

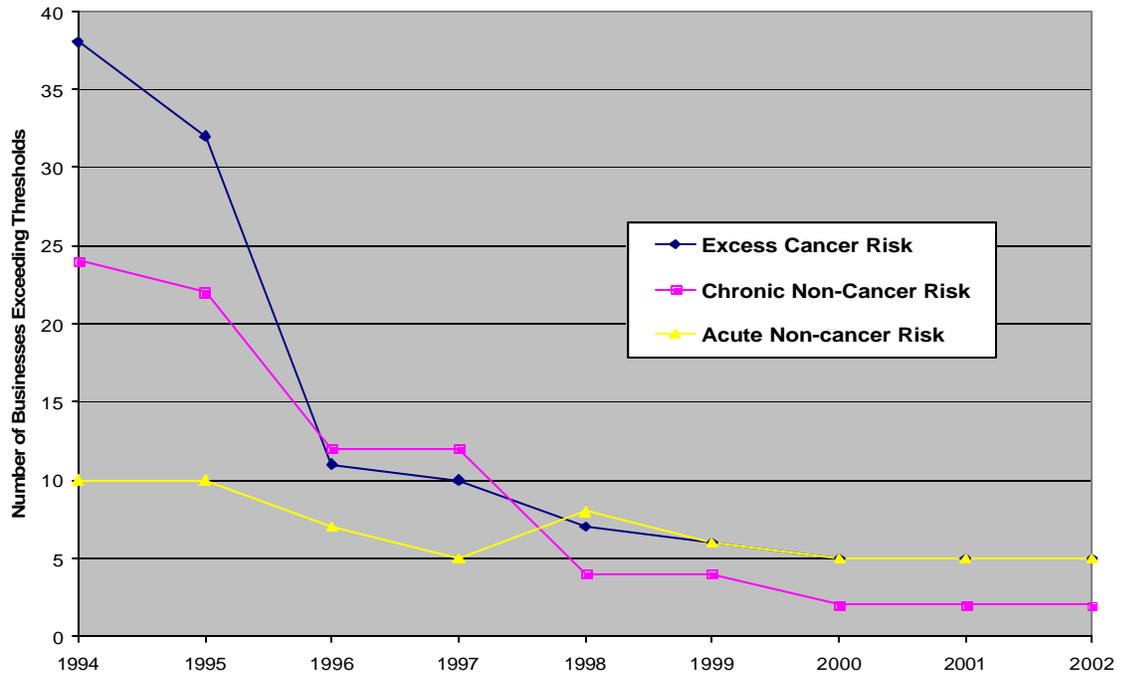
SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT AIR TOXICS "HOT SPOTS" PROGRAM 2002 ANNUAL REPORT

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, 2002, and is being presented to the Santa Barbara County APCD Board of Directors in a public meeting on March 20, 2003. 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).

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.

Status of Significant Risk Facilities



From 2000 to 2002, 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 2003, we anticipate that 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 <at www.sbcapcd.org/biz/airtoxprt.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

<u>Facility</u>	<u>Cancer Risk¹</u>	<u>Non-Cancer Risk²</u>		<u>HRA Date³</u>
		<u>Chronic</u>	<u>Acute</u>	
Venoco Carpinteria Gas Plant 04/25/97	14.00	8.00	0.90	
Venoco Ellwood O&G Plant	53.49⁴	1.97	21.96	03/23/00
Greka Energy Zaca Lease	22.58	0.33	4.30	03/23/00
Greka Energy Cat Cyn Lease	12.00	0.27	22.93	06/08/00

Greka Energy Dominion/UCB	2.00	0.05	4.30	
06/08/00				
Greka Energy Sa. Maria Refinery	20.49	0.04	18.22	06/08/00

<u>Footnotes:</u>				
1) Cancer risk is measured in units of excess cases per million people. Any number greater than or equal to 10 represents <i>significant health risk</i> (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 <i>significant health risk</i> (shown in bold font).				
3) Date of Health Risk Assessment by which notification and/or risk reduction are required.				
4) The Ellwood Facility Cancer Risk is currently under review by Venoco and the APCD; the risk shown here represents the APCD's latest modeled estimate, based on Venoco-submitted information.				

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 pollutant¹ 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 two 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 (Quadrennial Updates). The remaining sources are categorized as small businesses and the APCD compiles their toxic inventories.

In 2002, two plans, one report and 25 quadrennial update summary reports were submitted to the APCD for 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. We anticipate that

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

the review of these plans, reports, and summary forms, as well as any updated HRAs, if required, will be completed by the end of 2003.

HEALTH RISK ASSESSMENTS

No health risk assessments were performed in 2002 for sources as part of the Air Toxics "Hot Spots" Program. However, APCD staff performed a detailed HRA for the permitting of the Reliant Ellwood Energy facility in western Goleta, as part of that facility's application to increase operating hours. The findings of the HRA were presented in the permit and were discussed at a public meeting attended by concerned citizens. The results of the HRA indicated that the plant's increase in operating hours (from 200 per year maximum to 400 per year maximum) did not present significant cancer or non-cancer health risks to the community.

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, at this writing, going through the process 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.

RISK REDUCTION

On September 17, 1998, the APCD Board of Directors adopted risk reduction thresholds. These risk reduction thresholds mirror the public notification thresholds (≥ 10 per million for cancer risk and a Hazard Index of ≥ 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** (Cancer and non-cancer health risks under review based on proposed emission reduction and recalculation measures; effect on facility's risk and proposed RRAP are under review.)
- **Greka Energy - Zaca Lease** (RRAP revised 6/8/01; proposed reduction measures and recalculation of risk are under review by APCD.)

- **Greka Energy – Cat Canyon Lease** (In spite of several time extensions from APCD, Greka had failed to submit timely RRAP. APCD issued violation notice pursuant to Health and Safety Code. Greka submitted a RRAP, which the APCD remanded as incomplete; Greka has revised the RRAP and the document is now under review with APCD.)
- **Greka Energy – UCB/Dominion Leases** (In spite of several time extensions from APCD, Greka had failed to submit timely RRAP. APCD issued violation notice pursuant to Health and Safety Code. Greka submitted a RRAP, which the APCD remanded as incomplete; Greka has revised the RRAP and the document is now under review with APCD.)
- **Greka Energy – Santa Maria Refinery** (In spite of several time extensions from APCD, Greka had failed to submit timely RRAP. APCD issued violation notice pursuant to Health and Safety Code. Greka submitted a RRAP, which the APCD remanded as incomplete; Greka has revised the RRAP and the document is now under review with APCD.)

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 “industry-wide” 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 only recently gone through review; these will be considered for approval by CAPCOA in the near future.

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 now uses this two-step process to review permit applications for new and modified gas stations to ensure that public risk is maintained below Board-approved significant risk thresholds.

The APCD anticipates applying the approved risk assessment guidelines to auto body shops in 2003 using 2002 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. 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. Interestingly, the South Coast Air Quality Management District recently approved a landmark rule that will phase out the use of perchloroethylene, the toxic air contaminant that creates most risk from dry cleaners, by the year 2017. Other cleaning methodologies and compounds are available now, and more are becoming available, to allow dry cleaners to conform to this new regulatory approach to the industry.

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 2002 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).

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. These measures are scheduled to be heard by the ARB’s governing body in July, 2003.

The OEHHA-approved cancer 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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