



Department of Health  
HEER Office, 1582  
Kamehameha Avenue,  
Hilo, Hawai'i 96720-4623

# FACT SHEET

## Proposed Removal Action at the former Hakalau/Pepe'ekeo Sugar Company Pesticide Storage/Mixing site, Hakalau, Hawai'i

TMK 3-2-9-02:79&81

### Introduction

The State of Hawai'i Department of Health (HDOH) is publishing this fact sheet to provide information and to solicit comments from persons interested in the proposed arsenic cleanup project by the Shropshire Group, LLC at a property located in Hakalau, Hawai'i County (Figure 1). The HDOH Hazard Evaluation and Emergency Response Office (HEER Office) is providing oversight, and the investigation and public participation requirements are being conducted pursuant with Hawai'i Administrative Rules Chapter 11-451 and the State Contingency Plan. This fact sheet outlines the proposed remedial options and the remedy proposed to address arsenic soil contamination at the site.

A Draft Removal Action Report presents details on alternative remedies to address elevated soil arsenic at the former Hakalau/Pepe'ekeo Sugar Company property. Each alternative is described and evaluated in terms of effectiveness, implementability and cost. A recommendation is made on the preferred remedy to address the soil arsenic problem.

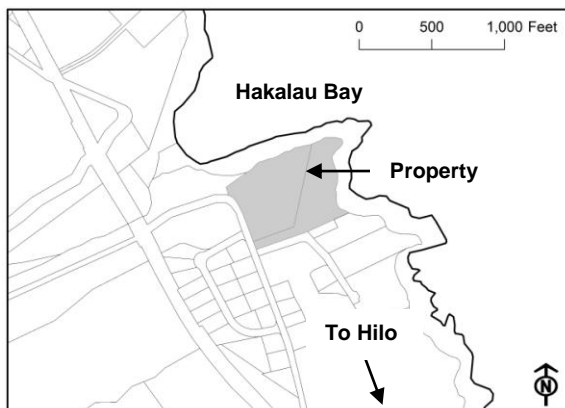


Figure 1. Property Location, in Hakalau, HI

### Site Description and Property Information

The subject property (site) consists of approximately 8.7 acres of land along the coastline at Hakalau, Hawai'i, which formerly housed Hakalau and Pepe'ekeo Sugar Company facilities. The parcel TMKs are 03-2-9-02: 79 and 81. The site supported former operations in the plantation fields and the mill facility located just north and down in the Hakalau stream gulch. Historic operations on the subject property included offices; maintenance shops; warehousing; storage for gasoline, oil, fertilizer; seed dipping; and pesticide storage and mixing. Several former plantation buildings remain on the property, with the remainder vacant and vegetated.

Site investigations have been conducted by HDOH and the property owner to identify the contaminants of concern and areas of soil contamination. Arsenic, which was historically used as an herbicide in sugar cane cultivation, is the principal chemical of concern and soil environmental hazard.

Soils in the vicinity of the former pesticide mixing area ("source area") show high arsenic concentrations in surface soils, and impacts extend to a depth of approximately 6.5 feet below grade in the source area. Elevated soil arsenic is also present downhill from the source area, however only in the shallow soils (typically <2 feet in depth). Several other areas of elevated soil arsenic were also observed outside the main source area at the former pesticide storage/mixing building.

HDOH manages soil arsenic hazards based on a measure of bioaccessible arsenic, which is the fraction of total arsenic that is expected to be available for uptake by way of incidental soil ingestion of arsenic-contaminated soil. Soils with bioaccessible arsenic below 23 mg/kg (Category B soils) are considered minimally impacted, and are "within acceptable health risks for long-term exposure". Category C soils (moderately

impacted) have bioaccessible arsenic levels from 23 to 95 mg/kg, and sites with these soils need further evaluation or controls for unrestricted (i.e residential) land use. Sites with Category C soils may be suitable for commercial or industrial land uses. Category D soils with bioaccessible arsenic above 95 mg/kg (heavily impacted) typically require remedial action irrespective of future land use.

Site investigation work indicates that there are approximately 5,300 cubic yards (cy) of Category C arsenic contaminated soils, and 800 cy of Category D arsenic contaminated soils at the site.

### Removal Action Objectives

The primary focus of the removal action is to address elevated arsenic in the soils at the site to provide protection of human and ecological health by preventing direct exposures to arsenic-impacted soils. The removal action objectives are as follows:

1. Cleanup portions of the property anticipated for future unrestricted (residential) land use to appropriate bioaccessible arsenic soil concentrations, herein defined as removal action levels
2. Prevent migration of contaminants to surface or groundwater
3. Minimize potential risk to human health or ecological receptors from exposure to arsenic impacted soil, during and after the removal action

The property owner anticipates unrestricted (residential) land use for the majority of property, therefore a level of less than or equal to 23 mg/kg bioaccessible arsenic is recommended for areas of the site considered for future residential use.

### Proposed Remedy

A number of removal action alternatives were considered to address the soil contamination on site. The Removal Action alternatives selected for final consideration included:

1. No Action (included for comparative baseline)
2. Excavation and Offsite Landfill Disposal of Arsenic Category C and D Soils

3. Onsite Containment Cell for Arsenic Category C and D Soils
4. Onsite Containment Cell for Arsenic Category C Soils, Offsite Landfill Disposal of Arsenic Category D Soils
5. Onsite Consolidation and Capping of Arsenic Category C and D Soils at Source Area.

Each alternative was considered in light of the Removal Action Objectives for the site as well as effectiveness, implementability, and cost.

The proposed removal action alternative recommended is alternative 4: Onsite Containment Cell for Arsenic Category C Soils, Offsite Landfill Disposal of Arsenic Category D Soils. This option was judged appropriate to ensure that any risks to human health or the environment would be avoided. This alternative consists of excavation of all heavily impacted arsenic soils (exceeding 95 mg/kg bioaccessible arsenic) and disposal in an approved landfill (West Hawai'i). Moderately impacted soils (Category C, between 23-95 mg/kg bioaccessible arsenic) would be buried in an engineered on-site containment cell constructed with a hard cap (asphalt) surface. The portion of the site with the soil containment cell would remain in industrial or commercial zoning. Institutional controls for long-term maintenance of the soil containment cell will include preparation of an Environmental Hazard Management Plan and recording of the plan with the property deed.

### Next Steps and Community Involvement

HDOH encourages members of the public to review and comment on the DRAFT Removal Action Report (DRAFT RAR) and proposed remedy for this project during the comment period of May 15 through June 20, 2013. Written comments should be e-mailed (by June 20, 2013) to John Peard at [john.peard@doh.hawaii.gov](mailto:john.peard@doh.hawaii.gov) or mailed to the following address:

John Peard, Project Manager  
Hawai'i Department of Health, HEER Office  
1582 Kamehameha Ave.  
Hilo, Hawai'i 96720-4623

A public meeting will be held during the public comment period to provide an overview of

investigations at the site, answer questions, and discuss the Draft RAR including the remediation options considered and proposed. Comments from the public will also be accepted. This meeting will be held at the following location and time:

**Location:** Honomu Gym

**Address:** 28-1641 Govt. Main Rd. (in Honomu, just past the turn-off to Akaka Falls, on the right, and across from the Catholic Church)

**Date:** Thursday, May 23, 2013

**Time:** 6:00PM – 7:30PM

After the public comment period is over, HDOH will review and consider all comments received as well as any additional HDOH staff or management input before selecting the final cleanup remedy for the site.

### **Information Repository**

Relevant portions of the Administrative Record for this site are available for review at the Hilo Public Library (see Reference Desk) and the HDOH Environmental Health Building in Hilo at 1582 Kamehameha Avenue until June 20, 2013. This includes the Draft Removal Action Report (with the proposed remedy) and copies of recent investigations conducted at the site. The complete administrative record for the former Hakalau/Pepe'ekeo Sugar Company site is available for review upon request to HDOH.

For any inquiries regarding this project, contact: John Peard, HDOH Project Manager, at (808) 933-9921, or [john.peard@doh.hawaii.gov](mailto:john.peard@doh.hawaii.gov)