



Air Toxics "Hot Spots" Program Fact Sheet

What is the Air Toxics "Hot Spots" Program?

The Air Toxics "Hot Spots" Information and Assessment Act is a state law (also referred to as Assembly Bill 2588, adopted into California Health & Safety Code Sections 44300-44394) requiring facilities located in San Diego County to report emissions of toxic air contaminants to the San Diego County Air Pollution Control District (APCD). The program is designed to quantify emissions of toxic air contaminants, the location of these emissions relative to the residences and businesses surrounding the facility, and the resulting potential public health risk. Based on the potential health risk, the APCD requires facilities to notify communities that might be impacted by a potential health risk above the thresholds established by APCD Rule 1210¹ and if the health risk exceeds certain other thresholds, to implement a risk reduction plan in accordance with APCD Rule 1210¹.

What is a toxic air contaminant?

Toxic air contaminants are chemicals in gases, liquids, or particles form which are emitted into the atmosphere that upon inhalation, digestion or skin contact may cause adverse health effects. Adverse health effects can range from relatively mild temporary conditions, such as minor eye or throat irritation, shortness of breath or headaches, to permanent and serious conditions such as cancer, birth defects, or damage to lungs, nerves, the liver, the heart, or other organs. For the purposes of the Air Toxics "Hot Spots" program, toxic air contaminants include approximately 800 listed compounds that have been determined to have potential adverse health impacts. A list of these compounds is included in the tables at the end of APCD Rule 1210¹.

What is a health risk assessment?

A health risk assessment estimates the risk of adverse health effects (cancer and noncancer) from exposures to emissions of toxic air contaminants into the air². The estimated health risks are based on APCD approved emission calculations, state approved computer models, and health risk calculations based on a number of assumptions, some of which are health protective assumptions.

In accordance with the California Health and Safety Code, Section 44362, health risk assessments are to be conducted by operators of stationary sources, within 180 days from a APCD request, and approved by the APCD, in consultation with the California state Office of Environmental Health Hazard Assessment (OEHHA) within one year from the submittal of the Health Risk Assessment. OEHHA is

¹https://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Toxic_Air_Cotaminants/APCD_R12_10.pdf

² [Guide to Health Risk Assessment \(ca.gov\)](#)

the scientific branch of the California Environmental Protection Agency (CalEPA) which evaluates the effects of toxic compounds, and develops health protective exposure levels and health risk assessment guidelines³.

In March of 2015, OEHHA enhanced its health risk assessment guidelines to reflect scientific advances in the field of toxic exposures, health effects, and risk assessment, along with explicit consideration of younger population, including infants and children below the age of 2. The new guidelines could result in a facility's calculated risk estimate to be up to 3 times higher than previously, even if there has been no increase in that facility's operations or emissions. Therefore this change has resulted in additional public notifications and risk reduction plans to further reduce toxic air contaminants and further protect public health. .

How accurate is the health risk assessment?

The OEHHA guidelines states⁴ *“OEHHA has striven to use the best science available in developing these risk assessment guidelines. However, there is a great deal of uncertainty associated with the process of risk assessment. The uncertainty arises from lack of data in many areas necessitating the use of assumptions. The assumptions used in these guidelines are designed to err on the side of health protection in order to avoid underestimation of risk to the public. Sources of uncertainty, which may overestimate or underestimate risk, include: 1) extrapolation of toxicity data in animals to humans, 2) uncertainty in the estimation of emissions, 3) uncertainty in the air dispersion models, and 4) uncertainty in the exposure estimates.”*. Additional information is available at <https://oehha.ca.gov/media/downloads/risk-assessment/document/hrsguide2001.pdf>

How are risk assessment results reported?

Risk assessment results are reported as "excess lifetime cancer risk" and/or as "non-cancer hazard index."

- **Excess lifetime cancer risk** is the maximum estimated increased risk of contracting cancer (above normal background levels) caused by chronic exposure to a chemical suspected of being a human or animal carcinogen. Excess lifetime cancer risk is expressed as the probability of a resident or worker contracting cancer. This estimate assumes that a person resides at the location of maximum residential impact 24 hours per day, 365 days per year with 30 years of exposure, or a person works at the location of maximum occupational impact 8 hours per day, 250 days per year, with 25 years of exposure.

To help put these risks into perspective, *in accordance with the California Environmental Protection Agency, “cancer risks presented in risk assessments are often compared to the overall risk of cancer in the general U.S. population (about 250,000 cases for every one million people) or to the risk posed by all harmful chemicals in a particular medium, such as the air. The cancer risk from breathing current levels of pollutants in California’s ambient air over a 70-year lifetime is estimated to be 760 in one million”*⁵

- **Non-cancer health hazard index** is calculated by dividing the estimated level of exposure to chemicals emitted from a facility to the level of exposure that is not expected to cause any adverse

³ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>

⁴ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>, page 1-5

⁵ [Guide to Health Risk Assessment \(ca.gov\)](https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf)

health effects. If the hazard index is less than or equal to one, then the estimated level of exposure is not likely to result in adverse health effects for anyone, including sensitive individuals such as children and the elderly. A hazard index above one indicates that there may be greater potential for adverse health impacts from exposure to the toxic air contaminants of concern⁶. Under the Hot Spots program, a hazard index is calculated for both acute (short-term) and chronic (long-term) exposures to air toxic contaminants in facility emissions.

- **Cancer burden** estimates the number of potential excess cancer cases within the population that would be exposed to the emissions for a lifetime (70 years). The cancer burden is calculated on the basis of lifetime (70-year) risks (whereas individual cancer risk is based on 30-year residential exposure).⁷

What is being done to reduce toxic air contaminant emissions?

In May 2019, the San Diego County Air Pollution Control Board directed APCD staff to evaluate the current regulatory threshold to implement cancer risk reduction requirements (100 in one million) under APCD Rule 1210⁸ and implement a regulatory process to amend the rule to better protect public health. This regulatory process involves industry and community partners to obtain input on and analyze reducing the threshold for risk reduction requirements. The APCD is expected to return to the Board in October of 2021 with an update and a proposal to amend Rule 1210⁹.

For more information regarding the Hot Spots Program please visit the APCD website at shorturl.at/tKQ35¹⁰

⁶ [February 2015, Air Toxics Hot Spots Program Risk Assessment \(ca.gov\)](#)

⁷ <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>

⁸ <https://bosagenda.sandiegocounty.gov/cob/cosd/cob/doc?id=0901127e80a957d9>

⁹ [doc \(sandiegocounty.gov\)](#)

¹⁰ https://www.sdapcd.org/content/sdc/apcd/en/engineering/Permits/Engineering_Emissions_Inventory/engineering_phase2_hotspots.html