



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Cynthia Gonzalez; Isis Mena	Science Fair Use Only <h1 style="margin: 0;">S0812</h1>
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) Preliminary Survey of Lead Content in Soils Along the Alameda Corridor	Division _ Junior (6-8) <u>X</u> Senior (9-12)
Preferred Category (See page 5 for descriptions.) 5 - Earth Sciences/ Planetary Sciences/ Physical Environments	
Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p>The contamination of soil, by lead, is a matter of great concern to the Agency for Toxic Substance and Disease Registry (ATSDR). For this reason we have decided to test the soil in the Alameda Corridor and the areas around it to determine whether the area is contaminated by lead.</p> <p>To do so, we took soil samples from the northeast and northwest side of the corridor, then we moved 1 mile to the east and to the west, depending on the side we were on. At each site we took two samples, each five meters from each other. We repeated the process at the midsection and southernmost areas of the construction site. We had twenty-four samples total. After collecting the soil, we followed the Chaney-Mieke extraction method for trace metal analysis of soil to prepare the samples before running the samples through the spectrometer. The testing was done in the Drew University Toxicology Laboratory in the Augustus Hawkins building. From the results of each site, we would take the higher of the two as the lead representative of that area to reach an estimate of how high the lead level of that area can be.</p> <p>Our results show that all but one site had a lead level of less than 500 ppm (parts per million). Originally, we had thought that the soil would have lead contamination above this permissible amount. The exception was sample two, its lead level was 1,240 ppm, which is far greater than 500ppm. This abnormality may have been caused by the exterior paint on the old buildings around the area. It would be suggested that the inhabitants of this area should be informed of these findings and find a way to minimize the amount of paint.</p> <p>It appears that the Alameda Corridor is not contaminating the area around which it is being built. On average, it does not contain soil with levels of lead exceeding 500 pm. Additional research on this topic should focus on the distance between the each sample. Instead of having the samples be one mile apart, they could be spaced closer together. Also, the land use around the sample area should be noted. This would make the findings more useful.</p>	
Summary Statement (In one sentence, state what your project is about.) Examining the construction site of the Alameda Corridor for lead contamination.	
Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Teacher guided us with any questions we had. Mom and dad drove us around to collect samples. Used lab equipment from the Charles-Drew University's Toxicology lab.	