

Frequently Asked Questions - Toxic Air Contaminants

In the past two decades public concern about air pollution in the Bay Area has expanded from what is generally labeled "smog" to include toxic air pollutants. This concern has gained impetus as a result of industrial mishaps which have caused the sudden release of toxic chemicals to the atmosphere, by the discovery of unsafe toxic dump sites and by accidents on our highways and railroads involving trucks and trains transporting hazardous substances. Emergency response teams, hazardous materials clean-up teams and superfund efforts to clean up old hazardous dump sites are headlined in the newspapers almost daily, and as a result, a whole new environmental effort has been mounted in dealing with such incidents

Are Toxic Air Contaminants Regulated?

Several regulatory programs exist to reduce the risk of exposure to toxic air contaminants that are emitted daily by industrial and chemical manufacturing processes, commercial activities, refinery operations, gasoline marketing and motor vehicles.

- Federal Hazardous Pollutant Emission Standards The federal Environmental Protection Agency (EPA) is required to develop national emission standards for hazardous air pollutants (NESHAPS), which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by EPA on suspected hazardous pollutants prior to regulatory development
- California Air Toxic Control Measures The state of California's regulatory efforts are embodied in the Tanner Bill (effective 1984), which defines a process for the identification and control of toxic air contaminants. The California Air Resources Board (ARB) identifies the most important toxic pollutants by considering risk of harm to public health, amount or potential amount of emissions, manner of usage of the substance, its persistence in the atmosphere, and its concentration in the outdoor air. The California Office of Environmental Health Hazard Assessment prepares health assessment documents that outline the toxicity of compounds. After a pollutant is listed as a toxic air contaminant, control measures are developed by the ARB and local air districts.
- Toxic Emission Inventory Another important piece of legislation is the Air Toxics "Hot Spots" Act (AB2588). This bill was enacted in 1987 with the objective of collecting information concerning industrial emissions of toxic air contaminants and making the information available to the public. One of the goals is the identification of "hot spot" areas having high levels of risk from toxic air contaminants.

Affected facilities are required to submit detailed process and emission data for over 300 chemicals. Air districts throughout the state are required to rank the facilities as either high, medium or low priority . High-priority facilities (which do not necessarily mean high-risk facilities) are required to submit detailed health risk assessments.

The most recent Toxics Emission Inventory for the Bay Area is available at a cost of \$25.00. If you would like a copy, please send a check with your request to BAAQMD, 939 Ellis Street, San Francisco, CA 94109. The inventory is also available on diskette.

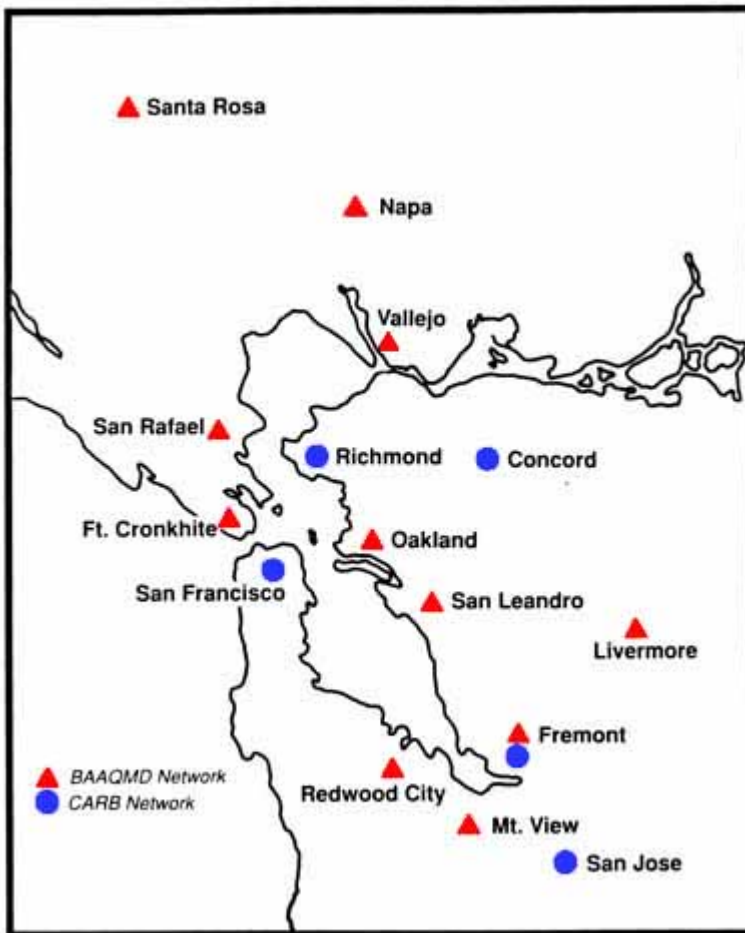
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Are Air Toxics Monitored?

Because of the growing interest in long-term population exposures to toxic compounds, the District implemented various monitoring programs in 1985. The data gathered are used directly for population risk assessments and establishment of community trend studies. Over time, the monitoring program has been a measure of the effectiveness of control strategies for toxic air contaminant reductions.

The ARB established and equipped five air monitoring locations within the geographic jurisdiction of the District in early 1985. These sites are operated by Air District personnel and analyses of the data collected are performed by ARB. Sampling is performed over a 24-hour period with a twice-monthly sampling frequency.

Air Toxics Monitoring Network



The Air District's toxics network initially began with five sites (in addition to the ARB site) but has now expanded to eleven sites. A background site at Fort Cronkhite on the Pacific coast yields valuable baseline data to use for comparison with values obtained at other sampling stations. This network of 16 stations is thought to constitute the largest toxic air contaminant network on a systemized schedule in the nation. The compounds sampled include benzene; 1,1,1 trichloroethane (TCA); trichloroethylene (TCE); chloroform(TCM); 1,2 dichloroethane (EDC); 1,2 dibromoethane (EDB); methylene dichloride(DCM); carbon tetrachloride, and tetrachloroethylene (perc); vinyl chloride and toluene (while not considered a toxic air contaminant, toluene was chosen to better assess the origin of benzene emissions). In addition,

sampling for the heavy metals lead, nickel, manganese and total chromium is carried out at the five ARB sites in Fremont, Richmond, Concord, San Francisco and San Jose.

Are Air Toxics Considered in the Review of Permits for New Sources?

There are approximately 26,000 sources currently operating under Air District permits. All new sources and existing sources wishing to make modifications to their operations are subject to a risk screening process. A written screening assessment is prepared for approximately 10 to 15% of these applications. Sources automatically requiring risk

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assessments are hazardous waste incinerators, commercial hazardous waste treatment facilities, resource recovery operations, and power generation facilities using solid fuels

The District has both a risk screening procedure and a risk management procedure for permit applications involving emissions of potentially toxic compounds. Using these procedures, staff works to protect public health in a consistent and clear manner. Projects with emissions with having no significant health impact are not unduly delayed. Projects with a potential to have impacts on public health are readily identified and evaluated further.

What Are The Air District's Risk Assessment Procedures?

As part of its program to control toxic air contaminant emissions, the Air District has established procedures for estimating the risk associated with exposure. These risk assessment procedures are based on methods used throughout government, research facilities, and industry. The methods used are conservative, meaning that the real risks from the source may be lower than the calculations, but it is unlikely they will be higher.

In the first step of a two-step process, the Air District estimates how much of a contaminant would be found in the air at a specific location. The estimate depends upon the type of source (refinery, dry cleaner, incinerator, etc.), its rate of production and its location. The second step involves determining if the estimated amount of contaminant is hazardous to those exposed to it. This determination includes an evaluation of both carcinogenicity (tendency to cause cancer) and non-cancer health effects. Chemical toxicity is based on the results of animal studies and, in some instances, on the results of human exposure.

What Are The Air District's Risk Management Procedures?

After the level of risk from a new project has been determined, a decision must be made as to the significance of this risk level. If a new source has a cancer risk of one in a million or less over a 70-year-lifetime exposure period, and will not result in non-cancer health effects, it is considered to be a non-significant risk and no further review of all health impacts is required. If a project has a risk greater than one in a million, it must be further evaluated in order to determine acceptability. Factors that affect acceptability include the presence of controls on the rate of emissions, the location of the site in relation to residential areas and schools, and contaminants reductions in other media such as water.

In general, projects with risks greater than one in a million, but less than 10 in a million, are approved if other determining factors are acceptable. In general, projects with risks greater than 10 in a million are not approved. Non-approved projects may be re-evaluated if emissions are reduced thus reducing their risks.