



FRESNO METRO MINISTRY

DIESEL POLLUTION IN THE SAN JOAQUIN VALLEY

Diesel engines emit a complex mixture of air pollutants, mainly composed of gaseous and solid material. The visible emissions you can see in diesel exhaust are known as particulate matter. These include many carbon particles (also called soot) as well as other gases that become visible as they cool. In 1998, California identified diesel particulate matter (diesel PM) as a toxic air contaminant based on its potential to cause cancer and other adverse health effects. In addition to PM, **emissions from diesel-fueled engines include over 40 other cancer causing substances.** Overall, emissions from diesel engines are responsible for the majority of the potential airborne cancer risk in California.

Diesel PM comes from trucks and buses you see on our highways, large off-road equipment such as bulldozers and tractors, engines used in portable equipment such as cranes, refrigerating units on trucks, and stationary engines used to generate power or pump water. All together, these diesel engines release over 2.6 tons of diesel PM into San Joaquin Valley air every day. That's **986 tons** a year!

One of the main characteristics of diesel exhaust is the release of particles at a markedly greater rate than from gasoline-fueled vehicles. For the same amount of energy expended, a diesel engine will emit a much greater amount of toxic particles.

Diesel exhaust emits toxic gases such as carbon monoxide, sulfur oxides, nitrogen oxides, and volatile organic compounds. It also includes particulate matter (PM), which is invisible to the naked eye. Approximately 94 percent of the mass of these particles are less than 2.5 microns in diameter. Because of their small size, these particles can be inhaled and a portion will eventually become trapped within the small airways and alveolar regions of the lung, jeopardizing human health.

The San Joaquin Valley ranks third in diesel-related health problems in the state. The Valley accounts for **10% of California's population and 17% of the State's diesel PM and NOx pollution.**

Diesel exhaust is deadly. According to the Governor's Office of Environmental Health Hazard Assessment, **the cancer risk from diesel exhaust was determined to be greater than the cancer risk from all other atmospheric pollutants combined.** Here in the San Joaquin Valley, the 70-year cancer risk due to diesel exhaust has been estimated to be 510 cases per million persons exposed. That means that for **every 1 million people exposed to diesel exhaust, an estimated 510 will develop cancer.**

Table 4-8. 2004 Health Impacts from Diesel Pollution: San Joaquin Valley

Health Endpoint	Estimated Mean No. of Incidences	Estimated Societal Cost (millions of 2004\$)
Premature Mortality	260	\$1,783
Chronic Bronchitis	234	\$97
Hospital Admissions		
COPD	52	\$0.70
Cardiovascular Illness	153	\$3.04
Asthma Admissions	27	\$0.20
Asthma ER Visits	151	\$0.05
Unquantified Health and Welfare Impacts	U	\$U
Total Estimated Cost		\$1,884 + U

NOTE: Some health and welfare impacts not quantified include smog-related respiratory problems, increasing asthma rates, damage to agricultural crops and forest habitats, reduced visibility, and others. COPD is chronic obstructive pulmonary disease.

SOURCE: Based on UCS estimates of 2004 annual health incidences and EPA health endpoint valuations.

An estimated **260 Valley residents die prematurely** every year due to diesel pollution. That's more than the 248 homicides reported in the eight counties of the San Joaquin Valley in 2003. An additional **234 Valley residents will develop chronic bronchitis** due to diesel pollution this year alone.

151 people will be admitted to the ER because of diesel pollution, and 27 will have to be admitted to the hospital. The cost to California's economy- from lost wages, government expenditure, and other health care costs- is estimated to be more than **\$1.8 billion dollars!**

For more information:

West Coast Collaborative

<http://www.westcoastcollaborative.org/>

Union of Concerned Scientists, "Sick of Soot" (PDF)

http://www.ucsus.org/clean_vehicles/trucks_and_buses/page.cfm?pageID=1429

National Clean Diesel Campaign (Environmental Protection Agency)

<http://www.epa.gov/diesel/>

Air Resources Board Diesel Program

<http://www.arb.ca.gov/diesel/diesel.htm>