of 0-2 inches to evaluate acute and/or chronic health risks to recreational users.
 - At this time, the available information indicates the following:
 - The estimated non-cancer health hazards for Aroclor 1242 and Aroclor 1248, based on the use of toxicity values for Aroclor 1254, enter a range of potential concern for recreational children, construction workers, and maintenance workers.
 - The estimated theoretical cancer risks for future recreational users and maintenance workers are slightly higher than the acceptable cancer risk range. The estimated theoretical cancer risks for construction workers are within the acceptable cancer risk range. These risk estimates indicate a low increased risk of developing cancer.

What's next?

- To be prudent of public health, Hamilton Sundstrand should reduce exposure to PCB contaminated soil in AOC 2. This can include remediation and removal of contaminated soil and/or institutional controls.
- Upon request, CCPEHA will provide assistance to State and Local environmental officials on sampling plans and analysis.
- CCPEHA will review any additional data collected from the Hamilton-Sundstrand site and evaluate the public health implications of the new data.
- CCPEHA will provide appropriate health education activities on the findings of this health consultation to stakeholders and the community.

FREQUENTLY ASKED QUESTIONS:

What is a health consultation? A health consultation provides advice on a specific public health issue related to real or possible human exposure to toxic material. A Health Consultation is a way for the Colorado Department of Public Health and Environment to respond quickly to a need for health information on toxic substances and to make recommendations for actions to protect the public's health. Health Consultations may consider:

1. The levels (or "concentrations") of hazardous substances;
2. If and how people might be exposed to contamination (through "exposure pathways" such as breathing air, drinking or contacting water, contacting or eating soil, or eating food);
3. The harm the substances might cause to people (or the contaminants' "toxicity");
4. If and how working or living nearby might affect people's health; and
5. Other dangers to people, such as unsafe buildings, explosive hazards, or other physical hazards.

Where can I find this health consultation?

An electronic copy of this health consultation can be found at: <http://www.cdphe.state.co.us/dc/ehs/healthconsult.html>. For more information about the health consultation, please feel free to contact Thomas Simmons, Health Assessor, at 303-692-2961. For other site-related concerns, please call Dave Walker, CDPHE Site Project Manager, at 303-692-3354(direct) or toll free at 1-888-569-1831, ext. 3354.

What is an environmental covenant?

This is an enforceable agreement that allows CDPHE to restrict the future use of a property. While the general goal of most cleanups is to return the site to a condition where it can be safely used for any purpose, this is not always technically possible or economically practicable. When a site is not cleaned up completely, use restrictions may be used to supplement cleanup measures to ensure that the selected cleanup remedy is protective of public health.

Why is an environmental covenant useful as part of a cleanup?

Future land use can affect the determination of what is a safe cleanup level. Cleanup levels are sometimes based on a site-specific assessment of the risk posed by remaining contamination. The nature and amount of exposure to contamination is a factor in determining risk. In turn, land use determines exposure to contamination. For instance, contaminated soil may pose little risk if it is covered by an asphalt parking lot. The same soil could be very hazardous if it were used for a garden, or a yard where children play. If cleanup levels are based on an assumption that the future land use will be a parking lot, and the land use changes to residential, the old cleanup levels may not be protective for the new use. Therefore, to ensure the cleanup remedy stays protective, the environmental regulator that approved the cleanup decision must be able to enforce the land use restriction against subsequent landowners.