# MERCURY IN THE ENVIRONMENT and WATER SUPPLY

## Sources of Mercury

***Natural***

Natural sources of mercury include volcanoes, forest fires, cannabar (ore) and fossil fuels such as coal and petroleum.

*Active Volcano*

***Anthropogenic***

Levels of mercury in the environment are increasing due to discharge from hydroelectric, mining, pulp, and paper industries. Incineration of municipal and medical waste and emissions from coal-using power plants also contribute to high levels of mercury.

Mercury released from ongoing human activity in the U.S. can be separated into four broad categories. The first category is “area sources”. Landfills, dental preparations, and laboratory use are defined as area sources. The second category is combustion processes. These include coal-fired power generation, medical waste incinerators, and municipal waste combustors. The third category is the manufacture of metals, alkali, and cement. Other industrial processes fall into the fourth category.

*Coal Burning Power Plant*

In the past, mining was a substantial source of mercury in some areas. For example, the hydraulic placer-gold mines of the Sierra Nevadas released several thousand tons of mercury to the environment from the 1860s to the early 1900s. The U.S Geological Survey (USGS) believes that high levels of mercury in fish, amphibians, and invertebrates downstream of hydraulic mines are a result of historic mercury use.

Power plants are now the largest anthropogenic source of Mercury in the United States. To address this concern, new legislation has been proposed to cut emissions of pollutants from power plants. However, different parties disagree on how mercury should be regulated. In December 2004, the Environmental Protection Agency will reach its deadline for setting maximum achievable control technology (MACT) provisions for mercury under the Clean Air Act.

***Mercury Contamination***

Mercury in the air is deposited into the water. Bacteria in lake, stream, and ocean sediments then convert elemental mercury into organic mercury compounds such as methylmercury.

Mercury is able to travel long distances in the air. There is a global reservoir of airborne mercury circulating worldwide at any one time. Both natural and anthropogenic emissions contribute to the global mercury reservoir. It is estimated that the annual global input of mercury into the reservoir is 4,900 tons.

In 1995, it was estimated that forty percent (32 metric tons (t)) of mercury deposited form the air onto U.S. water and soil came from the global mercury reservoir. The other sixty percent came from anthropogenic sources in the U.S. There is uncertainty at this time as to how long some forms of mercury persist in the atmosphere.

The "recycling" of anthropogenic mercury also raises levels of mercury in the environment. Recycling takes places when mercury in water volatizes and contributes to the increase of atmospheric mercury concentrations.

**Click here to read more.**

**Reference website: http://people.uwec.edu/piercech/Hg/mercury_water/sources.htm**