



Santa Barbara County Air Pollution Control District

To the Resident or Business/Property Owner:

The Santa Barbara County Air Pollution Control District (APCD) has prepared an air toxics risk assessment describing possible health effects from exposure to toxic air pollution emitted by **Greka's Zaca Field Oil and Gas Leases** (Zaca Field), which is near your business, residence or property. The Zaca Field is located approximately 22 miles south and east of Santa Maria. Acrolein and other pollutants are emitted to the atmosphere during the normal course of its operations. The State of California considers acrolein to be a toxic air pollutant, as exposure to acrolein may increase your risk of respiratory and eye irritation or cause other adverse health effects. You are receiving this notice because state law requires that Greka notify its neighbors of the possible health risks that result from routine facility operations. The Zaca Field's "significant risk footprint" is attached for your review. Based on this calculated risk, the APCD required Greka to reduce the risk to less than significant levels. Under APCD oversight, this was done and the Zaca Field no longer presents a significant air toxics risk to you or your neighbors.

CALCULATING RISK

We calculated the air toxic risk for the Zaca Field using a computer model that evaluates emissions information provided by the facility operator. Actual measurements of toxic emissions have not been made beyond the facility's boundaries, nor have there been any health surveys of actual illnesses attributable to the facility's emissions. The results of the computer modeling indicate that past exposure to acrolein emissions from gas-fired internal combustion engines at the Zaca Field may have increased your risk of respiratory and eye irritation. This risk is measured by a hazard index, which is a ratio of the calculated emissions divided by the level of emissions that is conservatively considered to protect public health. The acute (maximum 1-hour exposure) hazard index calculated for the Zaca Field was 3.8 times higher at the facility boundary than what is considered acceptable by health professionals for the most sensitive people. The risks described here do not consider exposure to other toxic air pollutants besides those released by the Zaca Field.

UNDERSTANDING RISK

The following information helps explain how the potential health impact from the Zaca Field compares with other types of toxic air pollution. The cars we drive, many industrial activities and numerous home products that we use all contribute toxic pollutants to our air. Exposure to these background air toxics may increase your risk of getting cancer, or experiencing other non-cancer-related effects (such as irritation of the eyes, respiratory system or skin). An attachment to this letter, a document from the US Environmental Protection Agency, also provides basic information regarding air pollution and health risk.

RISK REDUCTION MEASURES

After receiving the health risk assessment results, Greka removed the six gas-fired internal combustion engines that directly contributed to the facility's significant risk status. The APCD verified and documented the permanent removal of these engines through a Risk Reduction Audit and Plan (RRAP) and updated the facility permits. Greka will not install or replace any engines at the Zaca Lease facility without performing an updated health risk assessment and receiving APCD approval. Through these actions, Greka reduced the acute non-cancer risk below the APCD's significant risk level.

If you have questions about this letter or the program that has caused its issuance to you, please call us at 961-8800. You also have the right to request a public meeting to further discuss the information in this letter. To do so, call the number listed above or fill out and return the enclosed postcard. You may also check our website: www.sbcapcd.org/biz/greka_za.htm.

Businesses receiving this notice should post it where it is most likely to be viewed by employees.



http://www.epa.gov/ttn/atw/3_90_022.html
 Last updated on Wednesday, June 6th, 2007.

Technology Transfer Network Air Toxics Web Site

You are here: [EPA Home](#) [Air & Radiation](#) [TTN Web - Technology Transfer Network](#) [Air Toxics Web site](#) [Air Pollution and Health Risk](#)

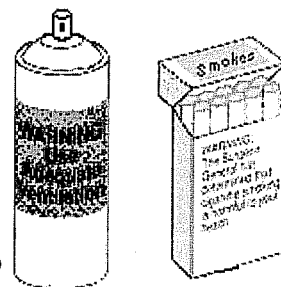
Air Pollution and Health Risk

Originally published as
 EPA 450/3-90-022
 March 1991

How Do We Learn About Risks?



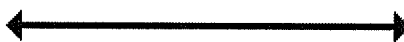
The warnings about risks from hazardous substances are everywhere. Every day, the news media report information on hazardous substances. Many products now tout warning labels or claims about being "all natural" and "chemical free." How do we know when a risk is serious? How do researchers estimate risk, and how does the government use this information to develop regulations that limit our exposure to hazardous substances? The following



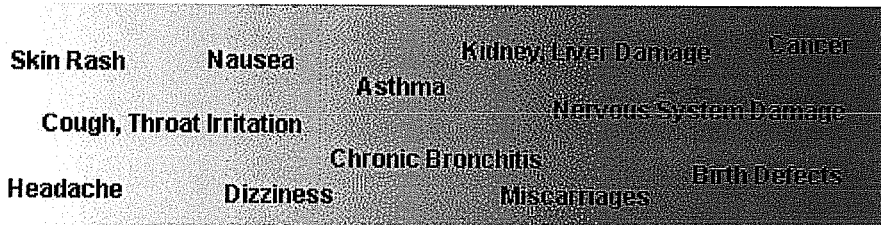
information should help you to answer these questions.

Which Risks Are of Greatest Concern?

Less Serious
 reversible
 not debilitating
 not life-threatening



More Serious
 irreversible
 debilitating
 life-threatening



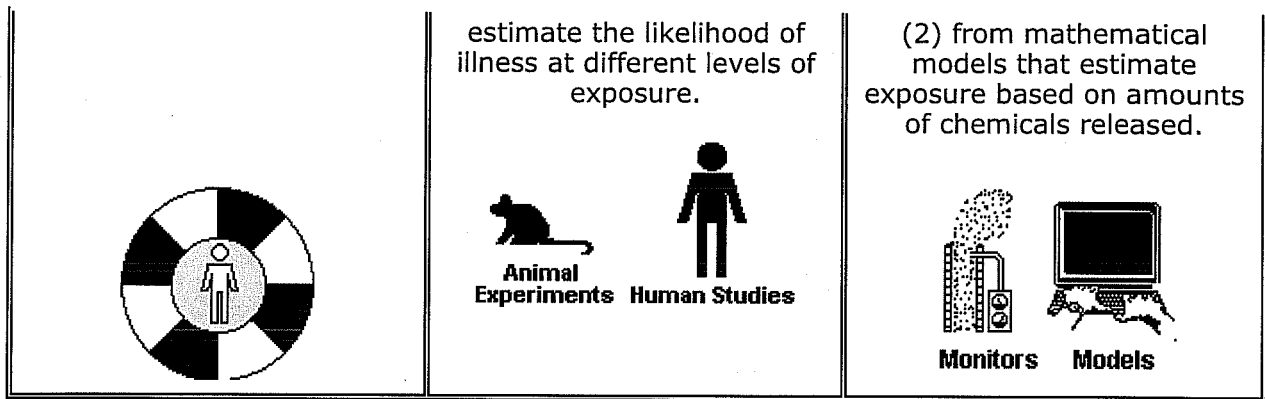
How Do Researchers Estimate Risk?

$$\text{Health Risk} = \text{Hazard} \times \text{Exposure}$$

Health risk is the probability, or chance, that exposure to a hazardous substance will make you sick.

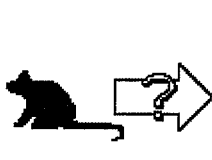
Animal experiments or human studies provide information about how hazardous a substance is. Scientists use the results of such studies to

Information on exposure comes from two places: (1) monitors placed on factory smokestacks or at special places in your community, or



Why Is Information Used for Health Risk Decision Making Uncertain?

Uncertainty About Hazard



Many hazards are identified by testing animals. We do not know for certain whether the hazard estimated using animal studies is the same for humans.

We do not know for certain that monitors or mathematical models always produce accurate estimates of exposure. It is nearly impossible to account for the different exposures a person may encounter daily.

What Are Important Factors in Risk Decision Making?

Balancing Scientific Results with Public and Economic Concerns

Ideally, regulators would like to eliminate all pollution and its risks, but this is usually not a realistic expectation. Regulators must address the most important risks and decrease them to the level at which they believe the risks are smaller than the benefits of the activity causing the pollution.

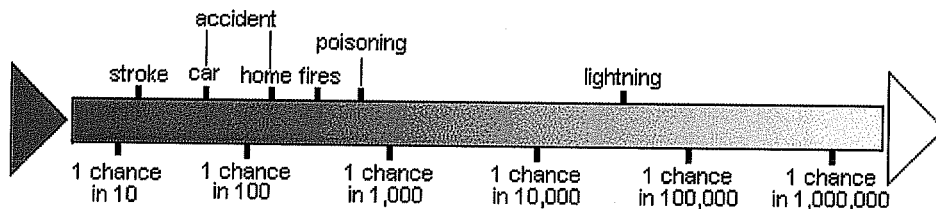
This is similar to what millions do each day when they balance the risks of an automobile accident with the convenience and necessity of driving. Just as a driver will buckle up and drive defensively to be safer, agencies take regulatory action to eliminate as much risk as is possible without losing the benefit.

Public Risk Perceptions

Scientific results may show that certain hazardous substances pose a low health risk to people, but the public may still be concerned about these hazardous substances because of different attributes of the risk. Other attributes may affect people's perceptions of a risk:

- How serious and dreaded is the illness?
- How certain is scientific knowledge?
- What is the catastrophic potential?
- Who bears the risk?
- Is the risk voluntary?
- Who receives the benefits of the "risky" activity?

Putting Risks in Perspective



What Do the Numbers Mean?

To provide an idea of the size of risks from environmental hazards as risk analysts will describe them to you, the continuum above presents risk statistics for some familiar events. Risk analysts describe risks numerically in scientific notation, for example 1×10^{-5} , which means that there is one chance in 100,000 of an event occurring. It is important to note that these risk statistics are population averages, while risk analysts usually estimate risk to the maximum exposed individual.

Actions to Reduce Risk

By becoming better informed you can reduce the risks that you determine to be unacceptable. This may mean changing your lifestyle or providing input to government, industry, and consumer / environmental interest groups. If you would like more information the sources listed below are a good place to start. You may also want to contact your local health department or regional or state environmental agencies for other information sources.

For More Information ...

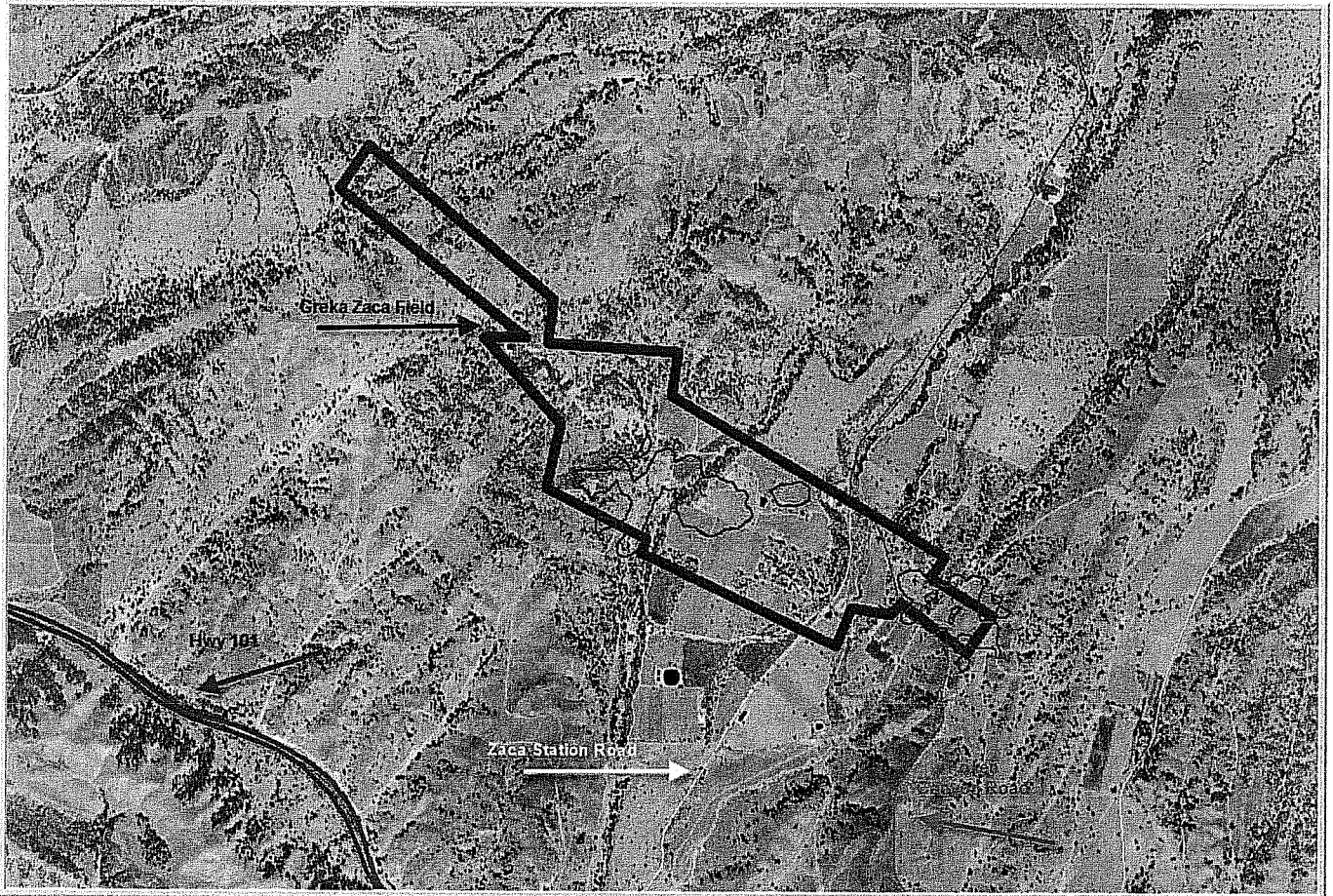
Other Health Risk Publications

Risk Assessments for Toxic Air Pollutants: A Citizen's Guide

Evaluating Exposures to Toxic Air Pollutants: A Citizen's Guide

GREKA ZACA FIELD

SIGNIFICANT ACUTE RISK FOOTPRINT IN RED – ACUTE HAZARD INDEX OF 1.0



MAXIMUM OFFSITE ACUTE NON-CANCER RISK = 3.83
(PROPERTY BOUNDARY IN BLUE)

Request for More Information or Involvement

Yes. I am interested in finding out more about my risk from toxic air pollutants emitted

by Greka's Zaca Field Oil and Gas Leases

Check as many as apply:

Please send me more information from the Air Pollution Control District (APCD)

Please have Greka send me more information

Please ask Greka to contact me. My phone number is _____

My email address is _____

I would like to attend a public meeting on the issue. Please make sure I am
Informed when one is scheduled.

Name _____

Address _____

Please Place
stamp here

Request for More Information or Involvement

Santa Barbara County
Air Pollution Control District
260 N San Antonio Rd., Suite A
Santa Barbara, CA 93110