

Arsenic Fact Sheet

Arsenic is a naturally occurring substance. In its solid state arsenic appears as a silver-gray, brittle semi-metal that tarnishes in the air. It is about the 52nd most common chemical element on the earth. The Washington State Department of Ecology and the United States Geological Survey have determined that the natural background level of arsenic in Puget Sound soil is 7 ppm (parts per million).

Human Uses for Arsenic

Arsenic has been known since ancient times and has been used widely for many years, even though it is an extremely poisonous substance. A potential source of arsenic in our environment is as a byproduct of copper smelting. During copper processing, arsenic passes from the solid state into the gaseous state and leaves the smelter through the smokestacks in the form of toxic dusts.

Tacoma Smelter Plume (TSP)

In western Washington a source of arsenic contamination was the Asarco copper smelting plant, which operated from about 1890 to 1986. It was located in Ruston, near Tacoma. The area immediately surrounding former plant is highly contaminated with both lead and arsenic from the smelter. In addition, arsenic and lead from smokestack releases were likely spread over wide parts of Kitsap County and surrounding regions, where these heavy metals settled into the soils. The Kitsap County Health District and the state Department of Ecology are working together to determine the extent of arsenic and lead contamination in Kitsap County.

Arsenic and Your Health

- Acute (short-term) arsenic poisoning can cause nausea, vomiting, diarrhea, weakness, loss of appetite, shaking, cough and headache. Chronic (long term) exposure can lead to a variety of ill effects including skin pigmentation, numbness, cardiovascular disease, diabetes, and vascular disease. Arsenic is also known to cause a variety of cancers including skin cancer (non-melanoma type), kidney, bladder, lung, prostate and liver cancer.
- Doctors can prescribe arsenic tests that analyze arsenic levels in urine, blood, and hair. Tests can either test for the different types of arsenic or just the “total arsenic” in the body. Arsenic tests can be difficult to interpret because health experts are not sure what “normal” levels of arsenic in the body are. Furthermore, different people experience arsenic in different ways – some people are more susceptible to arsenic than others. Since we do not know who is likely to be most sensitive to arsenic, it is prudent for anyone who thinks they might be exposed to arsenic in the soil to follow the guidelines for reducing exposure to arsenic.

For more information

If you have further questions please contact the Kitsap County Health District at 360-337-5245. Ecology’s Northwest Regional Office can be reached at 425-649-7000.

Ecology’s TSP website: www.ecy.wa.gov/programs/tcp/sites/tacoma_smelter/ts_hp.htm