

CITY OF LOS ANGELES

**DEPARTMENT OF AIRPORTS
TEST RESULTS SUMMARY**

**4 YEAR STUDY OF THE EFFECTS OF
"OMSTAR DIESEL FUEL CONDITIONER D-1280X"
ON SHUTTLE BUS EXHAUST SMOKE OPACITY**

**Prepared by:
California Environmental Engineering
Santa Ana, Ca.**

CITY OF LOS ANGELES DEPARTMENT OF AIRPORTS

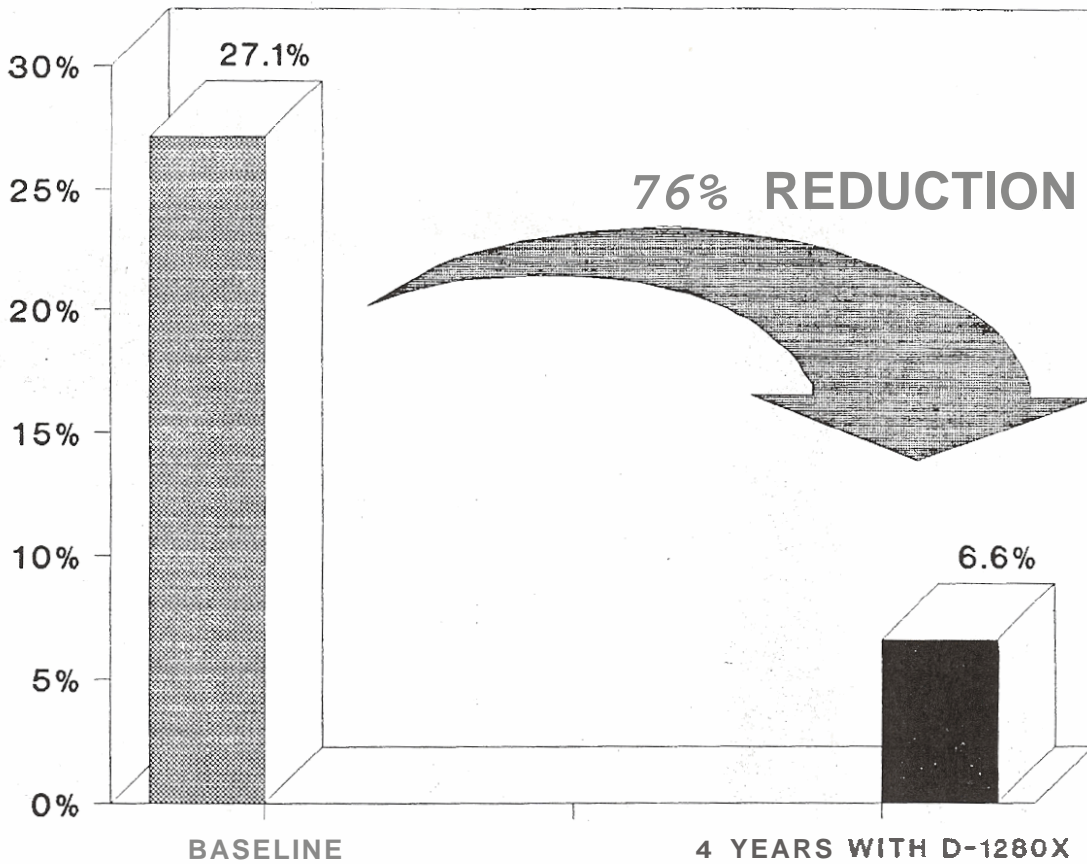
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30 LAX BUSES

**REDUCTION IN EXHAUST SMOKE OPACITY
CAUSED BY: "OMSTAR D-1280X"**

California Environmental Engineering

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Mr. Joseph R. Clair, Jr.
Manager, Landside Operations
City of Los Angeles
Department of Airports
P.O. Box 92216
Los Angeles, C 90009-2219

RE: 4 Year Test of Effects of Omstar D-1280X Diesel Fuel Conditioner on Airport Shuttle Bus Exhaust Smoke Opacity

Dear Mr. Clair,

Enclosed is a report on the testing of Omstar Diesel Fuel Conditioner D-1280X in 30 shuttle buses operated and maintained by Hudson General Corporation at Los Angeles International Airport under contract with the City of Los Angeles Department of Airports. The 4 year test period was 6/88 to 8/92.

Highlights of results of using Omstar D-1280X for 4 years:

-In the total sample of 30 buses, Omstar D-1280X reduced Average Peak Opacity from 27.1% to 6.6%, an 76% reduction.

--In the 11 "heavy smokers" in the baseline sample, Omstar D-1280X reduced Average Peak Opacity from 50.0% to 5.4%, a 89% reduction.

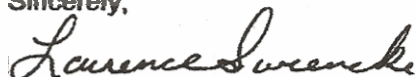
Statistically, the test samples for the 4 year test are represented below: (1 bus was not available for the 4 Year test)

	<u>BASELINE</u>		<u>4 YEAR</u>
Mean	27.11333	Mean	6.643678
Standard Error	3.691779	Standard Error	0.565359
Median	17.35	Median	6.333333
Mode	14	Mode	4
Standard Deviation	20.22071	Standard Deviation	3.044552
Variance	408.8771	variance	9.269294
Kurtosis	-0.17563	Kurtosis	-0.18507
Skewness	1.025553	Skewness	0.599655
Range	69	Range	12.33333
Minimum	6.3	Minimum	2
Maximum	75.3	Maximum	14.33333
Sum	813.4	Sum	192.6667
Count	30	Count	29
Confidence Level (95%)	7.235744	Confidence Level (95%)	1.108082

The test results reflect a significant overall reduction. Bearing in mind that State Law requires that all pre-1990 Diesels emit a maximum of 55% Smoke Opacity when measured using the State of California's Snap Idle Test, this fleet as a whole exhibits an 88% below State mandated level of Smoke Opacity.

All data was recalculated by Mr. Greg Long, Staff Engineer, and reviewed by me. California Environmental Engineering (C.E.E.) is adEPA-recognized and a California Air Resources Board-certified and licensed emission testing facility.

Sincerely,



Laboratory Manager, CEE