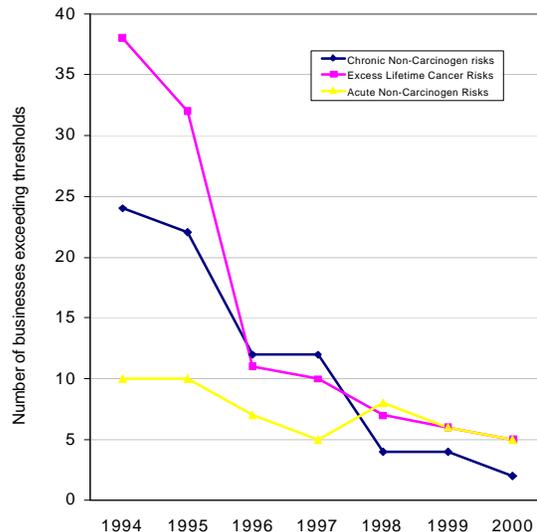


# SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT AIR TOXICS “HOT SPOTS” PROGRAM 2001 ANNUAL REPORT

## INTRODUCTION

The Air Toxics "Hot Spots" Information and Assessment Act requires businesses and industries throughout the state to: 1) quantify and report their emissions of listed air toxics; 2) assess the possible health risks from their emissions; 3) notify members of the public who are exposed to significant risks attributable to their emissions; and, 4) take steps to reduce this risk. The California Health and Safety Code (HSC, Section 44363) requires air pollution control districts to prepare and publish an annual report describing the status of their Air Toxics "Hot Spots" Program. This annual report summarizes the status of the Air Toxics "Hot Spots" Program in Santa Barbara County as of December 31, 2001, and is being presented to the Santa Barbara County APCD Board of Directors in a public meeting on February 21, 2002. Consistent with HSC requirements, this report is also being provided to Santa Barbara County Environmental Health Services officials. It is available to the public, and may also be downloaded from the APCD's website ([www.sbcapcd.org](http://www.sbcapcd.org)).

Implementation of this program has resulted in significant reductions in the amount of air toxics emitted in Santa Barbara County. In 1991, 51 sources subject to the Air Toxics “Hot Spots” Program exceeded the Board-approved *significant health risk* thresholds. Currently, only six sources exceed the *significant health risk* thresholds, an 88% reduction. The graph below shows this reduction. Table 1 (p. 2) summarizes the exceedances of the cancer and non-cancer risk thresholds by the six sources.



In 2000 and 2001, the emphasis of the “Hot Spots” Program began to shift from large and medium size sources to small (“industry-wide”) sources. Risk assessments of gas stations were completed in 2000 and, after analysis, showed that none of the stations in Santa Barbara County present *significant health risk*. In 2002, risk assessments for auto body

shops will be completed. Risk assessments for dry cleaners and diesel-fueled engines will be completed after risk assessment guidelines have been developed, public workshops conducted and the guidelines for each are approved.

The APCD’s Air Toxics web pages have provided the public with easy access to detailed information about the “Hot Spots” Program as well as information about health risks associated with chemicals emitted by neighboring businesses. The web pages for the significant risk facilities are available to the public under the Air Toxics link of our website ([www.sbcapcd.org/biz/toxics.htm](http://www.sbcapcd.org/biz/toxics.htm)).

**HEALTH RISK**

As used in this report, the term *health risk* addresses the likelihood that exposure to a given toxic air contaminant under a given set of conditions will result in an adverse health effect. Health risk is affected by several factors, such as: the amount, toxicity, and concentration of the contaminant; the meteorological conditions; the distance from emission sources to people; the distance between emission sources; the age, health, and lifestyle of the people living or working at a location; and, the length of exposure to the toxic air contaminant.

Health effects are divided into cancer and non-cancer risks. “Cancer risk” refers to the increased chance of contracting cancer as a result of an exposure, and is expressed as a probability: chances-in-a-million. The values expressed for cancer risk do not predict actual cases of cancer that will result from exposure to toxic air contaminants. Rather, they state a possible risk of contracting cancer over and above the background level.

**Table 1: Risk Scores for Businesses Exceeding Significant Risk Thresholds**

<b><u>Facility</u></b>	<b><u>Cancer Risk<sup>1</sup></u></b>	<b><u>Non-Cancer Risk<sup>2</sup></u></b>		<b><u>HRA Date<sup>3</sup></u></b>
		<b><u>Chronic</u></b>	<b><u>Acute</u></b>	
Venoco Carpinteria Gas Plant	<b>14.00</b>	<b>8.00</b>	0.90	04/25/97
Venoco Ellwood O&G Plant	<b>76.09</b>	<b>1.97</b>	<b>21.96</b>	03/23/00
Vintage Zaca Lease	<b>22.58</b>	0.33	<b>4.30</b>	03/23/00
Greka Energy Cat Cyn Lease	<b>12.00</b>	0.27	<b>22.93</b>	06/08/00
Greka Energy Dominion/UCB	2.00	0.05	<b>4.30</b>	06/08/00
Greka Energy Sa. Maria Refinery	<b>20.49</b>	0.04	<b>18.22</b>	06/08/00

**Footnotes:**

- 1) Cancer risk is measured in units of excess cases per million people. Any number greater than or equal to 10 represents *significant health risk* (shown in bold font).
- 2) Non-cancer risk is measured as a Hazard Index: the modeled concentration of pollutant/acceptable level of pollutant concentration. Any number greater than or equal to 1 represents *significant health risk* (shown in bold font).
- 3) Date of Health Risk Assessment by which notification and/or risk reduction are required.

For non-cancer health effects, risk is characterized by a “hazard index” (HI), which is obtained by dividing the predicted concentration of a toxic air contaminant by a reference exposure level (REL) for that pollutant that has been determined by health professionals. RELs are used as indicators of the potential adverse effects of chemicals. A REL is the concentration at or below which no adverse health effects are anticipated for specific exposure duration. Thus, the HI is a measure of the exposure relative to a level of safety and is appropriately protective of public health.

### **UPDATE PLANS AND REPORTS**

Of the approximately 600 businesses initially subject to the “Hot Spots” Program, 10 percent emitted more than 10 tons per year of a single criteria pollutant<sup>1</sup> and submitted air toxic emission inventory plans and reports to the APCD. From these reports, Health Risk Assessments (HRAs) were conducted for those sources that were prioritized as a high priority source. Those sources exceeding one or more of the *significant health risk* thresholds are required to update their emission inventory plans and reports every four years. These plans and reports take into consideration changes in measurement techniques, changes in equipment and process rates, revisions to the list of toxic compounds that must be quantified, and revisions to the toxicity of compounds. Non-significant risk sources are required to submit an emission inventory update summary form every four years. The remaining sources are categorized as small businesses and the APCD compiles their toxic inventories.

In 2001, one plan, one report and two update reports were submitted to the APCD for review. The review of these facility plans and reports and subsequent updated HRA, if required, will be completed by the end of 2002. An additional five update plan documents are due to be submitted by August 1, 2002 and will also be completed by the end of the year.

In May of 2002, 32 update summary forms from non-significant risk sources are due to be submitted for APCD review. If approved, a summary form fulfills a source’s quadrennial update requirements. If a summary form is not approved, the source is required to submit an emission inventory plan and report to the APCD.

### **HEALTH RISK ASSESSMENTS**

No health risk assessments were performed in 2001 for sources subject to the Air Toxics “Hot Spots” Program.

### **PUBLIC NOTIFICATION**

Public notification is a biennial requirement for all *significant risk* facilities. In 1999, 13 businesses were considered *significant risk* sources, and notified the affected public of the toxic risks created by their operations. Since that time, seven sources have dropped out of the category. The six remaining *significant risk* sources identified in Table 1 are now due to notify the affected public of the toxic risks to which they have been exposed. These sources are located in Santa Barbara, Santa Maria, Lompoc, Goleta and Carpinteria. The purpose of the notification letter is to explain the cancer and/or non-cancer health risks that may be attributable to each facility’s emissions. As a result of the comments and interest received from the notifications, the APCD will determine whether or not a public meeting is necessary for each source.

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<sup>1</sup> Ten tons per year is the threshold that determines if sources are subject to the requirement to submit emission inventory plans and reports.

## **RISK REDUCTION**

On September 17, 1998, the APCD Board of Directors adopted risk reduction thresholds. These risk reduction thresholds mirror the public notification thresholds ( $\geq 10$  per million for cancer risk and a Hazard Index of  $\geq 1.0$  for non-cancer risk). If a source's health risk assessment results indicate a *significant health risk*, the source operator is required to conduct a risk reduction audit and develop a plan to implement risk reduction measures. Implementation of these measures must reduce the risks, shown in bold font in Table 1, below the *significance health risk* thresholds within five years of the date the plan is submitted to the APCD. Listed below are the six businesses required to provide risk reduction plans (RRAP) and the status of each.

- Venoco – Carpinteria Facility (RRAP approved 10/06/00)
- Venoco – Ellwood Oil & Gas Facility (RRAP revised 10/11/01; under review with APCD)
- Vintage Petroleum – Zaca Lease (RRAP revised 6/8/01; under review with APCD)
- Greka Energy – Cat Canyon Lease (RRAP incomplete; response to APCD past due as of 12/27/00. Violation Notice issued.)
- Greka Energy – UCB/Dominion Leases (RRAP past due as of 1/02/02. Violation Notice issued.)
- Greka Energy – Santa Maria Refinery (RRAP past due as of 1/02/02. Violation Notice issued.)

## **INDUSTRY-WIDE SOURCES**

Of the approximately 600 businesses subject to the Hot Spots Program, over 80% are in the small business or “industry-wide” category. Each of these businesses emits less than 10 tons per year of criteria pollutants. For these sources, the APCD compiles their air toxics emissions inventory based on responses to surveys completed and submitted by the operator. Because risk assessments are used as a ruler to compare one source with another and to prioritize concerns, the APCD performs the health risk assessments for small businesses to provide consistency and fairness. Risk assessment methodologies have been developed by the California Air Pollution Control Officers Association (CAPCOA) in consultation with the state Office of Environmental Health Hazard Assessment (OEHHA) for three types of “industry-wide” businesses: gas stations, auto body shops and dry cleaners. Risk assessment guidelines for gas stations and auto body shops have been developed and undergone industry and public review. Draft guidelines for dry cleaners have been developed but have not gone through industry and public review.

The APCD collected emission inventory information for gas stations and applied the risk assessment guidelines for gas stations using 1998 inventory data. Benzene is the pollutant of greatest concern with gas stations' toxic emissions and risk assessments. Five of the 230 gas stations reviewed exceeded the *significant health risk* threshold for cancer of 10 in a million using the approved risk assessment guidelines for gas stations. Because these guidelines are intended to provide a generic assessment, the APCD obtained detailed site-specific data from

each of the five stations and ran refined risk assessments. None of the five stations exceeded the *significant health risk* threshold using the more precise information.

The APCD will apply the approved risk assessment guidelines to auto body shops in 2002 using 2001 inventory data. Based on some initial analysis, we anticipate that most, if not all, of the auto body shops will be below the *significant health risk* threshold. If a body shop exceeds the *significant health risk* threshold, a refined risk assessment will be conducted using site-specific data. If this assessment still indicates a significant risk, the facility will be required to notify the public and identify and implement measures to reduce that risk.

Risk assessments for dry cleaners will be initiated once the risk assessment guidelines for dry cleaners are final and public workshops have been conducted. The dates for these workshops (one to be held in Sacramento and the other in Southern California) are still pending. Using the draft guidelines, many of the large dry cleaners using perchloroethylene may exceed the *significant health risk* threshold for cancer and refined risk assessments will be required.

### **AIR TOXICS WEB PAGE**

The Air Toxics web pages include a “Hot Spots” Program overview as well as an update regarding the status of the program. In 2000, APCD staff added information for *significant health risk* facilities to the web site. The risk information presented on these web pages is contained in the 2001 Annual Report. Additional information is presented that explains how risks are calculated, and links are provided to allow the public access to information about particular pollutants from each source. These web pages have been developed with the intent of enhancing the public’s right to know about the chemicals emitted by sources in their areas, and associated health risks from possible exposure. Staff will update these pages periodically to reflect revised health risk assessments resulting from updated emission inventories submitted by the businesses. These web pages for these sources are available to the public on our website ([www.sbcapcd.org/biz/toxsign.htm](http://www.sbcapcd.org/biz/toxsign.htm)).

### **DIESEL PARTICULATE EXHAUST**

In August, 1998, after nine years of study, the California Air Resources Board (ARB) formally identified the particulate matter in diesel exhaust as a Toxic Air Contaminant. Since that time, considerable effort involving state and local air pollution agencies and affected stakeholders has been undertaken to evaluate methods and design programs to control diesel particulate pollution. One result of this effort was the ARB’s approval of the Permitting Guidelines for New Stationary Diesel Fueled Engines on September 28, 2000. Additionally, ARB and district staff and other stakeholders have been working together to identify potential requirements for ARB’s proposed Air Toxic Control Measures for new and existing diesel engines.

The OEHHA-approved unit risk factor for diesel particulate matter is approximately 10 times that of benzene, the primary toxic pollutant of gasoline, and 50 times that of perchloroethylene, commonly used in dry cleaning. Because of this high unit risk factor, even small diesel-fueled engines and large stand-by emergency engines can pose a *significant health risk* if operated full time near people exposed to the exhaust. The programs being evaluated and drafted by the ARB will likely require risk assessments of those diesel-fueled engines under the APCD’s jurisdiction. Because diesel engines are widely used, both for prime power applications and for back-up sources of power, the requirement to assess risk

from such operations is likely to create substantial additional workload in the future. New technologies, such as ultra-low sulfur diesel fuel coupled with diesel particulate filters, may substantially reduce the risks associated with diesel particulates. This evaluation work is ongoing with the ARB and other sources and shows considerable promise.

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