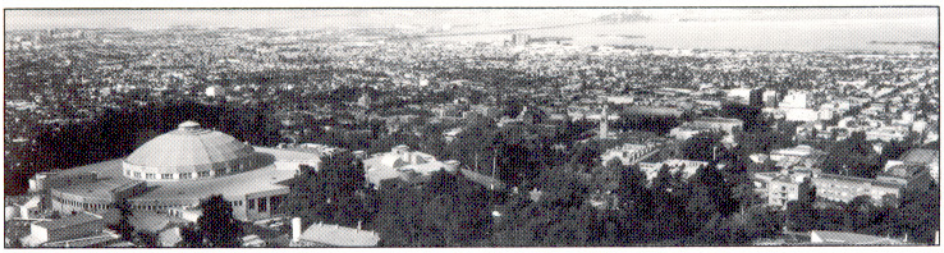
FACT SHEET NO. 2
FALL 1993



ENVIRONMENTAL RESTORATION PROGRAM

LAWRENCE BERKELEY LABORATORY

An update on the progress of Lawrence Berkeley Laboratory's Environmental Restoration Program

LBL's ENVIRONMENTAL RESTORATION PROGRAM

Lawrence Berkeley Laboratory's (LBL's) hazardous waste handling facility operates under the provisions of the Resource Conservation and Recovery Act (RCRA). On May 4, 1993, a Part B permit, required by RCRA, was issued to LBL by the California Environmental Protection Agency, Department of Toxic Substances Control. The permit requires LBL to investigate and address problems associated with past waste management practices at the LBL site.

Investigations of areas of potential environmental contamination, including soil, surface water, and groundwater contamination, are conducted at LBL under the Environmental Restoration Program. This is part of a nationwide effort by the U.S. Department of Energy (DOE) to identify and clean up contaminated areas at its facilities. LBL is currently in the RCRA Facility Investigation phase of the process.

THE RESOURCE CONSERVATION & RECOVERY ACT

RCRA was passed by Congress in 1976 and amended in 1984. Its goals are to:

- Protect human health and the environment
- Reduce waste
- Conserve energy and natural resources
- Reduce or eliminate the generation of hazardous waste

RCRA makes waste generators responsible for managing their waste from "cradle to grave." The objective of the **RCRA** corrective action process is to clean up releases that have occurred as a result of past waste management practices.

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LBL's ENVIRONMENTAL RESTORATION PROCESS

LBL's Environmental Restoration Program will go through the four-phase process outlined in Table 1. LBL is currently in Step 2 of the process. This step includes the study of site geology and hydrology; the construction of groundwater monitoring wells; regular sampling and analysis of groundwater, surface water, and soil; and the implementation of interim corrective measures.

Table 1

RCRA CORRECTIVE ACTION PROCESS

STEP 1:
PRELIMINARY INVESTIGATION (RCRA Facility Assessment)

Identify and evaluate past operating practices and releases or suspected releases (from spills, leaks, etc.) needing further investigation.

LBL completed this phase in October 1992.

STEP 2:
DETAILED INVESTIGATION (RCRA Facility Investigation)

Determine the extent and sources of contamination, and assess risk associated with the contamination. Take interim corrective measures if expedited action is needed to protect human health or the environment.

LBL is conducting investigations while implementing interim corrective measures. The laboratory is submitting quarterly progress reports to oversight agencies.

STEP 3:
STUDY OF POTENTIAL CLEANUP METHODS (Corrective Measures Study)

Evaluate possible cleanup methods to choose the most suitable ones for the LBL site.

STEP 4:
REMOVAL AND CLEANUP OF CONTAMINANTS (Corrective Measures Implementation)

Design, construct, and implement cleanup actions.

LBL FINDINGS

The primary chemicals detected in isolated areas of soil and groundwater at LBL to date are volatile organic compounds (VOCs) including tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), and cis-1,2-dichloroethene (cis-1,2-DCE). These common solvents and degreasers have been used at LBL for equipment cleaning. Smaller concentrations of other VOCs (e.g., benzene, toluene, ethylbenzene, xylene, carbon tetrachloride, and vinyl chloride) have also been detected in limited areas at LBL.

Tritium, a radioactive form of hydrogen, has been detected in soil, surface water, and groundwater in the vicinity of the National Tritium Labeling Facility. Tritium reaches the environment as a result of emissions of tritiated water from the stack at the facility. The tritiated water falls to the ground near the facility and enters the soil and groundwater. LBL has substantially reduced the quantity of tritiated water emitted from the stack in recent years and continues to work on ways to reduce emissions further. Tritium emissions from the stack are monitored continuously.

These chemicals, including tritium, do not affect the community's drinking water. East Bay Municipal Utility District (EBMUD) provides the water supply to the area. Nevertheless, LBL is concerned about groundwater pollution and is addressing this issue through the Environmental Restoration Program.

OVERSIGHT AGENCIES

CA Department of Toxic Substances Control

CA Department of Health Services

State Water Resources Control Board

Regional Water Quality Control Board

Emergency and Toxics Management Program (City of Berkeley)

PROGRESS SINCE FALL 1992

- In November 1992, LBL submitted a RCRA Facility Investigation Work Plan to the oversight agencies for review.
- LBL submitted the first of its required quarterly progress reports on the Environmental Restoration Program to the Department of Toxic Substances Control.
- LBL conducts quarterly progress meetings with representatives from federal, state, and local oversight agencies to report activities and findings and to receive agency input.
- As part of the RCRA Facility Investigation, LBL began sampling and analyzing groundwater, soil, and surface water.

INTERIM CORRECTIVE MEASURES

LBL is taking interim corrective measures to prevent off-site migration of contaminated groundwater and to remove identified sources of contamination from the ground. In one interim action, LBL removed VOC-contaminated soil and water from an abandoned sump discovered near the center of the facility. The sump is thought to have been a major source of soil and groundwater contamination.

In other ongoing actions, LBL has installed three groundwater extraction and filtration systems to manage the identified plumes of groundwater contamination.

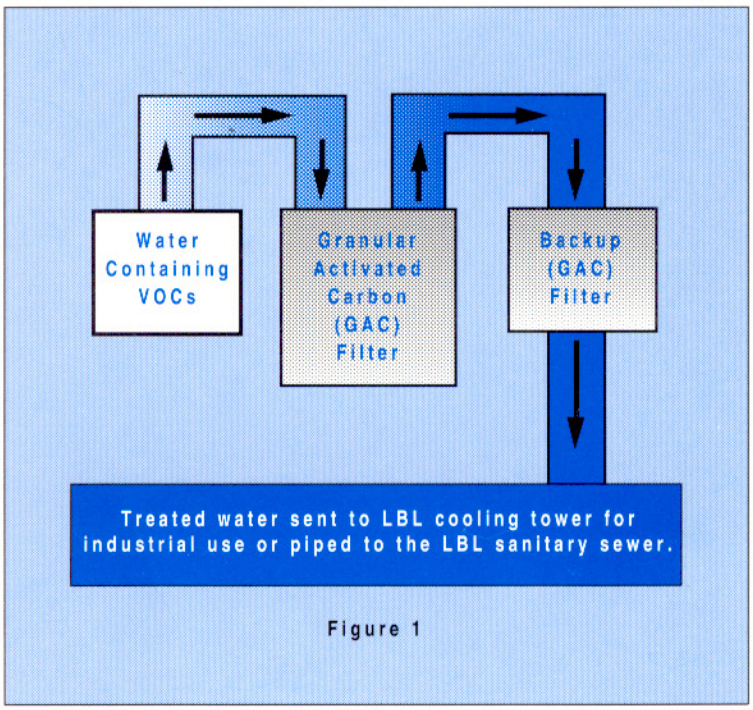

Figure 1

Each treatment system consists of two sets of granular activated carbon (GAC) filters in line: a primary filter and a backup unit (see Figure 1). As water containing VOCs passes through the primary filter, the VOCs adhere to the carbon and the water is cleaned. The used carbon filters are sent to a permitted facility where they are cleaned and recycled.

The treated water is recycled for LBL's industrial use or discharged to LBL's sanitary sewer, which is monitored to comply with EBMUD discharge requirements. By recycling the treated water instead of using new tap water, LBL saved approximately one million liters (300,000 gallons) between May and September 1993.

COMMUNITY RELATIONS PLAN NOW AVAILABLE

LBL has prepared a Community Relations Plan that outlines the community's opportunities for participation in the cleanup decision-making process. Throughout the corrective action process, LBL will work closely with the community to address community questions and concerns. To obtain a copy of the Community Relations Plan, contact the LBL Community Relations Office (see next page). Copies are also available for review at the information repositories listed on the back of this fact sheet.

INFORMATION REPOSITORIES OPEN TO THE PUBLIC AND LBL EMPLOYEES

LBL has set up two information repositories as resources for the community and LBL employees. The information repositories contain copies of the Community Relations Plan and major technical documents, such as the RCRA Facility Assessment, the RCRA Facility Investigation Work Plan, LBL's RCRA permit, and all other public information distributed about the Environmental Restoration Program. The repositories will contain reports detailing results of site investigations as they become available.

The locations and hours of the repositories are listed on the back page of this fact sheet.

PUBLIC INFORMATION REPOSITORY

Berkeley Public Library
2090 Kittredge Street
Berkeley, CA 94704
(510) 649-3926
Contact: Andrea Moss

Hours of Operation:
Mon. - Thurs.: 10 am - 9 pm
Fri. - Sat.: 10 am - 6 pm
Sun.: 1 am - 5 pm

LBL EMPLOYEE INFORMATION REPOSITORY

Lawrence Berkeley Laboratory
50 Main Library
One Cyclotron Road
Berkeley, CA 94720
(510) 486-6307
Contact: Carol Backhus

Hours of Operation:
Mon. - Fri.: 8 am - 5 pm

IN THE NEXT EDITION

- What are Maximum Contaminant Levels? (health-based standards)
- Update on Soil and Groundwater Investigations
- Interim Corrective Measures
- Community Relations Update

To get on the mailing list to receive future information on the Environmental Restoration Program or for a site tour, call the community relations coordinator at (510) 486-5122.
To comment on this fact sheet or to express interest, write to:

LBL Community Relations Office
Environmental Restoration Program at LBL
Building 65A-106
Berkeley, CA 94720

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