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Oil Refinery Toxics Found in Air of Nearby Homes

Test Results Released as EPA Considers Addressing Refinery Pollution Chevron Urges Court to Allow Expansion of a Refinery

Toxics from a Chevron oil refinery were found in the indoor air of homes in Richmond, California, according to a peer-reviewed study in *American Journal of Public Health*. The results are being released as the EPA considers measures to reduce pollution from refineries nationwide, and as Chevron is appealing a court decision barring the expansion of one of the nation's largest refineries in Richmond, California.

Researchers tested samples of indoor and outdoor air for over 150 chemicals in 40 homes in Richmond, California (low-income, predominantly minority neighborhoods bordering a Chevron oil refinery, marine shipping corridors and other polluters), and 10 homes in Bolinas, CA (a non-industrial comparison community). The air indoors, where Americans spend 90 percent of their time, was more polluted than the air outdoors in both communities, with 104 toxics detected inside Richmond homes and 69 in Bolinas.

This study marks the first time that indoor air was tested to fingerprint pollutants from oil refineries and shipping corridors. "We found that living near an oil refinery adds exposures that may be hazardous to your health," said Julia Brody, PhD, lead author of the study and Executive Director of Silent Spring Institute. "Toxic pollution from oil refineries doesn't stay outside; it seeps into homes, where people spend most of their time. We hope that federal regulators and the courts will take our findings into consideration as they address air pollution from refineries nationwide."

Air in Richmond homes had more chemicals present and at higher concentrations than in Bolinas. Fine particulates (PM2.5) were found at concentrations above California's annual ambient air quality standard in nearly half of Richmond homes even though the residents were nonsmokers. Particulates are considered an aggregate measure of air pollution. Health studies have linked them to respiratory and cardiovascular problems, including premature death.

Levels of vanadium and nickel in Richmond were among the highest in the state, implicating heavy oil combustion from the nearby refinery and marine port. These compounds indicate the presence in homes of hundreds of unmeasured pollutants from the refinery.

Richmond, in Contra Costa County, has high cancer and respiratory risks associated with industrial air toxics. The county's 15% asthma prevalence rate is among the state's highest.

“There are a lot of people in this community, a lot of people with cancer. A lot of people with asthma, the children have a high incidence of asthma here,” said one Richmond study participant.

The Richmond Chevron refinery is one of the nation’s largest, covering 2,900 acres and processing over 240,000 barrels of crude oil a day into gasoline, jet fuel, diesel, and lubricants. Communities for a Better Environment has voiced concerns about air pollution from flaring (venting and uncontrolled burning of gaseous emissions in routine operations and emergencies) and has sued to block Chevron’s requested permit changes to replace and add equipment that reportedly would increase emissions of sulfur dioxide, sulfates, and metals by refining lower grade crude oil with higher sulfur content.

“Richmond residents living by Chevron’s oil refinery are already worried about health risks from air pollution. Now is the time to reduce pollution by making a green transition, rather than lock in dirtier crude refining that could exacerbate health issues and climate change,” said Jessica Tovar, a community organizer with Communities for a Better Environment.

The California State Court of Appeal has not yet ruled on Chevron’s appeal of a July 2009 court decision that put the Chevron permit changes on hold in response to a lawsuit brought by CBE and other community organizations. The court ruled that the Environmental Impact Report supported by Chevron and approved by the City of Richmond was illegal because it did not disclose whether the project will allow Chevron to process dirtier oil or address the cumulative pollution burden on Richmond residents.

The study was conducted by Silent Spring Institute, the University of California, Berkeley, Brown University, and Communities for a Better Environment (an environmental justice organization). The California Department of Public Health, Commonwealth, Breast Cancer Fund, and Breast Cancer Action contributed information to the study.

The study can be viewed here:

http://silentspring.org/our-publications/articles_summaries/linking-exposure-assessment-science-policy-objectives-environmen.

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Founded in 1994, Silent Spring Institute is a non-profit research organization dedicated to studying the environment's effect on women's health. The study was funded by the National Institute of Environmental Health Sciences. Please visit <http://www.silentspring.org> for more information.