

Bay Area Air Quality Management District
Risk Screening Assessment, A# 5718
ARCO #9540, G# 10687
December 3, 2002

This document describes the basis for the health risk screening assessment prepared for ARCO #9540, 3010 Union Ave., San Jose, California. This facility wishes to increase the throughput for its retail gasoline dispensing facility currently operating at this location. In order to do this, the facility must get a permit from the Bay Area Air Quality Management District (BAAQMD). The BAAQMD, as a routine part of the evaluation of a permit application, prepared this screening risk assessment.

Benzene, a toxic air contaminant and a carcinogen, will be emitted during the operation of the gasoline dispensing facility. BAAQMD staff evaluates the possible impact of the increase in benzene emissions, from baseline, that will occur with the throughput change. The benzene impact is expressed in terms of the increased risk of contracting cancer by individuals who live or work near the facility.

The estimated increase in benzene emissions that can be expected from this source is 31.1 pounds per year. Ambient air concentrations of benzene were predicted using the ISCST3 air dispersion computer model. This model uses information about the facility and the emission rates of toxic air contaminants to estimate what concentrations would be expected in the air at various locations around the site. The estimated concentrations of benzene are used to calculate the possible cancer and noncancer health risk that might be expected to arise from this exposure.

The potential cancer risk was calculated using standard risk assessment methodology. For residents, they include the assumptions that exposures are continuous for 24 hours per day, 7 days per week for 70-years. For off-site workers, exposures are assumed to occur for 8 hours per day, 240 days per year over a 46-year period. For students, exposures are assumed to occur for 8 hours per day, 200 days per year. The cancer risk is based on the "best estimates" of plausible cancer potencies as determined by the California Office of Environmental Health Hazard Assessment (OEHHA). The actual cancer risk, which cannot be determined, may approach zero. This type of analysis is considered to be health-protective.

The proposed operation would result in an increased maximum cancer risk of 10 chances in a million for residences near the facility. For the off-site worker, the increased maximum cancer risk is 5 chances in a million. For the students who attend New Covenant Christian Center and School, the increased maximum cancer risk is 0.3 chances in a million. These health risk values, presented in the table below, meet the criteria for acceptable levels established in the BAAQMD's Risk Management Policy.

Health Risk Results	
Receptor	Increased Maximum Cancer Risk
Residential	10 chances in a million
Off-site worker	5 chances in a million
New Covenant Christian Center and School	0.3 chances in a million

School address: New Covenant Christian Center and School
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