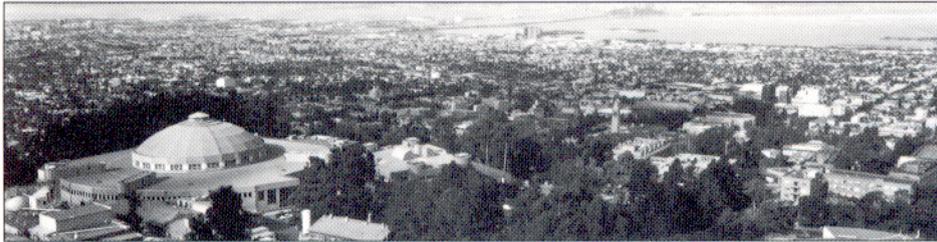


FACT SHEET NO. 3

SUMMER 1994



ENVIRONMENTAL RESTORATION PROGRAM

LAWRENCE BERKELEY LABORATORY



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

COMMUNITY QUESTIONS & ANSWERS

As part of its Environmental Restoration Program, Lawrence Berkeley Laboratory (LBL) conducted interviews with community members between February and April 1993 in preparation for developing a Community Relations Plan. During these interviews, people asked many questions about the Environmental Restoration Program and other LBL operations, and LBL responded. In order to share this information with the whole community, we have compiled some of the most frequently asked questions and LBL's answers in this fact sheet. We will continue to answer community questions in future fact sheets. If you have a question about LBL, please contact our Community Relations Office at the address on page 4.

WHAT KIND OF WORK DOES LBL DO?

LBL is a U.S. Department of Energy (DOE) research laboratory. It is managed by the University of California. Founded in 1931, LBL now conducts research in energy, environment, materials development, physics, transportation, computers and communication, and biology and medicine. Scientists working at LBL have received many awards, including nine Nobel prizes in chemistry and physics. The Laboratory makes its state-of-the-art facilities available to visiting researchers, works in cooperation with industry to develop competitive products and processes, and educates future generations of scientists through its school programs. LBL does not conduct weapons or classified research.

Some examples of the work LBL is doing include the following:

- *The newly constructed Advanced Light Source provides the world's brightest "soft" x-rays for materials science, chemistry, and biology research by industry, university, and national laboratory users.*

- *The Human Genome Center is part of a nationwide effort to decipher the human genetic code. Scientists hope that, by mapping human genes, we will be able to discover the causes and potential cures for some of our most devastating diseases.*
- *As part of Energy Sciences, LBL researchers are looking for ways to explore for and recover energy resources, increase energy efficiency, and protect human health and the environment from hazards that result from energy production.*

WHAT ARE TIGER TEAM REVIEWS?

Tiger Team reviews are an internal DOE audit process that was used over the past few years. During the review period, DOE regulatory specialists and scientists visited various DOE facilities to check for compliance with federal, state, and local regulations, as well as DOE guidance on procedures. Tiger Team reports showed which facilities were in compliance and which needed improvement to come into compliance. Although the Tiger Team results were made known to the public, the review process itself was internal. The last Tiger Team follow-up review for LBL was conducted in 1993, and LBL received high ratings for the corrective actions taken.

WHAT IS THE ENVIRONMENTAL RESTORATION PROGRAM? WHAT LAWS GOVERN THE PROCESS?

LBL's Environmental Restoration Program (ERP) is part of a nationwide effort by DOE to investigate and clean up hazardous waste releases at its facilities. The ERP at LBL began in 1991 to identify areas of soil and groundwater that need cleanup. LBL has reviewed facility records, talked to employees about past waste handling practices, and is currently taking samples of soil, surface water, and groundwater. Following these investigations, LBL plans to conduct cleanups where necessary.

The primary laws under which LBL is conducting its ERP investigation and cleanup are the Resource Conservation and Recovery Act (RCRA), and the Hazardous Waste Control Law, federal and state laws, respectively, that govern the generation, storage, treatment, and disposal of hazardous substances. Under these regulations, LBL was required to obtain a permit from the State Department of Toxic Substances Control to operate its hazardous waste handling facility. As part of the permit process, LBL had to evaluate its past operations and identify areas where contamination may have occurred (from spills or leaks, for instance). A schedule for investigation and cleanup is written into LBL's permit.

In addition to the above regulations, LBL must obey other federal, state, and local laws that apply to its ERP operations.

WHAT AGENCIES MONITOR ERP ACTIVITIES AT LBL?

The U.S. Department of Energy (DOE) is responsible for management and provision of funds to conduct the LBL Environmental Restoration Program. The agencies listed below are responsible for overseeing ERP operations at LBL. LBL meets with these agencies quarterly to report on environmental restoration progress and to discuss investigation and cleanup issues.

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) is the lead oversight agency for LBL's ERP, including all site characterization and

remediation work. DTSC reviews all plans, reports, and activities for compliance with Federal and DTSC regulations and the LBL's hazardous waste facility permit. DTSC also provides review of other agencies' decisions and approvals to check for consistency with Federal and DTSC guidance.

The State Water Resources Control Board and the Regional Water Quality Control Board work together, acting as the lead oversight body for all information and activities pertaining to groundwater and surface water issues, including contamination and remediation .

The City of Berkeley Emergency and Toxics Management Program is the lead regulatory agency for the technical review of all information and activities relating to underground storage tanks, including closures, equipment decontamination, and cleanup of contaminated soils around the tanks.

The California Department of Health Services, Environmental Management Branch, provides technical review of all material pertaining to radionuclide contamination, including tritium contamination.

Additional agencies involved in environmental activities at LBL include the **East Bay Municipal Utilities District (EBMUD)**, which controls permits for sewer discharges; and the **Bay Area Air Quality Management District (BAAQMD)**, which issues permits for air emission sources.

WHAT IS THE CLEANUP PROCESS ?

LBL's Environmental Restoration Program will go through the four-phase process outlined in Table 1.

LBL is currently in Step 2 of this process, Detailed Investigation. Step 2 includes the study of site geology and hydrology; the construction of groundwater monitoring wells; the regular sampling and analysis of groundwater, surface water, and soil; and the implementation of 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. All of these activities are conducted with the approval of the regulatory agencies. These activities will be described in more detail in the next fact sheet.

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 measures.

WHAT KINDS OF CHEMICALS HAVE BEEN DETECTED AT LBL?

The primary chemicals detected in soil and groundwater at LBL to date are volatile organic compounds (VOCs), including tetrachloroethene, trichloroethene, 1,1-dichloroethene, and cis-1,2-dichloroethene. These common solvents and degreasers have been used at LBL for equipment cleaning. Smaller concentrations of other VOCs (such as benzene, toluene, ethylbenzene, xylene, carbon tetrachloride, and vinyl chloride) also have 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 emission rate is below National Emission Standards for Hazardous Air Pollutants (NESHAPS) permit requirements. The tritiated water falls to the ground near the facility and enters the soil and groundwater. LBL has reduced the quantity of tritiated water released from the stack substantially in recent years and continues to work on ways to reduce emissions further.

These chemicals, including tritium, do not affect the community's drinking water. 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.

IS PUBLIC HEALTH AFFECTED BY THE CHEMICALS FOUND IN SOIL AND GROUNDWATER AT LBL?

LBL integrates environment, safety, and health performance in the conduct of all its operations to ensure employee and public safety and the protection of the environment. As part of the environmental restoration process, LBL will prepare a health risk assessment to evaluate potential health effects from the constituents found in the soil and groundwater.

DOES LBL HAVE EMERGENCY PREPAREDNESS PLANS IN PLACE?

Yes, LBL has its own Master Emergency Plan that addresses potential emergencies on site, and plans are in place to deal with those emergencies. LBL's Emergency Services Group is responsible for the Emergency Preparedness Program. Functions of the Emergency Services Group include the following:

- *Coordinating emergency preparedness functions with state and local jurisdictions, including Berkeley and Oakland.*
- *Developing and updating the LBL Master Emergency Plan.*
- *Developing and updating building emergency plans; planning and conducting emergency drills.*
- *Coordinating volunteer emergency teams, including building emergency teams, auxiliary ambulance and fire teams, the auxiliary medical team, the traffic control team, damage assessment teams, and ham radio operators.*
- *Maintaining the LBL Emergency Command Center.*
- *Managing emergency supplies, including disaster rescue boxes, first aid kits, and emergency food.*
- *Providing emergency preparedness training, including first aid, CPR, fire extinguisher use, emergency team training, and earthquake safety.*

The Master Emergency Plan also addresses natural disasters, such as an earthquake on the Hayward Fault, and secondary events, such as spills that may result from the earthquake. The Master Emergency Plan contains plans for dealing with these secondary events. The Plan also includes information on LBL's emergency response organization, agreements with local jurisdictions, emergency equipment, and emergency drills and training.

- The Master Emergency Plan is supported by implementing procedures and building emergency plans.

In addition to the Emergency Services Group, LBL has its own Fire Services Group that maintains LBL's Fire Department. The LBL Fire Department provides basic fire services, including fire suppression and prevention. LBL has been formally recognized as a participant in the Hills Emergency Forum, the East Bay Hills Vegetation Management Consortium, and the East Bay Fire Chiefs' Consortium. These organizations were established as a direct result of the Oakland Hills Fire of October 1991. The LBL Fire Department plays an active role in these organizations to provide a comprehensive, multi-agency fire protection program for the East Bay Hills area.

A copy of the Master Emergency Plan is available in the LBL information repositories, listed below.

WHERE CAN THE PUBLIC GET MORE INFORMATION ABOUT LBL CLEANUP ACTIVITIES?

All major technical documents and public information pieces such as this fact sheet are kept in the information repository for the LBL site cleanup. The public repository for LBL is located in the Berkeley Public Library, Main Branch, at the reference desk. You may review documents at the repository.

PUBLIC REPOSITORY

Berkeley Public Library	Hours of Operation
2090 Kittredge Street	M-Th 10 am-9 pm
Berkeley, CA 94704	F-Sat 10 am-6 pm
(510) 649-3926	Sun 1 pm-5 pm

LBL EMPLOYEE REPOSITORY

Lawrence Berkeley Laboratory	Hours of Operation
50 Main Library	M-F 8 am-5pm
One Cyclotron Road	
Berkeley, CA 94720	
(510) 486-6307	
Contact: Carol Backhus	

If you have questions about the cleanup, you may write or call Shaun Fennessey at the Community Relations Office at LBL:

Shaun Fennessey
LBL Community Relations Office
Lawrence Berkeley Laboratory
Building 65, Room 106
Berkeley, CA 94720
(510) 486-5122

IN THE NEXT EDITION

- ERP Investigations Update
- Interim Corrective Measures
- Answers to More Community Questions