



Evaluation of Potential Soil Exposures of Future Residents at the Hamilton-Sundstrand RCRA Site - Denver, Adams County, Colorado

September 2010

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) conduct a health consultation to evaluate the potential public health hazards associated with site-related contamination that remains in subsurface soil of the Facility Parcel at the Hamilton-Sundstrand site. An Environmental Covenant is currently in place to restrict future land-use of the Facility Parcel to a recreational use area. However, it is possible this Covenant could be removed in the future potentially allowing the area to be developed into a residential neighborhood. Thus, the purpose of the health consultation is to evaluate this hypothetical scenario to assist stakeholders in making future risk management decisions regarding future land use of the northern portion of the Facility Parcel.

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. There are 2 main areas of the site including the Facility Parcel and the adjacent Vacant Parcel.
- Residential soil exposures are the only exposure scenario evaluated here since all other pathways have been eliminated, have had exposures reduced to health based levels, or are currently undergoing remediation.

What did CCPEHA find in the Health Consultation?

- It cannot currently be determined if future residential exposure to chemicals present in subsurface soil would harm people's health. This conclusion was reached because critical health information (i.e., chemical toxicity values or health effects levels) is unavailable for multiple chemicals that were detected in the subsurface soil in the northern portion of the Facility Parcel at the Hamilton-Sundstrand site. It should, however, be noted that the available information indicates the following:
 - Theoretical cancer risks for future residents from contacting chemicals with known toxicity values through incidental ingestion and skin contact are just above the high-end of acceptable cancer risk range. This indicates that exposure to contaminants found in the subsurface soil at the Hamilton-Sundstrand Facility Parcel are associated with a low to moderate increased risk of developing cancer.
 - The qualitative evaluation for PCBs without toxicity values indicates that potential exposure to PCBs enters into a range of potential concern since the combined estimated exposure doses significantly exceed the health-based guideline.

What's next?

- The Environmental Covenant in place on the northern portion of the Facility Parcel should remain to prohibit the use of this area as a residential neighborhood because: (1) there are uncertainties associated with this evaluation, which includes detected chemicals without known toxicity values and potential exposures pathways that cannot currently be evaluated; and (2) subsurface soils should be remediated to the CDPHE acceptable cancer risk level of one in a million prior to a change in the Environmental Covenant to allow residential use.
- CCPEHA will review any additional data collected from the Hamilton-Sundstrand site and evaluate the public health implications of the new data. In particular, environmental characterization of soil is ongoing in the southern portion of the Facility Parcel. Once these efforts are complete, an additional health consultation will be conducted to address the same concerns on the southern portion of the Facility Parcel.
- 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>. To request a free copy of this health consultation, call Shannon Rossiter, Health Educator, at 303-692-2617. 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.