



## Exhibit E

***Frequently Asked Questions About Mercury*****1. *Why is Mercury Toxic?***

Mercury is a potent neurotoxin, which is most dangerous to children, and pregnant women and their unborn fetuses, though it can cause long lasting health effects to all humans. Children poisoned by mercury show lowered intelligence, impaired hearing, and poor coordination.

**2. *Why is Mercury an Environmental Concern?***

Mercury is one of the twelve toxic pollutants identified by the U.S. EPA as impairing Central San Francisco Bay. Mercury is on the Section 303 (d) list of the Clean Water Act because of fish tissue levels in exceedence of the U.S. Food and Drug Administration's action level of 1000 ppb wet weight.

Once mercury enters the Central San Francisco Bay it can be converted to its most toxic form, methylmercury, by bacteria or chemical reactions. Fish ingest methylmercury through their diet and water passing over their gills. Methylmercury bioaccumulates in the muscle areas of fish at a much higher rate than it is eliminated. It can build up in predator fish, which are at the top of the aquatic food chain, to levels that are tens of thousands to millions of times above the level found in the surrounding water. Eating fish containing high concentrations of mercury accounts for much of the human exposure to this toxic element. Currently, the San Francisco Bay has a fish advisory for mercury.

As a toxic air contaminant, mercury presents a special set of challenges and problems. Because mercury vaporizes readily at ambient temperatures it is perhaps the most widely distributed toxic metal in the world. Federal government scientists have estimated that elemental mercury vapor can remain airborne for up to one year and disperse world wide in that time.

**3. *Can Wastewater Treatment Plants Solve the Mercury Issue?***

Wastewater treatment plants, including East Bay Municipal Utility District (EBMUD), are designed to treat wastewater containing conventional pollutants such as human waste and food waste.

Mercury and other heavy metals are not removed by the treatment for conventional pollutants. As a result, the fate of mercury is to end up in the wastewater discharged to the San Francisco Bay or in the biosolids, which are used for land application and landfill cover. EBMUD has developed a mercury pollution prevention program to help solve the issue.

**4. *Why is Disposing of Mercury in the Garbage a Problem?***

Mercury disposal in solid waste may end up in the landfill leachate, which may eventually contaminate groundwater or surface water.

**5. *Why is Mercury a Concern for UCB Faculty and Staff?***

UCB holds a Wastewater Discharge Permit (Permit), issued by EBMUD, for toxic pollutants, including mercury. Although UCB has historically been within its mercury Permit limit, broken thermometers are the number one source of potential mercury discharges from campus laboratories and shops to the sanitary sewer system.

Currently, the UCB Office of Environment, Health & Safety (EH&S) receives on average 25 calls per year, regarding mercury spills. In 1998 and 1999, UCB spent an annual average of \$35,450 on costs associated with the clean up of broken mercury-containing devices for its College of Chemistry alone.

Due to its physical properties, unidentified elemental mercury may hide under laboratory benches and floor cracks, thus continuously exposing researchers and students to released vapors. Mercury containing devices may also be broken inside a laboratory fume-hood or sink, eventually discharging to the sanitary sewer system.

**6. *How Should a UCB Laboratory or Shop Handle a Mercury Spill?***

Call EH&S at (510) 642-3073 immediately to request emergency assistance. EH&S staff have the appropriate training, cleanup supplies, and air monitoring equipment to respond to mercury spills safely and effectively.

**7. *How Can I Help Reduce UCB Mercury Spills/Sources?***

UCB and EBMUD have partnered to develop a mercury device exchange program. Laboratories may turn in their mercury thermometers throughout March 2005 and receive, through a US EPA grant, free nonmercury replacements. Mercury disposal is also free during that time. Manometers and other mercury-containing devices will be considered if funding is available after the thermometer exchange.

Department Safety Coordinators' support is essential for program success. Encourage laboratories and shops to participate in the mercury device exchange program. Broken mercury thermometers and resulting spill residues cannot be disposed of through the program. Contact EH&S (510) 642-3073 for program details. Funds are limited.