



The **Hawaii Department of Health (HDOH), Hazard Evaluation and Emergency Response Office (HEER Office)** is a state environmental health division whose mission is to protect human health and the environment. The HEER Office provides leadership, support, and partnership in preventing, planning for, responding to, and enforcing environmental laws relating to releases or threats of releases of hazardous substances.

## ***Summary of HDOH Pesticide Investigation, Kahekili Terrace, Wailuku***

Kahekili Terrace was once the site of the first Wailuku sugar mill, and the plantation owned the land until the 1950s- 60s. In 2012, the Hawaii Department of Health tested the soil for pesticides on two different occasions. You may have seen us taking soil samples near the walkways. This Question and Answer sheet is a summary of what was found, what the health risks are, and what you can do to protect yourself and your family.

### ***What was found by the investigation?***

The soil was found to contain higher-than-usual amounts of dioxins and arsenic. The DOH often finds these chemicals near old sugar mills.

**Dioxins** form during pesticide manufacturing, incineration and other industrial processes. Dioxins have been found in the soil at several former sugar properties in the islands, especially near old pesticide mixing and loading areas. **Arsenic** is a naturally-occurring metal-like chemical. Long-term use of arsenic-based pesticides and herbicides can cause higher-than-normal levels of arsenic in the soil.

### ***What kind of health risk does this pose to me?***

Both dioxin and arsenic bind tightly to soil. They enter our bodies through our diet every day, in low amounts. At Kahekili Terrace, soil arsenic levels are slightly higher than the DOH Residential Environmental Action Level. Based on our study, we are mainly concerned about dioxin. Dioxin levels do not pose a short term health risk, but are considerably higher than DOH's Residential Environmental Action Level. Since this is a residential area, we are working together with Hawaii Public Housing Authority to ensure the residents are protected and to come up with an effective long term solution. Last summer, you may have noticed that HPHA placed sod behind one of the buildings. This simple step reduces contact with surface soils. In the short-term, we offer the following suggestions so that staff and residents, especially children, don't accidentally eat any of the soil.

### ***What should I do?***

**Remember: Dioxin, like arsenic, binds tightly to soil. Accidentally eating the soil is the main way for it to get into your body. For your safety, we recommend you:**

- Maintain grass, other plant cover, or some kind of surface material over the soil.
- Do not allow children to play in bare dirt. Keep toys and hands clean. Note that DOH carefully tested the fenced playground area and determined that the soils there do not have elevated levels of pesticides. No special precautions are needed for play activities in this area.
- Do not garden in the dirt. Garden in planter boxes or raised beds with clean, imported soil. If you eat from your garden, wash the produce well before bringing it into the house and eating it.
- Wash and wipe hands and face after spending time outside, especially before meals and snacks.
- Keep soil out of your home. Remove shoes before entering the house.

On Friday, March 1, DOH staff will be meeting with residents. You are welcome bring concerns and questions. The meeting will be from 5-6 pm. Please contact the Kahekili Terrace property office for details.

If you have specific health questions or concerns, you may contact the HEER Office at 808-586-4249.



Left: DOH staff were able to overlay historical maps onto current satellite photos to confirm that part of the Kahekili Terrace housing development is located on top of the old pesticide mixing building (boxed in red).

Below: The DOH tested several areas in March and August 2012. Dioxin and arsenic levels in soil are elevated in all areas tested, except for Decision Unit 13 (playground area), where soil and sand were imported from elsewhere.



**Green:** Area 13 is the Head Start playground. This area is clean.

**Yellow:** These areas show dioxins and arsenic above DOH Residential Environmental Action Level (EAL). This means that safety measures are required.

**Orange:** This area has dioxin and arsenic levels close to the Commercial/Industrial EAL. Safety measures are required.