



CALIFORNIA RESEARCH CORPORATION

A STANDARD OIL COMPANY OF CALIFORNIA SUBSIDIARY

200 BUSH STREET • SAN FRANCISCO 20 • CALIFORNIA

April 29, 1959

J. L. COOLEY
VICE PRESIDENT

TEST PROGRAM
ASSIMILATION OF LEAD BY
PERSONS DISPENSING GASOLINE
SAN FRANCISCO YELLOW CAB COMPANY

MR. J. G. EVANS
DR. F. A. KEHOE
MR. J. F. KOEHNLE

Gentlemen:

The attached program formalizes the agreements reached with you previously in meetings and discussions. A copy of this test program will be given to Mr. R. W. Hickey of San Francisco Yellow Cab Company at the start of the urine and air sampling program on April 29, 1959.

Very truly yours,

Attach: Test Program

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CALIFORNIA RESEARCH CORPORATION
RICHMOND, CALIFORNIA

TEST PROGRAM
ASSIMILATION OF LEAD BY PERSONS
DISPENSING GASOLINE

EXPERIMENTAL GASOLINES
CALRESEARCH 59R-461
CALRESEARCH 59R-462
SAN FRANCISCO YELLOW CAB COMPANY
245 TURK STREET GARAGE

DATE: April 27, 1959
FILE: 121.102
WRITTEN BY: W. L. Richardson

The purpose of this test is to determine the amount of lead assimilated by persons who handle large volumes of gasoline.

Cooperating Organizations and Personnel

1. San Francisco Yellow Cab Company
245 Turk Street, San Francisco, California
Mr. R. W. Hickey, Executive Vice President
TUxedo 5-1234
2. California Research Corporation
576 Standard Avenue, Richmond California
Mr. W. L. Richardson
BEacon 2-1514, Extension 337
In his absence: Mr. M. R. Barusch
BEacon 2-1514, Extension 337
3. Standard Oil Company of California
Medical Department and Personnel Department
225 Bush Street, San Francisco, California
Mr. J. A. Spence, Corporation Industrial Hygienist
Representing Dr. L. E. Curtis, M.D. - or
Mr. S. H. Judd
SUTter 1-7700, Extension 3423
4. Standard Oil Company of California
Product Engineering Department
225 Bush Street, San Francisco, California
Mr. H. W. Sigworth
SUTter 1-7700, Extension 4202
5. The Ethyl Corporation
235 Montgomery Street, San Francisco, California
Mr. W. J. Hancock and
Mr. J. F. Koehnle
DOuglas 2-1778
6. E. I. du Pont de Nemours and Company
Petroleum Products Division
111 Sutter Street, San Francisco, California
Mr. J. G. Evans and Mr. E. H. Kiehn
EXbrook 2-1934

Dr. L. A. Gerlach, M.D.
Du Pont Laboratories, Antioch, California
PLateau 7-1210
7. Dr. R. A. Kehoe, M.D., Medical Consultant
The Kettering Laboratory
University of Cincinnati
Eden Avenue, Cincinnati, Ohio
CApitol 1-1414

8. Standard Oil Company of California
Motor Transport Department
Seventh and Irwin Streets
Mr. J. J. Harris
Sutter 1-7700, Extension 2715
9. Standard Oil Company of California
Wholesale Sales Department
San Francisco Region
130 Sutter Street
Mr. C. R. McClellan
Sutter 1-7700, Extension 2788

The Manufacturing, Marketing Services, and Distribution Departments will participate in their appropriate capacities, assuring availability and smooth flow of the test gasolines to the Yellow Cab Company (Memorandum FLC-LSBessonett et. al., 4-22-59, "Supply and Distribution of Test Gasolines to San Francisco Yellow Cab Company").

Experimental Gasolines

The regularly supplied Chevron Gasoline and two experimental gasolines, CALRESEARCH 59R-461 and CALRESEARCH 59R-462, which are indistinguishable in appearance and performance, will be sold to the account at the same price as Chevron Gasoline. Sufficient gasoline will be provided to supply all the taxicabs which operate from the Turk Street garage.

Test Procedure

Before commencing the test, the attendants concerned with the dispensing of gasoline from the Turk Street garage will have physical examinations. The garage attendants listed on Table I, as well as the tank truck drivers and others as selected by the Industrial Hygienist, will provide urine specimens each working day as directed by the Industrial Hygienist. The times at which samples will be taken are listed opposite the names of the participants in the attached Table I.

It is vital that the men follow the explicit directions of the Industrial Hygienist so that the urine specimens are not contaminated. A representative of either the Industrial Hygienist or the Du Pont Company will be present to supervise the sampling.

During the test, a representative of the Ethyl Corporation will sample the atmosphere in the vicinity of the gasoline pump islands to determine both the total airborne lead concentrations and the particulate lead concentrations. Sufficient measurements will be made to obtain a typical 24-hour atmospheric lead concentration profile while each of the three gasolines is in use. Effort will be directed in particular to obtaining reliable lead concentration data during the hours of peak refueling rate. The atmospheric lead levels around the manufacturing and distribution facilities will be monitored, and persons involved in handling the gasolines will supply a sufficient number of urine samples to permit an evaluation of typical lead contents.

Test Duration

The test will require from eight to ten weeks.

Responsibility of Participants

San Francisco Yellow Cab Company

1. The garage attendants employed at the Turk Street garage of the Yellow Cab Company will provide daily urine specimens. Mr. S. H. Judd, who will represent the Industrial Hygienist in the collection of urine samples, should be notified of any changes in the schedules, shifts, or availability of the garage attendants.
2. To insure adequate delivery of the test gasolines, the Yellow Cab Company may be called upon to determine the daily gasoline requirements and relay such information to the Motor Transport Department Dispatcher.
3. The California Research Corporation representative will be contacted should any problem arise not covered by specific instructions or should any unusual situations develop that might affect the test.
4. The Yellow Cab Company will bill California Research Corporation at the rate of \$150 per month for the duration of the test and for such other extraordinary expenses as are incurred at the request of California Research Corporation.

California Research Corporation

1. California Research Corporation will be responsible for the over-all coordination and conduct of the test program and the compilation of fueling rate data.

Medical Department and Industrial Hygienist

1. The Industrial Hygienist will be responsible for obtaining urine samples in cooperation with the Du Pont Company. Data on atmospheric carbon monoxide content and air currents in the garage will also be obtained.

2. Dr. Curtis of the Medical Department will make arrangements with Dr. David L. Rodgers, M.D. for physical examination of the Yellow Cab Company personnel involved in the urine sampling program.

3. The Corporation Hygienist will designate Standard of California employees involved in manufacture and transportation of the test gasoline who will be involved in the urine sampling.

Product Engineering Department

The Product Engineering Department will be responsible for coordinating the supply and distribution of the test gasolines in cooperation with the Motor Transport, Distribution, Marketing Services, and Manufacturing Departments.

Ethyl Corporation

Mr. W. J. Hancock of the Ethyl Corporation will be responsible for obtaining samples of total air-borne lead and particulate lead.

E. I. du Pont de Nemours and Company, Inc.

Mr. E. H. Kiehn of the Du Pont Company will cooperate with Mr. S. H. Judd in obtaining the urine samples and having appropriate analysis made.

The Kettering Laboratories

1. Dr. R. A. Kehoe will advise on the adequacy of the program, insure the employment of proper analytical methods, evaluate the results, and be instrumental in the solicitation of the Surgeon-General's concurrence.

2. The Kettering Laboratories will perform analyses of the urine samples under the direction of Dr. R. A. Kehoe.

3. Dr. Kehoe will follow the progress of the tests and advise California Research Corporation of any procedure modifications which he deems necessary for the successful completion of the tests.

4. Dr. Kehoe will forward results of the analyses to Dr. L. A. Gerlach of the Du Pont Laboratories at Antioch, Calif., and a copy to the Standard Oil Industrial Hygienist.

Motor Transport Department

The Motor Transport Department will deliver the test gasolines to the Yellow Cab Company and will make their drivers available for urine sampling (Memorandum FLC-LSBessonett et. al., 4-22-59, "Supply and Distribution of Test Gasolines to San Francisco Yellow Cab Company").

Wholesale Sales Department,
San Francisco Region

The Wholesale Sales Department will be informed of the progress of the tests to the extent they wish.

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