

Bay Area Air Quality Management District  
Risk Screening Assessment, A# 6733  
Wash World, P# 15092  
May 20, 2003

This document describes the basis for the health risk screening assessment prepared for Wash World, a new dry cleaner at 8417 International Blvd., Oakland. This facility wishes to operate a new secondary control dry cleaning machine. 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.

Emissions are based on a maximum net solvent usage of 150 gallons per year. The dry cleaning solvent (perchloroethylene or Perc) is considered a toxic air contaminant and a possible human carcinogen. BAAQMD staff evaluates the possible impact of the Perc dry cleaner that will occur during routine operation of the dry cleaning machine. The health impact is expressed in terms of the increased risk of contracting cancer by individuals who live or work near the proposed dry cleaning facility.

The estimated increase in Perc emissions that can be expected from this source are 2025 pounds per year (150 gallons). Ambient air concentrations of Perc were predicted using the ISCST3 air dispersion computer model. This model uses information about the facility, local meteorological data, 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 Perc are used to calculate the possible cancer 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, the exposure is adjusted for the expected maximum number of years (46) of work. For students the assumptions include higher breathing rates for children and that exposures are for 180 days per year over a 9-year period. 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 18.1 chances in a million for residents near the facility. The increased maximum cancer risk for off-site workers is 13.5 chances in a million. For the students who attend Highland Elementary School, the increased maximum cancer risk is 0.044 chances in a million.

The potential for noncancer health effects is evaluated by comparing the long-term exposure level to a chronic Reference Exposure Level (REL). A REL is a concentration level or dose at or below which no adverse health effects are anticipated. RELs are designed to protect the most sensitive individuals in the population. Comparisons to RELs are made by determining the hazard index, which is the ratio of the estimated exposure level to the REL. The maximum chronic concentration is  $3.5 \mu\text{g}/\text{m}^3$  at the apartment building next door. The chronic REL for Perc is  $35 \mu\text{g}/\text{m}^3$ ; therefore the maximum HI is 0.10.

These health risk values, presented in the table below, meet the criteria for acceptable levels established in the BAAQMD's Risk Management Policy for Perc Dry Cleaners.

Health Risk Results	
Receptor	Increased Maximum Cancer Risk
Residential	18.1 chances in a million
Off-site Worker	13.5 chances in a million
Highland Elementary	0.044 chances in a million

School address:

Highland Elementary School  
8521 A Street  
Oakland, CA 94621