VEHICLE TESTING
TO
DETERMINE FEASIBILITY
OF
EMISSION INSPECTION AT ALTITUDE

Automotive Testing Laboratories, Inc.
19900 East Colfax Ave.
Aurora, Colorado, 80011

for the

Environmental Protection Agency

Contract 68-01-0439

September, 1972

EPA-420-R-72-100

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by

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EPA Review Notice

This report has been reviewed by the Environmental Protection Agency and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

ABSTRACT

A laboratory study was conducted on 1968 through 1972 model vehicles at altitude to evaluate vehicle emission reduction concepts investigated and applied at lower elevations. Since vehicle exhaust hydrocarbons and carbon monoxide emissions are intrinsically high at higher elevations, it was suspected that emission reducing strategies might not prove significantly beneficial at higher elevations. Furthermore, emission reduction factors by engine maintenance are not defined.

The study quantitatively defined hydrocarbon and carbon monoxide emission reduction at about 15% and 10% respectively. Oxides of nitrogen emissions remained unchanged. Direct maintenance cost to achieve this reduction is about $12.00 per car.

Key mode and idle emission inspection concepts both proved to be beneficial in achieving emission reductions. However, experimental results indicate that greater correlation exists between key mode inspection and the 1975 Federal exhaust emission test procedures. Based on these correlations, the assumption that key mode is more able to define high emissions was tested and confirmed. Although the key mode - Federal test correlation is greater, emission inspection by idle testing was found to be the more cost effective inspection concept.

This report was submitted in fulfillment of Contract 68-01-0439 under the sponsorship of the Environmental Protection Agency.

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SECTION I

CONCLUSIONS

1. At a nominal cost limitation of $25.00 per car, the mean <u>direct</u> cost expected to be incurred as a result of engine maintenance and adjustment is about <u>$12.00</u> as indicated by a sampling of seventy-five 1968 through 1972 model passenger cars.

2. The change in fuel economy measured before and after maintenance of the seventy-five car sample is insignificant.

3. Engine maintenance resulted in mean reductions of exhaust hydrocarbons and carbon monoxide of statistical significance while emissions of oxides of nitrogen remained unchanged.

4. With reference to emission inspection, key mode inspection exhibits greater correlation with 1975 Federal exhaust emission test procedures than does inspection by idle emission concentration.

5. Passenger car exhaust emissions can be better identified by key mode emission inspection than by inspection of idle emission concentration only.

6. Reduction of exhaust hydrocarbons and carbon monoxide is more cost effective by idle emission inspection than by key mode inspection at 10, 20, 30, 40 and 50 percent rejection rates.

SECTION II

RECOMMENDATIONS

This program was designed to evaluate practical solutions to a complex problem under laboratory conditions. It was not within the scope of the study to define all of the variables associated with the problem nor to develop emission reduction factors under field conditions nor to develop long term cost effectiveness factors. It is recommended, however that field evaluations be conducted and long term cost effectiveness be determined.

In consideration of several factors found to exist with respect to engine adjustment, it is suggested that field evaluation be preceeded by orientation and training sessions for vehicle maintenance personnel. In the conduct of such a program, it is recommended that the same concepts of emission inspection and rejection which were evaluated in this study be applied.

It is known that vehicle emissions at altitude are intrinsically high. With reference to emissions at altitude, a quantity of new data was developed by this study. It is recommended that this data be compared with equivalent data developed at lower elevations to further identify differences and the implied potential requirement for greater emission reductions. Additionally, data should be further examined to identify any significant trends in high emissions with respect to parameters such as engine size, vehicle weight, etc., not investigated by this study.

Although concepts investigated by this study are not new, their significance may not be fully understood nor appreciated. Field evaluation would serve as a proving grounds where information on a more practical level would be generated. This information will provide additional input by which a program of greater magnitude would be guided. It is therefore recommended that a pilot program be instituted and evaluated prior to the establishment of a mandatory emission inspection and maintenance program of any significance.

SECTION III

INTRODUCTION

Background

Motor vehicles are recognized as a major source of air pollution in major cities throughout the United States. As a result, methods are presently being sought by which vehicle pollution can be reduced.

Starting within the State of California, laws were enacted to regulate emissions of certain defined harmful pollutants from motor vehicles. Subsequently, standards for motor vehicle emissions have become more inclusive and more stringent, both as a result of statewide efforts of California regulatory agencies, and more recently by the nationally directed activities of the U.S. Environmental Protection Agency. As a result of these efforts, new motor vehicles have been produced in compliance with emission standards for several years at generally lower emission levels for each successive vehicle model year. However, in an effort to continue to reduce emissions from motor vehicles, many problems continue to exist.

Although motor vehicles comply with Federal Emission Standards when manufactured, several factors remain as obstacles to continued low emission vehicle operation. As vehicles become older and accumulate mileage, deterioration in engine component parts and accessories tends to occur which is accompanied by corresponding changes in emission levels. These changes are generally in a direction considered to be undesireable. Studies have shown that this tendency can be reversed through corrective maintenance and adjustments (Reference 1). These same studies indicate that emissions are not maintained at manufacturer's standards by the maintenance to which vehicles are normally and voluntarily exposed. Thus, in an effort to minimize the contribution of motor vehicles to undesireable loading of the atmosphere, it is considered necessary to investigate other methods of maintaining low emission levels. Hence, studies have been initiated to investigate feasibility of mandatory emission inspection and maintenance (Reference 2).

The State of Colorado is presently considering the establishment of a mandatory vehicle emission inspection and maintenance program. An independent contractor was selected to conduct a feasibility study. Specifications for the study are detailed and comprehensive, and the Colorado Health Department expressed a desire to have the study completed in time to review the results prior to the 1973 Colorado Legislative Session. With a completion date as a main consideration, the Health Department decided to proceed with the study without the inclusion of an actual testing program. Following the decision to proceed, reservations concerning a void in emission data taken at altitude were expressed. Additionally, the advisability of using sea-level emission data to fulfil certain critical requirements of the Colorado study was questioned. Automotive Testing Laboratories, Inc. (ATL) responded by submitting a proposal to conduct vehicle emission tests at altitude. The proposal was submitted to Region VIII of the Environmental Protection Agency (EPA). The Regional EPA Office, headquartered in Denver, Colorado, and the EPA Office of Air Programs at Ann Arbor, Michigan recognized potential deficiencies in the Colorado study and contracted with Automotive Testing Laboratories, Inc. to provide current emission data to supplement the Colorado Study.

Statement of the Problem

Approximately 4 percent of the population of the United States live at elevations of 3000 feet or more above sea-level. Privately owned passenger cars are similarly distributed throughout the U.S. and about 4 percent of registered vehicles are operated at elevations above 3000 feet. Passenger car registrations in the State of Colorado alone exceed one million vehicles in 1972. As is the situation in cities at or near sea-level in elevations, population centers located at higher elevations are exposed to high levels of air contamination. Studies conducted during the past several years indicate motor vehicles to be a major source of atmospheric contamination in virtually all of the larger cities of the U.S., regardless of geographic setting.

Although volumes of data have been collected and analyzed concerning methods by which motor vehicle emissions can be controlled, relatively little data is available with respect to vehicle emissions at altitude. The Environmental Protection Agency, has gathered emission data from vehicles operating in the Denver Metropolitan Area. In support of two studies previously conducted (References 3 and 4), recent test results show carbon monoxide and hydrocarbon emissions to be significantly higher at higher altitude and emissions of oxides of nitrogen to be lower.

In addition to changes in altitude, a major factor known to affect emissions is the frequency and quality of maintenance to which a vehicle is exposed. To a large extent, maintenance practices are dictated by the environment in which a vehicle is required to operate. A marginal electrical system, for example, is more likely to receive attention in a northern climate as cold weather approaches and engine starting becomes increasingly more difficult. In turn, emissions are expected to decrease as poorly operating components are properly adjusted and maintained. Thus, exhaust emissions in the Rocky Mountain Region, or more specifically, the State of Colorado, are affected not only by altitude, but are also indirectly influenced by climatological conditions.

Colorado's feasibility study of vehicle emission inspection was precipitated as a result of the poor quality of atmosphere over Metropolitan Denver. Previous studies indicate that emissions from motor vehicles are a major contributor to Denver's poor atmospheric quality. Furthur, comparative data indicates motor vehicle emissions in Denver are greater, because of the higher elevation, than at lower elevations on a per mile basis. Because of the unique combination of elevation, climate, and vehicle maintenance and adjustment practices resulting from this combination, it is suspected that emission inspection and maintenance concepts proven elsewhere may not necessarily produce the same results when applied in Colorado.

Purpose of the Study

The overall purpose of the study is to provide the Environmental Protection Agency with data to assist local air pollution regulatory bodies in developing effectual emission control and abatement programs. With respect to the Rocky Mountain Region, the State of Colorado is now evaluating methods by which emissions from motor vehicles can be controlled. Other mountain states will undoubtedly find it necessary to do likewise. Before EPA can assist and recommend programs, certain specific information must be obtained, which should be investigated in the environment in which problems exist. Various concepts of motor vehicle emission control have been investigated in other areas of the United States. Many of them have been shown to be too complex and uneconomical to be applied on a scale broad enough to have an impact on the environment. In the State of Colorado, interest has been expressed in a few concepts which have been shown to be practical elsewhere. Several of these concepts are presently under evaluation with respect to a mandatory motor vehicle emission and inspection and maintenance program. Therefore, this study is designed to provide information relative to:

> Effectiveness of engine maintenance and adjustments as a method of reducing exhaust emissions from motor vehicles.

Establishment of _direct_ costs to the motorist expected to be incurred as a result of engine maintenance and adjustments.

Evaluation of Key Mode and Idle Inspection procedures as potential emission identification regimens.

Development of correlations between the Federal Emission Test Procedure and Key Mode exhaust emission concentration measurements and Key Mode mass emission measurements.

Expansion of baseline exhaust emission data developed at Denver's elevation.

This study then, is to provide additional information relative to the effectiveness of emission control concepts as applied in the Colorado environment.

Scope of the Study

The scope of the study consists essentially of three phases. They are:

To develop a current compilation of Colorado Motor Vehicle Registration data.

To conduct exhaust emission tests and maintenance on a representative sample of vehicles.

To compile and analyze test and maintenance data as generated by testing and maintenance procedures.

General Specifications of the Study

One of the main considerations in the conduct of an investigational study of this nature is that of sample selection. In order to develop data which adequately describes a particular situation it is normally desireable to select a sample which is representative of a larger population, preferably by a method of randomized selection. However, regardless of the care with which an experiment is designed, for one reason or another, some bias is inadvertently introduced into the experiment.

Another segment of the study which requires special consideration is that of engine maintenance. To evaluate the effect of maintenance, vehicles were scheduled for initial tests in the condition in which they were received.

Maintenance was then performed and the vehicles were retested. Some doubt existed as to the basis for determination of the degree of maintenance and the specific areas in which it was to be performed. After careful consideration, the decision was made to place a limitation on maintenance costs for each individual vehicle based on typical labor rates and retail parts costs. It was furthur decided that, based on a subjective evaluation, engine maintenance and adjustments would be performed only in those areas known to affect emissions. Carburetion and ignition malfunctions and misadjustment would receive priority.

Several concepts in vehicle emission inspection have been developed and evaluated during the past several years. It was not the intent of this study to re-evaluate these concepts. Previous investigation, as indicated by the EPA, show the Clayton Key Mode (Reference 5) to be high on a list of potential inspection methods for state programs. Although emission inspection at engine idle is a less desireable inspection method, the State of Colorado expressed interest with regard to inclusion in its study as a potential inspection regimen. Both of these methods are included for evaluation.

Although the study was completed in a relatively short period of time, a large quantity of new data was developed. Analysis of the data was performed in those areas considered to be critical to satisfy certain requirements of the Colorado emission inspection feasibility study. In the development and subsequent presentation of data, care was taken to assemble and report data in its entirety so as to facilitate the use of this data by other interested organizations.

SECTION IV

EXPERIMENTAL DESIGN

As the study was initially conceived, it was logical that it should be divided into three distinct, but interacting phases. This section describes the consideration given to the development of each phase.

Phase I

The first phase of the study consists of the development of current Colorado motor vehicle registration data and selection of a vehicle test sample.

The State of Colorado had included a requirement for projected motor vehicle registration data in its feasibility study specifications. Data was to be developed in order to establish an emission reduction forecast, as a result of applied emission reduction concepts. Consideration was given to the anticipated effort involved in accurately predicting motor vehicle registrations and to the detail which was thought to be ultimately required. At the outset, it was believed that reasonably good correlation could be established between the Federal Test Procedure and Key Mode mass emission data. It was furthur believed that correlation could be established between Key Mode concentration and mass emission data. Assuming these correlations would be established, additional emission data could then be developed by less complex and costly test procedures. The conclusion was that registration data should be produced in as much detail as possible so subsequent data could be expanded to more accurately predict emission inventories. This phase of the study was designed in such a manner that projections could be made more comprehensive at but slight increase in overall effort.

Prior to initiation of the testing program it was considered necessary to have at least a segment of the registration data compiled. The desire was to have current registration data available for selection of vehicles for emission sampling. Since 1972 calendar year Passenger Car Registration Data have not been published, it was necessary to make projections of 1972 data from data published in previous years.

There are numerous ways by which a sample can be selected. Theoretically, a purely random method of sample selection would have yielded a sample which would have been representative of the population and totally satisfied the intent of the study. However, due to limits of access to the population, a purely random sample was not feasible. Subjective reactions of vehicle owners who wish to participate or not to participate tend to bias a sample even if access were not limited. Owners of a particular vehicle, by make, or model year, or in some condition of repair, etc. are enthusiastic or are not enthusiastic about participation. In the design of this study these factors were considered. The conclusion finally reached was that compromises in sample selection would have to be made. Although compromising approaches were carefully considered prior to adoption, bias in the sample is known to have been introduced and its effect is difficult to evaluate.

<u>Phase II</u>

The second phase of the study was to consist of conducting exhaust emission tests and maintenance on vehicles selected in Phase I.

In the process of selecting emission test procedures, it was considered desireable to choose a procedure which most accurately determined representative emission levels. As a secondary consideration, it was desireable to select a procedure used previously to evaluate vehicle emission levels in the Denver area (Reference 6). The 1975 Federal Test Procedure was subsequently chosen as the primary test procedure since it satisfied both requirements.

Consideration was then given to the selection of less complex emission inspection procedures. The Colorado feasibility study specifications expressed interest in two procedures, the Idle test and the Key Mode Test. EPA, Region VIII, expressed an interest in the Key Mode procedure since, of the many short test cycles developed, the Key Mode procedure appeared to satisfy many of the requirements for a short inspection procedure. Key Mode was subsequently selected as the short test cycle. The Idle test procedure was also included since data at idle could be extracted from the idle mode of the Key Mode procedure with little additional effort.

With respect to engine maintenance and adjustment some uncertainty initially developed as to specifications to which engines would be adjusted. The uncertainty developed as a result of purported changes in original factory specifications commonly practiced by local maintenance organizations to improve engine performance at altitude. After conferring with the EPA Project Officer and in consideration of restrictions imposed by Federal Regulations (Reference 7), it was decided that original factory specifications would be maintained (one exception to be discussed later).

There are several approaches which can be taken with respect to an evaluation of the effect of engine maintenance in controlling emissions. For example, a sample could be divided into sub-sets. One sub-set would receive an idle adjustment only and another a complete engine tune-up. Subsequent analysis of data would reveal the individual effectiveness of each procedure. This was not the approach employed by this study, however. First of all, the size of the sample did not permit division of the sample into subsets. Secondly, the tactic employed here was that of establishing a maximum emission reduction factor which could be expected as a result of a rather extensive maintenance and adjustment program.

<u>Phase III</u>
The third phase of the study consists of the analysis of data.

In consideration of the fact that very little emission data is available at Denver's altitude, the program was designed to accumulate as much new data as practical within economic restraints of the program. This was accomplished.

In the analysis of data it was thought that primary consideration should be given to those areas that were of express interest in the Colorado Study. Upon examination of the specifications for the Colorado Study, it was concluded that the testing program should be designed primarily to determine effectiveness and costs of engine tune-up and the ability of Key Mode and Idle Inspection to identify emissions. Analysis and subsequent presentation of data were designed to show the results of this determination, and a comprehensive statistical analysis is provided.

SECTION V

TEST PROGRAM DESCRIPTION

Previous sections have described the background and stated the problems in emission control at higher elevations. A description of the purpose and scope of the study were also presented along with some of the special considerations involved in the design of the program. In order that the results of the study may be better understood, this section is presented to describe the step by step procedure undertaken to complete each phase of the program.

Development of Colorado Motor Vehicle Registration Data
Several organizations assemble, process, and publish automotive statistical data. As a result, data relative to vehicle registrations and original equipment sales is available in several different forms.

In order to minimize discrepancies which may have been introduced as a result of variation in the collection and processing of data, a single prominent source of statistical data was selected. This source also supplies data to automotive statistical publications. Vehicle registration data for calendar years 1963, 1965, 1967, 1968, 1969, 1970 and 1971 was assembled from copies of automotive publications or as directly supplied by the statistical firm. Additional copies of automotive publications were obtained which contained data relative to automobile sales by model year, make, body style and original equipment. Original factory sales data was then extracted for vehicle model years 1955 through 1972 and organized for subsequent analysis.

It was known that the task of predicting motor vehicle registrations was to be a relatively large one. A large quantity of data processing was involved. It was decided that the major part of the data would be processed by computer. In order to develop a computer program which would process and project registration data, it was first necessary to develop preliminary information. This was accomplished by manual plotting of data. Plots were completed on a quantity of registration data by Years in Service versus Percent Remaining in Service by vehicle make and model year. After a number of plots were completed, it was obvious that certain similarities existed in the data. Furthur examination revealed that each make of vehicle exhibited distinct failure characteristics. It was subsequently concluded that failure characteristics by make (Chevrolet, Ford, Plymouth, etc.) were sufficiently similar so as to permit treatment of data by the same method over several model years.

The next step in the process was that of selecting equations to which empirical data would best fit.

Examinations of manual plots of published registration data showed the existence of three distinct characteristics in data. The first was; in the year in which a vehicle model was first introduced, registrations were far below those for the same model in the subsequent year. The explanation is that in any given registration year, all new model vehicles had not been sold as of the final registration date. Registration years and model years do not coincide. Secondly, all model vehicles continue to appreciate for several years after introduction. This appreciation is probably coincident with the influx of population to the state. Thirdly, upon reaching a peak in registrations, a relatively smooth depreciation curve begins to develop. In order to establish reliable predictions of vehicle registrations it was necessary to develop equations for the three segments as just described.

The development of an equation for the first segment, that of a sudden increase in registration data in the first year after introduction, was a relatively simple operation. Data from previous years was examined and a simple factor was established from which first-year-after-introduction data could be predicted. Independent factors were developed for each make of vehicle.

The second equation developed was obtained by doing a least squares fit to empirical data from registration files. An equation was developed for each vehicle make.

The selection of a third equation which described the vehicle depreciation curve was completed by a more difficult procedure. In the development of product lines, manufacturers frequently use equations to predict long term failures based on a short term test. Listed among equations are Lognormal, Gumbel, Binomial, and Weibull. Of all equations in these general forms, it was thought that one of the four would best fit vehicle registration depreciation curves. All equations were tested and it was found that Weibull distribution best fit the data. This method was subsequently used to describe the third segment of registration attrition curves and an equation was established to describe each make of vehicle.

Figure 1, Computer Plot of Attrition Curve, is an actual plot based on registration data from past years and predicted registrations from future years. The plot shown is for 1961 model year Plymouths previously registered or predicted to be registered in Colorado. In the illustration, zero (0) Years in Service corresponds to the middle of the calendar year in which the vehicle was originally sold, in this case, 1961, and 10 Years in Service corresponds to mid-1971.

As previously discussed, it was decided that predicted registration data should be developed in as much detail as practical and should include data on 1955 through 1972 vehicle model years since they comprised over 95% of Colorado passenger car registrations. Specifications for a catalog of predicted vehicle registrations were established which contained projections of registrations of 1955 through 1972 models by:

Model Year
Make
Model
Vehicle Weight
Engine Displacement
Transmission Type
Carburetor Type
Vehicles Registered in Colorado as of mid-year

1971
1972
1973
1974
1975

Procedures were then developed to compile and process the data.

First, the following tables were extracted from automotive publications:

1. Model Year Passenger Car Production, by Makes (manufacturer, make, model, units sold as a percent of total).

2. Standard Engines - Ratings and Performance (manufacturer, make, model, engine displacement, curb weight).

3. Optional Engines - Ratings and Performance (manufacturer, make, model, engine displacement, curb weight).

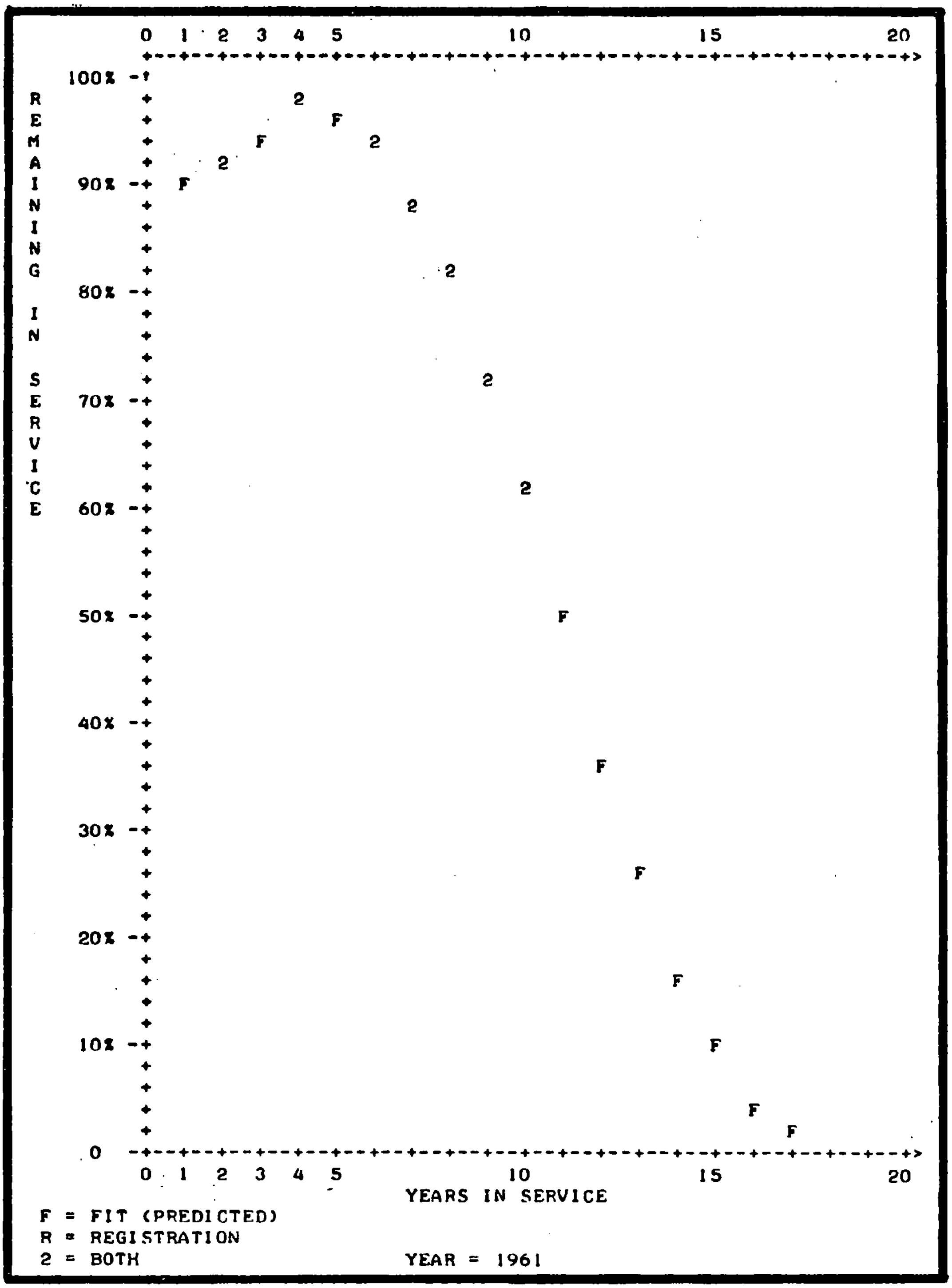

Figure 1, Computer Plot of Attrition Curve

4. Model Year Factory Installation of Selected Equipment (transmission, automatic, manual 3-speed, manual 4-speed; engines, V-8, 6 cylinder).

5. Exhaust Fuel and Cooling System (manufacturer, make, model, carburetor type)

A listing was then established and column headings were assigned. Data was then transferred from the automotive publication in terms of percent of sales by make, model, engine, transmission, and carburetion into appropriate columns. Figure 2, Flow Chart of Registration Data Development, shows the method by which vehicle registration data was compiled. Upon completion of the compilation, computer input tapes were punched, input, and combined with attrition curves which had been developed for each make and model year. The Colorado Motor Vehicle Registration Catalog (Predicted) was then printed.

Based on catalog data, predicted registration of 1955-1972 model passenger cars for Colorado was obtained for years 1972 through 1975.

A summary of 1972 data is shown in Table 1, Distribution of Passenger Cars by Model Year in Colorado as of July, 1972. It is interesting to note that more than half of the passenger cars currently registered in Colorado are not as yet equipped with factory installed exhaust emission control systems.

Test Sample Selection

In selecting a sample of vehicles for testing, a purely randomized selection would be ideal. However, as mentioned earlier, this approach was not feasible. A compromise approach was then recommended which consisted of randomly selecting vehicle owners from passenger car registration files, addressing correspondence to them and requesting participation. Due to a technicality in Federal laws, this method proved to be too cumbersome in view of time limitations placed on the program. An alternate approach to secure vehicles was then developed.

A news release was prepared and submitted to the news-media which described the program in general and indicated a method by which car owners could express their desire to participate. The release was carefully worded so as to avoid mention of maintenance to be performed or any item thought to possibly introduce bias beyond that which seems to be inherent in public oriented programs. Participation was encouraged by offering a $25 U.S. Savings Bond to those

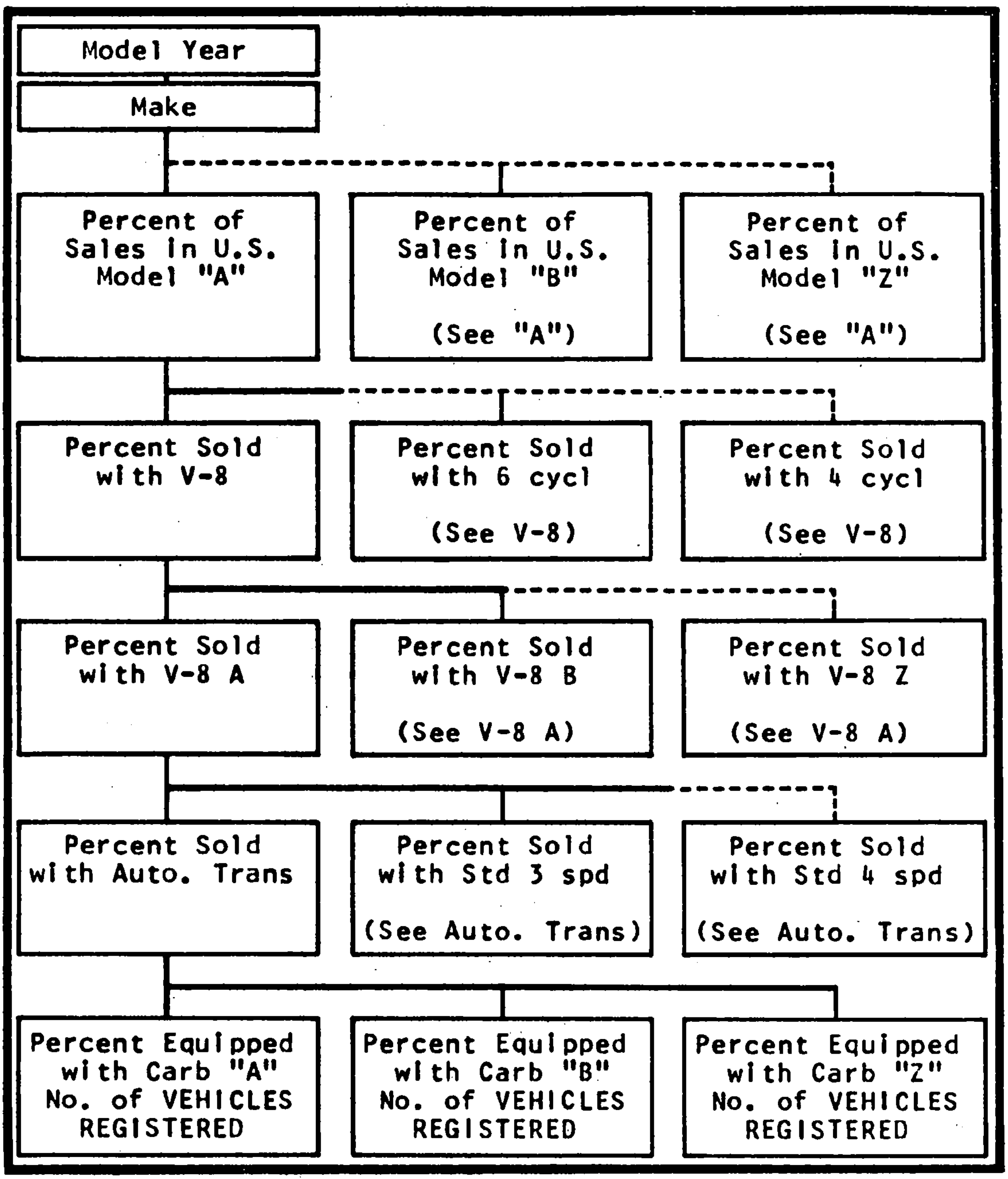

Figure 2
Flow Chart of Registration Data Development

Model Year		Number Registered		Percent of Total
1972	EXHAUST	60,373		5.86
1971		114,939		11.14
1970	EMISSION	90,540	44.7%	8.80
1969		96,131		9.29
1968	CONTROLLED	99,861		9.68
1967		91,039		8.80
1966		94,156		9.09
1965		89,453		8.70
1964		76,017		7.33
1963	NOT	62,956		6.06
1962		31,768	55.3%	3.03
1961	CONTROLLED	34,750		3.32
1960		29,295		2.83
1959		17,748		1.76
1958		6,984		0.68
1957		5,157		0.49
1956		4,543		0.49
1955		3,697		0.39
1954	and earlier	23,215		2.30
		1,032,552		100.0%

Table 1, Distribution of Passenger Cars by Model Year in Colorado as of July, 1972 (Predicted)

owners whose vehicles were finally selected for testing. A negative thought developed with respect to the Savings Bond. Concern was, the Savings Bond would attract an economic segment of the population with an immediate need for financial assistance. However, this was quickly dispelled with the realization that Bonds were not immediately convertible, and considering vehicle model years from which the sample was to be selected, all potential participants were in roughly the same economic situation.

The news release produced the desired response. A telephone number was indicated, by which candidates could express a desire to participate. Upon receipt of a call from a candidate, the desire to participate was first determined, then a detailed explanation of the program was offered. In all, 268 calls were handled. A comprehensive analysis of vehicle distribution was not performed on the total sample of vehicles offered for testing. However, the validity of the sample is indicated by the fact that seventy-five of seventy-five vehicles, by make and model year, originally designated to fit sample specifications were selected from the group.

Sample Specifications
The study was designed to investigate emissions from a representative sample of seventy-five vehicles from model years 1968 through 1972 (factory equipped exhaust emission control systems) operating in the Denver Metropolitan area. Design considerations included vehicle selection in proportion to appearance in the population by make and model year. In some instances it was necessary to combine groups over two or more model years. Table 2, Distribution of 75 Vehicle Sample, by Make and Model Year, shows the sample which was ultimately selected and tested. Upon verification of sample fit, participating vehicles were scheduled for testing and maintenance.

Make	No. of Vehicles by Model Year					
	1972	1971	1970	1969	1968	Total
Am.Motors			1	1		2
Buick	1		1	1	1	4
Cadillac	1					1
Chevrolet	2	3	3	3	3	14
Chrysler	1			1		2
Dodge		1	1	1	1	4
Ford	2	4	3	3	3	15
Imperial						0
Lincoln			1			1
Mercury		1	1	1	1	4
Oldsmobile		1	1	1	1	4
Plymouth	1	1	2	1	1	6
Pontiac		1	1	2	2	6
Imports	2	3	3	2	2	12
Total	10	15	18	17	15	75

Table 2, Distribution 75 Vehicle Sample by Make and Model Year

Vehicle Emission Testing
Upon receipt of a test vehicle, an inspection was performed to determine incoming condition with respect to dents, scratches, etc., safety, and integrity of the exhaust system.

After the vehicle was determined to be acceptable, it was moved into the laboratory to begin the specified 12 hour temperature soak prior to testing.

The primary emission test by which vehicles were tested were those specified by 35 Federal Register 219, Part II, November 10, 1970 and as amended in 36 Federal Register 55, March 10, 1971, the 1975 Federal Test Procedure. Modifications to the analytical system were not incorporated and vehicle operation was continued beyond the 505 seconds of the hot transient portion of the test for a full 1372 seconds. Key Mode emission tests were then performed.

Key Mode testing consists of vehicle operation at three conditions described as high cruise, low cruise, and idle. Table 3, Key Mode Operation, indicates vehicle speed and dynamometer loads at which Key Mode tests were conducted by weight categories of vehicles.

Mode	Vehicle Weight (lbs)	Vehicle Speed (Mph)	Dynamometer Load (Hp)
High Cruise	Over 3800	49	29
	2800-3800	45	23
	Under 2800	37	14
Low Cruise	Over 3800	33	11
	2800-3800	30	9
	Under 2800	23	5
Idle	-	-	-

Table 3, Key Mode Operation

1975 Federal Exhaust Emission Tests were conducted according to specified procedures except as noted earlier. Key Mode emission data was obtained by two methods. By the first method a small sample of exhaust gas was pumped from the tailpipe of the vehicle to the analytical system and continuous traces of carbon monoxide (CO), carbon dioxide (CO2), hydrocarbon (HC), and oxides of nitrogen (NO_x) concentrations were recorded. The sampling period started after traces stabilized and was continued for a period of two minutes. Coincident with tailpipe sampling, the constant volume sampler (CVS) sample circuit was energized and a dilute sample of exhaust was collected in the sample bag.

The second method of obtaining data was to subsequently analyze the dilute sample bag for CO, CO_2, HC, and NO_x. Calculations were then performed. Emission data was subsequently reported as shown in Figure 3, Exhaust Emission Data Reported from 1975 FTP and Key Mode Operation. Vehicle maintenance was completed and the sequence of emission testing was repeated on the following day.

Engine Diagnosis, Maintenance and Adjustment

It was not the intent of this study to evaluate Idle or Key Mode inspection as potential diagnostic procedures. Rather, the primary concern was that of establishing direct costs expected to be incurred by the vehicle owner as a result of a fairly extensive inspection and maintenance procedure. Therefore, several methods of diagnosing engine malfunction and maladjustment were initiated.

During Key Mode Operation, engine diagnostic console (oscilloscope) leads were attached to the engine, and ignition patterns were observed by the vehicle operator. Simultaneously, continuous tailpipe exhaust emission traces were observed by the instrument operator. Apparent malfunctions were noted. Upon completion of the first series of emission tests the vehicle was removed from the dynamometer and other inspections were performed. Diagnostic reports from vehicle and instrument operators and diagnostician were combined and a decision was made as to correction of indicated malfunctions. Observations of ignition oscilloscope traces indicated general ignition system condition. In some cases, marginal malfunctions, such as wear on the distributor cam, air/fuel ratio unbalance, low or high spark plug firing voltages, etc., were indicated. However, malfunctions were considered as requiring attention only if severe enough to cause incipient misfire or abnormally high tailpipe emissions as observed on analytical console recorders. Subsequently, direct inspection of engine parts either reinforced or weakened conclusions with regard to suspected malfunctions. Figure 4, Engine Diagnostic Analysis Report, indicates the extent of diagnosis and the areas in which diagnosis was performed. Labor charges to correct malfunctions were estimated based on a Flat Rate Manual for mechanics at a labor rate of $10.00 per hour. Parts costs were determined from retail prices normally charged by a local automotive parts supplier.

With respect to specific items, general guidelines were established and tolerances assigned. In some instances, it was merely necessary to determine if an item was operational or not. This was the situation with respect to the heat riser and PCV valve, and for air injected engines, the air

TEST NUMBER: EC054
CAR NUMBER: 0012

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	FCV	TRANS
1972	FORD	GALAX	8	400	2	10413	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.28	54.23	623.5	3.25	12.38
SIMULATED 1972 COLD		3.63	64.72	644.8	3.20	11.75
SIMULATED 1972 HOT		3.02	46.31	607.4	3.28	12.91
COLD TRANSIENT	GRAMS	15.33	296.16	2212.7	12.77	11.92
COLD STABILIZED	GRAMS	11.86	189.22	2623.6	11.20	11.59
HOT TRANSIENT	GRAMS	10.76	158.13	1931.8	13.43	14.68
HOT STABILIZED	GRAMS	11.63	179.90	2509.0	10.61	12.12

* *

ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2193	0.98	14.23	2247	
		MASS	2.46	33.59	518.90	6.72	15.37
LOW CRUISE	33	CONC	1804	0.51	14.47	894	
		MASS	1.71	9.48	418.44	2.45	20.30
IDLE	0	CONC	2541	2.74	13.33	106	
		MASS	0.70	14.33	113.35	0.10	0.00
COMPOSITE	27	CONC	2215	1.20		713	
		MASS	1.27	18.63		2.01	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Figure 3, Exhaust Emission Data
Reported from 1975 FTP and Key Mode Operation

DIAGNOSTIC ANALYSIS REPORT CAR NO.__________

Function	S	U	Labor	Parts
Air Cleaner				
Heat Riser				
Carb. Choke				
PCV Valve				
Air Pump				
Check Valves				
Gulp Valve				
Air Hoses				
Dist. Cap				
Rotor				
Condensor				
Coil				
Idle Speed				
Spec______ Act.______				
Dwell				
Spec______ Act.______				
Timing				
Spec______ Act.______				
Plug Condition-Idle				
Carb-Idle CO				
Plug Condition-High C.				
Carb-High C. CO				
Plug Condition-Low C.				
Carb-Low C. CO				
Plug Wires				
Points				
Detonation				
Blowby				
Valves				

Figure 4, Engine Diagnostic Analysis Report pump, check valves, gulp valve, and air hoses. In other instances, such as inspection of the air cleaner element, a subjective evaluation was required. Air cleaner elements were scheduled for replacement if either oil soaked or if a moderate tap of the element against a hard surface indicated the existence of excessive dust. Elements that were merely discolored were not replaced. Idle rpm was adjusted if more than 25 rpm out of specifications, ignition timing was changed if more than 2 degrees out, and dwell was adjusted if out of manufacturers tolerance. The distributor cap was inspected and replaced if cracked or if evidence of arcing was noted. Contact points and distributor rotor were inspected and replaced at indication of moderate to severe pitting or mis-alignment. If point replacement was necessary, new condensers were also installed. When mis-fire was noted during Key Mode operation, spark plugs were removed, inspected and replaced if elements showed signs of erosion or if moderate to severe deposits were noted. Spark plugs were replaced in complete sets where inspection indicated malfunction of one or more. Plug wires were generally examined; however, none were found to be defective. Indication of blowby, exhaust valve leakage, and detonation was also evaluated during Key Mode operation. After completion of diagnosis, and maintenance and ignition adjustment, a lean best idle adjustment was performed (minimum fuel at idle for best engine idling characteristics).

In the above discussion, carburetor choke adjustments were not mentioned. Upon receipt of the first few vehicles, it was noted among other things, that choke adjustments (bimetallic spring settings) were leaner than specified by the manufacturer. A casual survey of maintenance organizations in the Denver area revealed that a common complaint from vehicle owners was that of engine flooding during attempted cold weather starting. Generally, the flooding was attributed to choke settings which were too rich for this altitude. As a result, it was fairly common practice to set chokes leaner than specified. Since cold weather starting can be critical in the Colorado environment, it was decided that choke settings would not be altered unless severely out of specification.

A similar situation developed with respect to ignition timing. The same dealerships surveyed in regard to choke settings, reported that ignition timing was normally advanced from factory specified settings by 3 to 6 degrees. Since ignition timing is less critical with regard to engine starting and operation, it was decided that factory specifications for timing would be maintained.

Upon completion of engine diagnosis and maintenance, the vehicle was positioned in the temperature soak area in preparation for final emission tests. Figure 5, Vehicle Test and Maintenance Flow Chart shows the sequence through which a vehicle was routed from the time it was received until it was returned to the owner.

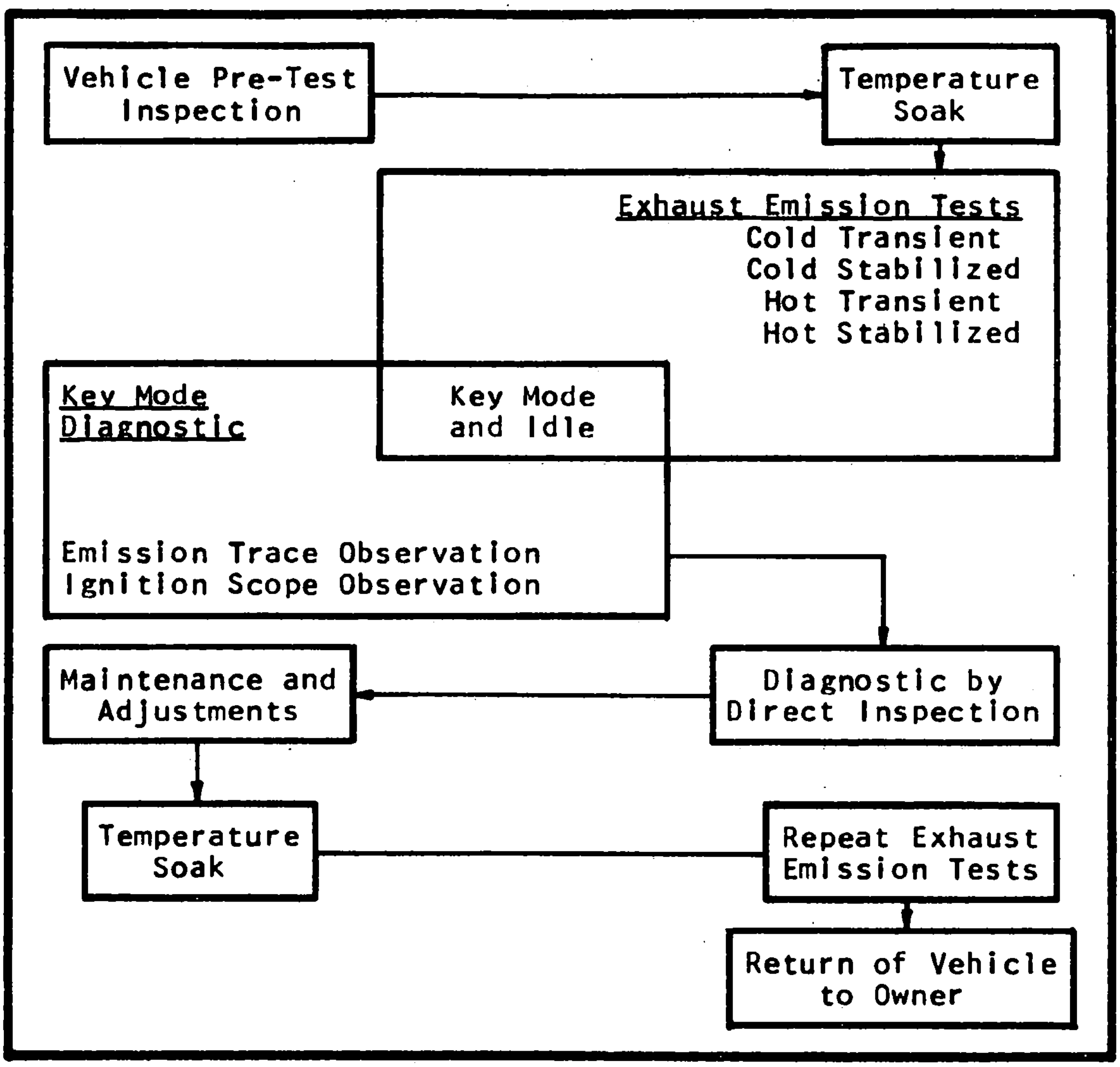

Figure 5, Vehicle Test and Maintenance Flow Chart

Quality Assurance

In the design stages of the study, the obvious requirement for quality data was recognized. As a result, a system of equipment checks was instituted and maintained at prescribed regularity throughout the program.

Initially, all test equipment was inspected and determined to be in good operating condition. Exhaust gas analytical equipment was calibrated using gas blend concentrations as identified by EPA in its Ann Arbor Laboratory. Analytical instrument calibration curves were determined by the least squares method. Propane recovery tests and thermal converter efficiency checks were then performed and the chassis dynamometer was calibrated for speed and load, with load calibration determined by the coast down technique. Propane recovery, converter efficiency and dynamometer calibrations were performed according to the Federal Register referenced earlier.

As testing commenced, propane recovery and thermal converter efficiency checks were performed on a daily basis. Propane recovery tolerances were maintained at plus or minus 2 percent and converter efficiency at 100 percent as nearly as could be determined. Extensive leak checks were also performed on a daily basis. With regard to individual emission tests, the tailpipe sample probe was blocked and the analytic system was leak checked before each test series. Analytical system calibration checks were performed at frequent intervals during individual testing sequences.

Data Reduction and Analysis

Reduction of emission data as reported for the 1975 Federal Test Procedure was accomplished in accordance with procedures specified in the Federal Register (Reference 7). Emission data is reported for CO, CO_2, HC, and NO_x as measured from cold transient, cold stabilized, hot transient, and hot stabilized sample bags. Data from the hot stabilized portion of the test was not used in calculating emissions as reported for the 1975 Federal Test Procedure.

Emission data is also reported for simulated 1972 Federal Test Procedures. Simulated 1972 Cold data was obtained from the sum of individual exhaust gas components in grams from the cold stabilized and cold transient sample bags divided by 7.5 (the length of the driving cycle in miles). Likewise, Simulated 1972 Hot emission data was obtained from the sum of components in the cold stabilized bag and the hot transient bag divided by 7.5. Dynamometer Emission Results Using 1975 Federal Test Procedures by Individual car are presented in the appendix. 1975 Composite, Simulated 1972 Cold, and Simulated 1972 Hot data are reported in grams per mile for HC, CO, CO_2, and NO_x. Fuel economy (MPG) is also reported for each test segment and for composite data as computed by a carbon balance method

(Reference 8). Data for Cold Transient, Cold Stabilized, Hot Transient, and Hot Stabilized segments of the test are reported in total grams for HC, CO, CO_2, and NO_x.

Data from Key Mode Emissions is reported for High Cruise, Low Cruise, and Idle. Composite Key Mode emissions are also reported. Composite Key Mode emissions were determined by a multiple regression analysis of modal data from Key Mode operation explained in Appendix B, Key Mode Regression Analysis Equations. Key mode data is shown as concentration in parts per million (ppm) carbon for HC, ppm for NO_x, and percent for CO and CO_2. Mass data for Key Mode analysis is shown in grams per mile for High and Low Cruise, and grams per minute for Idle. Composite mass Key Mode data is shown in grams per mile.

After emission tests were completed and data was reduced, statistical analysis was performed on emission data developed during the program. Mean, standard deviation, and range calculations of pertinent data were performed by individual vehicle through all cars by year, make, and gross vehicle weight. Correlation factors and estimates of error were established between 1975 FTP and Idle and Key Mode emission data. Effectiveness of emission reduction is shown by the 1975 FTP, and Idle and Key mode, for CO, HC, and NO_x. Determinations were made of the ability of Key Mode and Idle inspection to identify high emitters at 20, 30, and 40 percent rejection levels for CO, HC and NO_x emissions and direct consumer costs were established for engine maintenance and adjustment.

SECTION VI

TEST RESULTS AND DATA ANALYSIS

This section describes the vehicle sample, results of emission tests on sample vehicles in the condition in which they were received, maintenance performed on the sample, and emission results obtained as a result of that maintenance. Also presented are repair cost estimates and statistical analysis of emission data.

Test Sample

Seventy-five 1968 through 1972 model vehicles were selected for testing in proportion to appearance in the population by make and model year. Distribution of the sample was not forced beyond make and model year. It was assumed that additional sample distribution by model, engine, transmission, etc., would occur in a random manner and would therefore satisfy sample requirements.

Figure 6, Distribution of Test Sample by Make and Model Year gives indication of the validity of the sample ultimately tested with respect to the sample required. The first number in parenthesis indicates the desired sample, (1), the second number indicates actual selection, 1. Horizontal lines indicate model year combinations designated by original sample specifications from which vehicle selections could be made.

A furthur indication of the validity of the sample is shown by distribution of transmission and engine types. Sales data published in 1970 (mean sample model year) reports the distribution of transmission sales during 1970 for passenger cars at 90 percent of vehicles sold with automatic transmissions and 10 percent of vehicles sold with manual transmissions, as compared to sample distribution of 87 percent and 13 percent respectively. Likewise, distribution of engine types in 1970 was reported for sales of V-8 engines at 89 percent and 6 and 4 cylinder engines at 11 percent compared with sample distribution of 86 percent and 14 percent respectively for American made passenger cars. In general, the sample was found to be representative of the 1968 through 1972 model passenger car population.

Maintenance

One of the primary considerations of the study was to determine the extent of maintenance required to correct engine malfunction or mis-adjustment in the 75 car sample. Methods by which malfunctions or mis-adjustments were determined were described earlier. With respect to mis-adjustment,

Make	No. of Vehicles By Model Year					
	1972	1971	1970	1969	1968	Total
Am.Motors	(1)	--(1)	--(1)1	(1)1	--(1)	(2) 2
Buick	(1)1	--(1)	(1)1	(1)1	(1)1	(4) 4
Cadillac	(1)1	--(1)	--(1)	--(1)	--(1)	(1) 1
Chevrolet	(2)2	(3)3	(3)3	(3)3	(3)3	(14)14
Chrysler	(1)1	--(1)	--(1)	(1)1	--(1)	(2) 2
Dodge	(1)	--(1)1	(1)1	(1)1	(1)1	(4) 4
Ford	(2)2	(4)4	(3)3	(3)3	(3)3	(15)15
Imperial	(1)	--(1)	--(1)	--(1)	--(1)	
Lincoln	(1)	--(1)	--(1)1	--(1)	--(1)	(1) 1
Mercury	(1)	--(1)1	(1)1	(1)1	(1)1	(4) 4
Oldsmobile	(1)	--(1)1	(1)1	(1)1	(1)1	(4) 4
Plymouth	(1)1	(1)1	(2)2	(1)1	(1)1	(6) 6
Pontiac	(1)	--(1)1	(1)1	(2)2	(2)2	(6) 6
Imports	(2)2	(3)3	(3)3	(2)2	(2)2	(12)12
Total	10	15	18	17	15	(75)75

Figure 6, Distribution of Test Sample by Make and Model Year

tolerances around factory specifications were established for idle rpm, ignition timing, and point dwell. Adjustments were performed if outside tolerances of:

$\pm$ 25 rpm for idle speed
$\pm$ 2 degrees for ignition timing
specifications for point dwell

and choke adjustments were performed if:

choke angles (bi-metallic spring)
were 2 notches lean of specifications
or richer

Go/no-go inspections were performed to determine condition of:

heat riser
PCV valve

and for air injected engines:

air pump
check valve(s)

gulp valve
air hoses

Subjective evaluations determined the condition of:

the air cleaner element

and instrumentation coupled with subjective analysis indicated condition of:

distributor rotor
distributor cap
contact points (and condenser)
spark plugs
ignition wires

In addition, dynamometer operation indicated:

blowby
detonation

All vehicles received lean best idle adjustments.

Table 4, Maintenance Status of 75 Vehicle Sample As Received, shows the general condition of vehicles as they were received and as determined by diagnosis. As indicated by Table 4, idle speed and ignition timing were items most frequently found to be out of specifications. Oddly enough, specifications for idle speed and ignition timing now appear on Emission Specification Labels affixed to late model vehicles at the point of manufacture. It should be noted that incoming status of maintenance and adjustment items were determined singularly, without regard for other adjustments also out of specifications, e.g., ignition timing and point dwell.

Of the 75 vehicles diagnosed with regard to items 1 through 14 in Table 4:
All vehicles required some attention. Furthur:

75 (100%) required attention to 1 or more items
67 (89%) required attention to 2 or more items
48 (64%) required attention to 3 or more items
26 (35%) required attention to 4 or more items
15 (20%) required attention to 5 or more items
2 (3%) required attention to 6 or more items

In addition, one vehicle required major replacement of emission control parts.

Item	Status As Received			
	Satis	Adj Req	Cleaning Req.	Repl Req.
75 Vehicles				
1. Idle Speed	9	66	N/A	N/A
2. Ignition Timing	9	66	N/A	N/A
3. Point Dwell	36	39	N/A	N/A
4. Choke Angle	62	13	N/A	N/A
5. Heat Riser	75	0	0	N/A
6. PCV Valve	74	N/A	0	*1
7. Air Cleaner	54	N/A	**2	19
8. Rotor	74	N/A	N/A	1
9. Dist. Cap	75	N/A	N/A	0
10. Points & Condensor	61	N/A	N/A	14
11. Spark Plugs(sets)	63	N/A	N/A	12
12. Ignition Wires	75	N/A	N/A	0
13. Detonation	75	N/A	N/A	N/A
14. Blowby	74	N/A	N/A	N/A
17 Vehicles				
15. Air Pump	16	N/A	N/A	*1
16. Check Valve	16	N/A	N/A	*1
17. Gulp Valve	16	N/A	N/A	*1
18. Air Hoses	16	N/A	N/A	*1

* Emission Controls Removed ** Oil Bath

Table 4, Maintenance Status of 75 Vehicle Sample As Received

Maintenance Costs

In the determination of maintenance costs, the labor rate was assumed to be $10.00 per hour (typical local rates are $10.00 to $12.00 per hour). To fix charges with respect to labor for engine maintenance, a Mechanics Flat Rate Manual was referenced and charges were estimated in accordance with listed flat-rate schedules. Independent estimates were determined for each vehicle. Estimates do not include labor incurred for diagnostic procedures. However, it is estimated that diagnosis by direct inspection was completed in less than 0.2 hours at a cost (base, $10 per hour) of less than $2.00 per vehicle. Total costs incurred in repair and adjustment for the 75 car sample is:

Labor	$611.00
Parts	$272.45
Total	$883.45

and the mean cost per vehicle is:

Labor	$ 8.15
Parts	$ 3.63
Total	$11.78

The initial specifications of the program fixed a nominal maximum cost to repair each vehicle at $25.00. However, during actual performance of the maintenance phase of the study, several vehicles were found to require repairs in excess of $25.00. With respect to three of these vehicles, replacement of spark plugs was required in addition to other maintenance. In referencing the flat rate manual, it was noted that labor allocated for spark plug replacement appeared to be unusually high due to interference from an existing air conditioning compressor or similar item. In consideration of the general condition of each engine in question, it was concluded that neither spark plugs nor other items as a group could be ignored. Cost estimates include charges for complete maintenance on the three vehicles. Table 5, Distribution of Maintenance Costs - 75 Vehicles, shows maintenance cost distribution for the sample in $5.00 increments.

Vehicles (No)	Vehicles (%)	Vehicles (Cum%)	Cost Range	Labor Cost	Parts Cost	Total Cost	Mean Cost
1	1	1	40.00-44.99	24.00	16.13	40.13	40.13
0	0	1	35.00-39.99	0	0	0	0
3	4	5	30.00-34.99	56.00	44.22	100.22	33.40
5	7	12	25.00-29.99	82.00	52.15	134.15	26.82
5	7	19	20.00-24.99	59.00	56.40	115.40	23.08
9	12	31	15.00-19.99	102.00	49.50	151.50	16.83
9	12	43	10.00-14.99	70.00	38.70	108.70	12.08
33	44	87	5.00- 9.99	190.00	15.35	205.35	6.22
10	13	100	0 - 4.99	28.00	0	28.00	2.80
75	100			611.00	272.45	883.45	11.78

Table 5, Distribution of Maintenance Costs - 75 Vehicles

Fuel Economy

As mentioned earlier, fuel consumption data was calculated for each segment of the test. Mean miles per gallon (mpg) as calculated from the 1975 FTP emission data is:

Before Maintenance	15.19 mpg
After Maintenance	15.27 mpg

which represents a mean increase in fuel mileage of 0.08 miles per gallon. Assuming an annual mileage accumulation on a per vehicle basis of 12,000 miles and fuel cost at $0.35 per gallon, fuel costs would decrease from $276.50 per year to $275.05 per year or $1.45, an insignificant amount.

Emission Reduction

Emission data is reported for the 1975 FTP, Key Mode and Idle test procedures. Both mass (grams per mile) and concentration data is reported for Key Mode procedure. Concentration data is reported for the Idle test. The 1975 Federal Test Procedure is considered as the primary standard. The sample was tested in two phases of the program. The first series of tests was conducted on the vehicles in the condition in which they were delivered to the laboratory (before). The second series of tests was conducted after maintenance and adjustments were performed (after). Table 6, 75 Car Sample Emission Data Before and After Maintenance, shows emission levels measured by each test procedure and indicated emission reduction. Data reported for Key Mode is composite data developed from multiple regression analysis. Mass emissions are indicated in grams per mile (g/m) for CO, HC, and NO_x. Emissions by concentration (conc) are in mole percent (%) for CO, and parts per million (ppm) for HC and NO_x. HC ppm is in terms of parts per million carbon as measured by a flame-ionization detector.

Test Procedure	Mean Emission Levels		Reduction	
	HC Before	HC After	Absolute	Percent
1975 FTP (Mass)	5.70g/m	4.82g/m	0.88g/m	15.44
Key Mode (Mass)	1.78g/m	1.51g/m	0.27g/m	15.17
Key Mode (Conc)	3474ppm	3048ppm	426ppm	12.30
Idle (Conc)	5493ppm	3788ppm	1705ppm	31.04
	CO Before	CO After		
1975 FTP (Mass)	71.79g/m	63.68g/m	8.10g/m	11.28
Key Mode (Mass)	22.16g/m	19.81g/m	2.35g/m	10.60
Key Mode (Conc)	1.92%	1.74%	0.18%	9.40
Idle (Conc)	3.51%	2.28%	1.23%	35.04
	NO_x Before	NO_x After		
1975 FTP (Mass)	3.07g/m	3.03g/m	0.04g/m	1.30
Key Mode (Mass)	2.24g/m	2.16g/m	0.08g/m	3.57
Key Mode (Conc)	770ppm	766ppm	4ppm	0.05
Idle (Conc)	97ppm	131ppm	-34ppm	-35.05

Table 6, 75 Car Emission Data Before and After Maintenance

Analyses of Emission Data

Test data is presented in detail in the appendix to the study. A statistical analysis was performed relative to emission data on tests before maintenance and on tests after maintenance. Table 7, Analysis of 1975 FTP Emission Data, shows the results of that analysis. Acceptance limits were established at 99 percent for T-tests. On this basis, HC and CO emissions showed significant improvement after maintenance. NO_x remained unchanged. Appendix D shows a similar analysis of Key Mode Mass data, Key Mode Concentration data and Idle Concentration data. T-tests were not performed on Key Mode Mass, Key Mode Concentration and Idle Concentration data since 1975 FTP data is considered the standard.

Analysis	HC Before (g/m)	HC After (g/m)	Improvement (g/m)	Improvement (%)
Mean	5.70	4.82	0.88	15.40
Standard Deviation	3.88	2.39		
Maximum	30.14	17.02		
Minimum	1.59	1.33		
Range	28.55	15.69		
Computed T Value	-2.33			
Analysis	**CO Before (g/m)**	**CO After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	71.79	63.68	8.10	11.30
Standard Deviation	33.56	30.99		
Maximum	194.24	197.00		
Minimum	22.47	19.08		
Range	171.77	177.91		
Computed T Value	-3.67			
Analysis	**NO_x Before (g/m)**	**NO_x After (g/m)**	**Improvement (g/m)**	**Improvement (%)**
Mean	3.07	3.03	0.04	1.30
Standard Deviation	1.09	1.00		
Maximum	6.60	5.50		
Minimum	1.23	1.42		
Range	5.37	4.09		
Computed T Value	-0.42			

For a decrease (single-ended test), $t_{0.99} = -2.326$

given d.f $= \infty$ (Reference 9)

Table 7, Analysis of 1975 FTP Emission Data

At this point it should be noted that the decrease in CO emission for the sample was not accompanied by an increase in NO_x emission as would normally be expected. A change in ignition timing is known to have significant effects on emissions of NO_x. It is believed that NO_x emissions did not significantly change partially due to this phenomenon. Maintenance organizations reported the practice of advancing ignition timing from specifications. In consideration of the potential significance of reported practices, engine data was examined and mean basic timing was found to be advanced 2.3 degrees from specifications. All vehicles were set to specifications prior to re-testing, or in effect were retarded a mean 2.3 degrees. Retarded ignition timing is known to reduce emissions of NO_x.

Good agreement (see Appendix D) is indicated between 1975 FTP data, Key Mode Mass data, and Key Mode Concentration data in terms of indicating improvement in emissions. In making this comparison, however, it should be remembered that composite Key Mode mass and concentration data were established by a best fit multiple regression analysis to 1975 FTP data. As furthur indicated by the above referenced tables, emission reduction predicted by idle concentration data relative to 1975 FTP results is relatively poor.

Identification of High Emitters, Inspection Correlations

One of the primary purposes of the study is to establish correlations between the 1975 Federal Test Procedure and Key Mode and Idle Inspection. Perhaps of equal importance is to determine the relative effectiveness of Key Mode and Idle inspection in identifying high emitters. It can be assumed that the better the correlation between 1975 FTP and an inspection procedure, the greater the ability of the inspection procedure to identify emissions at any level.

With respect to Key Mode data, two different regression analyses were performed for HC, CO and NO_x for both CKMC and CKMM. While details are given in Appendix B, the first regression analysis provided a least-squares fit of 1975 FTP data to the three modes of the Key Mode test. This analysis resulted in constants by which each mode was multiplied to obtain a Composite value for the Key Mode.

The actual Composite Key Mode values were computed using these constants. These composite values were then compared with 1975 FTP data using a second regression analysis. The results of this second analysis are presented in Table 8, 1975 FTP, and CKMC and IC Correlation. Although several correlations were determined and presented in the appendix, only CKMC and IC are presented here.

Analysis	CKMC HC	CKMC CO	CKMC NO_x	IC HC	IC CO	IC NO_x
Intercept	-0.325	29.254	0.768	3.058	47.249	2.770
Regression Coefficient	0.002	21.050	0.003	0.000	7.068	0.002
Std Error of Reg Coef	0.000	1.566	0.000	0.000	0.966	0.009
Computed T-Value	20.480	13.445	15.531	11.520	7.320	2.657
Correlation Coefficient	0.860	0.742	0.787	0.688	0.516	0.213
Std Error of Estimate	1.661	21.846	0.645	2.362	27.900	1.022

Table 8, 1975 FTP, and CKMC and IC Correlation

The correlation coefficient is a statistical measurement which is computed from the correlations between pairs of values. For 1 to 1 correlation (that is, where each value of x predicts exactly the measured value of y, and that value of y predicts exactly the measured value of x), the value of the correlation coefficient equals one (R=1.000). If a value of x predicts a strange value of y and that value of y predicts a value of x which is radically different than the original x, then the value of the correlation coefficient would be close to zero (e.g. R=0.010). Correlation coefficients of less than 0.700 are often considered to be poor, with values nearer 1.00 considered to be better.

Emission data from all tests, both before and after maintenance were combined to determine correlations. Based on the analysis presented in Table 8, it can be seen that greater correlation exists between 1975 FTP and CKMC emissions for HC, CO and NO_x than between 1975 FTP and IC emissions. It can therefore be assumed that the ability of Composite Key Mode Concentration data to identify high emitters is greater than that of Idle Concentration. With emission data generated by this study, this assumption can be tested.

In order to empirically evaluate the ability of CKMC and IC to identify high HC and CO emissions, 1975 FTP results were sorted and identified by car number. Sorting was accomplished for both HC and CO from highest to lowest emissions.

From Table 9, Relative Ranking of Highest HC Emitting Vehicles, the effectiveness of CKMC and IC in identifying high HC emissions can be evaluated. Similarly, relative ability to identify highest CO emitting vehicles can be evaluated from Table 10. Ranking is from high to low as determined independently for HC and CO emissions as measured by the 1975 FTP.

1975 FTP			CKMC		IC	
Ranking	CarNo	HC(g/m)	Ranking	HC(ppmC)	Ranking	HC(ppmC)
1	72	30.14	1	14,079	2	29,965
2	51	16.52	2	9,255	8	23,638
3	*71	15.56	8	8,009	5	22,595
5%—4	6	12.13	7	7,350	1	17,589
5	*68	12.02	5	7,206	7	17,206
6	* 8	9.21	10	5,690	6	13,903
7	*11	8.95	3	5,493	x	11,331
10%—8	53	8.28	6	5,462	x	10,775
9	32	7.97	x	4,456	10	10,775
10	73	7.92	x	4,430	x	9,036
11	*42	7.63	x	4,147	15	8,863
12	49	6.74	14	4,114	x	8,689
13	59	6.74	x	3,997	x	7,820
14	*63	6.66	12	3,973	3	7,681
20%—15	18	6.54	x	3,954	4	7,646

* vehicles in highest 20% CO also
x indicates greater than 15 in ranking

Table 9, Relative Ranking of Highest HC Emitting Vehicles

With reference to the ability of CKMC and IC to identify high emitters; for the highest emitters of HC at 20% rejection:

CKMC identified 10 of 15 vehicles by HC
IC identified 10 of 15 vehicles by HC

for the highest emitters of HC at 10% rejection:

CKMC identified 7 of 8 vehicles by HC
IC identified 6 of 8 vehicles by HC

for the highest emitters of HC at 5% rejection:

CKMC identified 2 of 4 vehicles by HC
IC identified 2 of 4 vehicles by HC

It should be noted that the correlation coefficient for IC versus 1975 FTP is relatively high for identification of HC emissions by Idle Concentration HC inspection. It would therefore be expected that emission identification by this procedure would be reasonably good.

	1975 FTP			CKMC		IC	
	Ranking	CarNo	CO(g/m)	Ranking	CO(mol%)	Ranking	CO(mol%)
	1	*71	194.2	3	5.54	14	8.47
	2	* 8	167.5	1	4.97	x	8.47
|	3	67	144.0	x	4.64	x	8.47
5%	4	58	125.9	x	4.63	8	8.47
	5	*42	121.4	7	4.60	2	8.37
	6	20	119.8	14	4.37	x	7.39
|	7	*63	110.3	2	3.90	x	7.13
10%	8	*68	109.8	13	3.38	x	7.07
	9	10	106.4	4	3.18	3	6.79
	10	12	105.2	x	3.18	x	6.41
	11	75	103.6	9	3.13	10	6.41
	12	37	103.0	6	2.88	x	6.30
	13	1	102.2	x	2.81	4	6.07
|	14	*11	100.7	8	2.79	9	5.93
20%	15	26	95.2	x	2.75	x	5.68

* vehicles in highest 20% HC also
x indicates greater than 15 in ranking

Table 10, Relative Ranking of Highest CO Emitting Vehicles

For the highest emitters of CO at 20% rejection:

CKMC identified 10 of 15 vehicles by CO
IC identified 7 of 15 vehicles by CO

for the highest emitters of CO at 10% rejection:

CKMC identified 4 of 8 vehicles by CO
IC identified 2 of 8 vehicles by CO

for the highest emitters of CO at 5% rejection:

CKMC identified 2 of 4 vehicles by CO
IC identified 0 of 4 vehicles by CO

The correlation coefficient is considerably lower for IC identification of CO emissions by CO inspection than for a similar identification by CKMC inspection. This is evidenced by the observation just described.

High HC emissions do not necessarily coincide with high CO emissions. However, six vehicles appear in the highest 20% by both HC and CO sorting. With reference to the appearance of the six vehicles in the highest 20% for both HC and CO ranked groups:

CKMC identified the same 5 of 6 vehicles common to both groups, but failed to identify one as being in either group.

IC identified the same 3 of 6 vehicles common to both groups, but failed to identify 3 by HC inspection and 2 by CO inspection as being in either group.

Therefore, based on correlation coefficient, the assumption that CKMC inspection has greater ability to identify high emitting vehicles than IC, is supported.

<u>Emission Reduction by Rejection Rates</u>
Rejection rates were established at 20, 30, and 40% levels for HC and CO from tests conducted before maintenance. Rejection rates were established for Composite Key Mode Concentration (CKMC) and Idle Concentration (IC) testing. Mean emission levels for the total sample were then determined for each rejection rate using 1975 FTP data as the standard measure. Reductions were computed assuming vehicles rejected were subjected to maintenance and remaining vehicles were not. Table 11, Mean 1975 FTP Emission Levels at 20, 30, and 40% Rejection Rates for CKMC, IC and 1975 FTP indicates emission levels by each procedure.

From data shown in Table 11, maximum reduction achieved for HC emissions is by 1975 FTP at the 40% HC rejection level. Idle Concentration (IC) appears to be next most effective at a 40% HC rejection rate.

With regard to CO, maximum reduction was achieved by IC at a 40% rejection rate, followed by the 1975 FTP at the 40% CO rejection rate.

Basis	Mean Emissions by 1975 FTP		
	HC(g/m)	CO(g/m)	NO_x(g/m)
1975 FTP (Before)	5.70	71.79	3.07
CKMC 20% HC Rejection	5.17	69.89	3.04
CKMC 30% HC Rejection	5.02	68.46	3.04
CKMC 40% HC Rejection	4.99	68.37	3.00
1975 FTP (Before)	5.70	71.79	3.07
CKMC 20% CO Rejection	5.46	69.30	3.08
CKMC 30% CO Rejection	5.46	67.87	3.10
CKMC 40% CO Rejection	5.35	66.71	3.07
1975 FTP (Before)	5.70	71.79	3.07
IC 20% HC Rejection	5.04	69.42	3.05
IC 30% HC Rejection	4.96	67.16	3.04
IC 40% HC Rejection	4.92	66.00	3.02
1975 FTP (Before)	5.70	71.79	3.07
IC 20% CO Rejection	5.44	66.92	3.04
IC 30% CO Rejection	5.28	64.89	3.01
IC 40% CO Rejection	4.88	64.48	2.99
1975 FTP (Before)	5.70	71.79	3.07
'75 FTP 20% HC Rejection	4.99	69.09	3.07
'75 FTP 30% HC Rejection	4.89	67.54	3.05
'75 FTP 40% HC Rejection	4.86	67.47	3.04
1975 FTP (Before)	5.70	71.79	3.07
'75 FTP 20% CO Rejection	5.46	67.25	3.08
'75 FTP 30% CO Rejection	5.35	65.61	3.13
'75 FTP 40% CO Rejection	4.94	64.88	3.11

Table 11, Mean 1975 FTP Emission Levels at 20, 30 and 40% Rejection Rates for CKMC, IC and 1975 FTP

Figure 7, 1975 FTP Hydrocarbon and Carbon Monoxide Levels Determined by HC and CO Rejection Rates, is a plot of data presented in Table 11. Figure 7 furthur illustrates that Inspection by Idle Concentration is the more effective method of inspection in achieving reductions of both CO and HC.

It should be pointed out that emission reduction by emission inspection is a concept and not a means to achieve emission reduction in itself. Further, discussion relative to emission reduction by inspection is not intended to imply

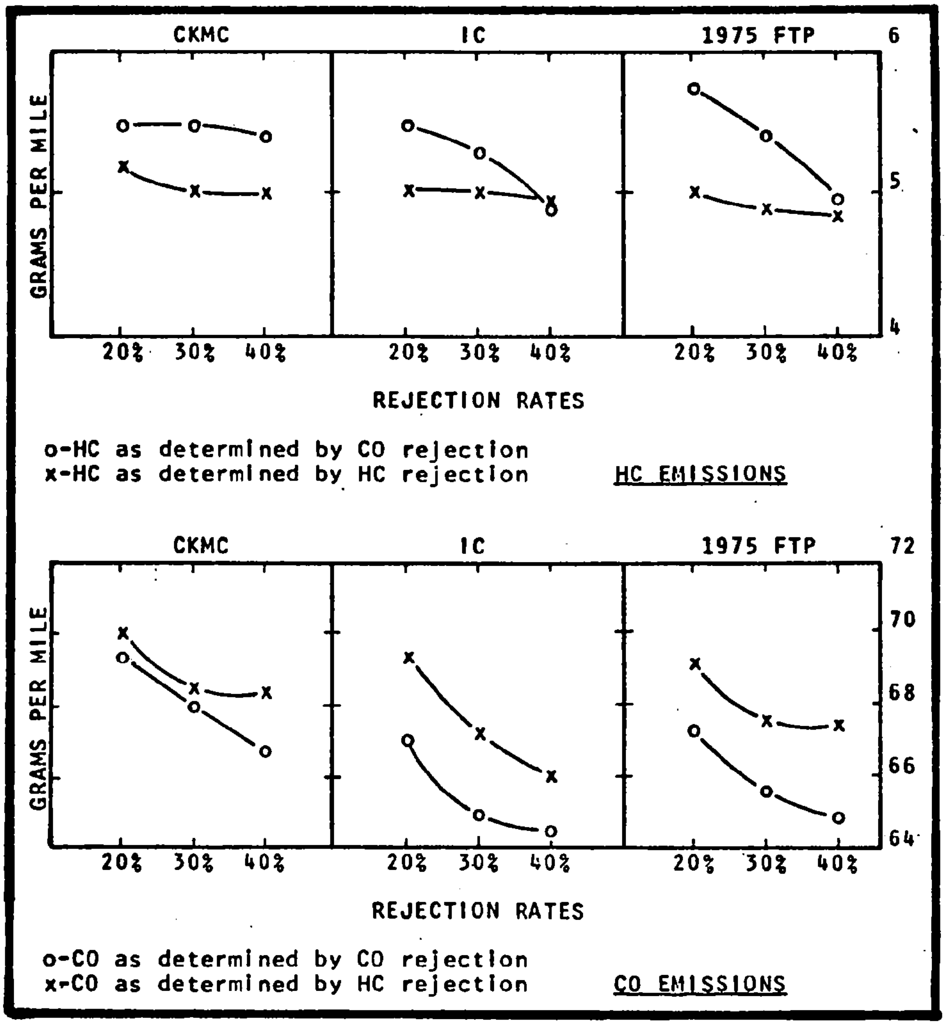

Figure 7, 1975 FTP Hydrocarbon and Carbon Monoxide Emissions Determined by HC and CO Rejection Rates that an effective inspection procedure is an effective diagnostic procedure. It should be remembered that engine diagnosis was accomplished by relatively extensive efforts. The inspection concept is intended to serve only as a means of rejecting high emitting vehicles and to indicate a requirement for corrective maintenance.

Cost Effectiveness

Cost effectiveness data is determined solely on the basis of reductions in grams per mile for HC and CO and direct maintenance cost. Costs of inspection equipment and diagnosis are not considered. Cost effectiveness is determined by the equation:

$$CE=\frac{\text{vehicle fraction rejected X total reduction for fraction}}{\text{total costs for fraction}}$$

Cost effectiveness as determined from the equation was plotted for Composite Key Mode Concentration inspection by HC and CO rejection. Plots are shown in Appendix C. Table 12, Cost Effectiveness by Rejection Rates was derived from the plots and shows cost effectiveness at 10, 20, 30, 40 and 50% rejection rates.

Rejection Rate(%)	Cost Effectiveness by Rejection Basis							
	CKMC				IC			
	HC Rejection		CO Rejection		HC Rejection		CO Rejection	
	HC	CO	HC	CO	HC	CO	HC	CO
10	0.028	0.11	0.010	0.12	0.042	0.12	0.016	0.26
20	0.042	0.19	0.018	0.24	0.052	0.22	0.032	0.46
30	0.050	0.26	0.027	0.36	0.058	0.33	0.048	0.56
40	0.056	0.32	0.036	0.47	0.062	0.42	0.063	0.65
50	0.061	0.39	0.045	0.60	0.065	0.49	0.074	0.71

Table 12, Cost Effectiveness by Rejection Rates

From Table 12, it can be seen:

Inspection by CKMC and rejection by HC is more cost effective in reducing HC than inspection by CKMC and rejection by CO.

Inspection by CKMC and rejection by CO is more cost effective in reducing CO than inspection by CKMC and rejection by HC.

Inspection by IC and rejection by HC is more cost effective in reducing HC than inspection by IC and rejection by CO.

Inspection by IC and rejection by CO is more cost effective in reducing CO than inspection by IC and rejection by HC.

Further:

Inspection by IC and rejection by HC is more cost effective in reducing HC than inspection by CKMC and rejection by HC.

Inspection by IC and rejection by CO is more cost effective in reducing CO than inspection by CKMC and rejection by CO.

Therefore:

Inspection by IC is more cost effective.

The conclusion that inspection by IC is more cost effective than inspection by CKMC is based on the assumption that the emission reducing tactic to be employed is rejection of both HC and CO at equal rates. To more clearly demonstrate cost effectiveness differences which may be expected between IC and CKMC inspection and rejection, the following is presented:

At, say, a 20% rejection rate, IC by HC rejection is more cost effective in reducing HC than CKMC by a factor of 1.24

At a 20% rejection rate, IC by CO rejection is more cost effective in reducing HC than CKMC by a factor of 1.78

At a 20% rejection rate, IC by HC rejection is more cost effective in reducing CO than CKMC by a factor of 1.16

At a 20% rejection rate, IC by CO rejection is more cost effective in reducing CO than CKMC by a factor of 1.92

Rejection Rate (%)	Comparison Factors - CE IC/CE CKMC			
	HC Rejection		CO Rejection	
	HC	CO	HC	CO
10	1.50	1.09	1.60	2.17
20	1.24	1.16	1.78	1.92
30	1.16	1.27	1.78	1.56
40	1.11	1.32	1.75	1.38
50	1.07	1.26	1.64	1.18

Table 13, Cost Effectiveness Comparison of IC and CKMC Inspection and Rejection

Table 13, Cost Effectiveness Comparison of IC and CKMC Inspection and Rejection, shows the relative cost effectiveness benefit of IC inspection over CKMC inspection.

SECTION VIII

ACKNOWLEDGEMENTS

Mr. D. Douglas Graham of Spitzer Electrical Co. is acknowledged for his valuable assistance.

Clayton Manufacturing Company is acknowledged with respect for its efforts in the design of the key mode cycle.

The support of the program by the Environmental Protection Agency, Region VIII is acknowledged. A sincere thanks is especially directed to Mr. Dale Wells, Project Director, for his diligent efforts and valuable assistance.

A very special acknowledgement and thanks to the members of the staff of Automotive Testing Laboratories, Inc. for the expert and efficient manner in which they performed their assignments. Thanks to Mr. W.J. Becktel, Jr., Mr. A.J. Fugleberg, Mr. S.W. Sargent, and Ms. G.A. Cunningham.

SECTION VIII

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2. Northop Corporation, in association with Olson Laboratories, Inc., "Mandatory Vehicle Emission Inspection and Maintenance," State of California, Air Resources Board, Contract ARB1522 (December 10, 1971).

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SECTION IX

GLOSSARY

Propane Recovery - A method of checking the constant volume sampler system whereby a known quantity of propane is released into the system and compared with the quantity of propane recovered in the sample bag.

Thermal Converter Efficiency - A method to determine the rate of conversion of NO to NO_x in the thermal converter of a chemiluminescent NO_x analyzer.

Coast Down Technique - A method to determine frictional power losses in a chassis dynamometer whereby actual loading can be more accurately calibrated.

APPENDICES

SECTION X

APPENDICES

APPENDIX A

TEST EQUIPMENT

Test results for the study were based on inferences from electronic and mechanical test equipment and instrumentation. The overall accuracy of the study is therefore limited by design, quality and calibration of test equipment. In the design of this study, the Federal Register was considered to be the standard by which testing techniques and quality and accuracy of instrumentation were established. In order that test results may be clearly understood, the following list of equipment used in the conduct of the study is provided.

Test Equipment

Clayton Chassis Dynamometer, Model CT-200, with variable inertia flywheel assembly and low torque bridge and power meter

Marquette Engine Diagnosis Console, Model M-200

Automotive Environmental Systems, Inc. Constant Volume Sampler

Beckman Instruments, Model 315A, Carbon Monoxide and Carbon Dioxide Analyzers

Beckman Instruments, Model 400, Hydrocarbon Flame-Ionization Detector

Thermo-Electron, Chemiluminescent NO, NO_x Analyzer

Texas Instruments, Inc., Servo-Riter II Strip Chart Recorders

Calibration Gas Standards analyzed by the Environmental Protection Agency, Office of Air Programs

APPENDIX B

KEY MODE REGRESSION ANALYSIS AND SCATTERGRAMS OF EMISSION INSPECTION CORRELATIONS

The Key Mode test as run for this program resulted in six values each for emissions of HC, CO and NO_x:

1. High Cruise Concentration
2. High Cruise Mass (gm/mi)
3. Low Cruise Concentration
4. Low Cruise Mass (gm/mi)
5. Idle Concentration
6. Idle Mass (gm/min)

It was apparent that these results should be combined to comprise two composite results from the Key Mode...one for concentration and one for mass. We elected to perform a multiple regression analysis upon the data to determine a least-squares best fit for emission results from the 1975 Federal Test Procedure. The following results were obtained:

Key mode used diff cycles

<u>CONCENTRATION</u>

Hydrocarbons

Composite = -0.30931 + 0.00121 (Hi. Cr.)

+ 0.00018 (Lo. Cr.) + 0.00031 (Idle)

Carbon Monoxide

Composite = 28.8 + 13.02 (Hi. Cr.) + 2.14 (Lo. Cr.)

+ 4.58 (Idle)

Oxides of Nitrogen

Composite = 0.752 + 0.00055 (Hi. Cr.)

+ 0.00081 (Lo. Cr.) + 0.00158 (Idle)

<u>MASS</u>

Hydrocarbons

Composite = 1.247 + 0.657 (Hi. Cr.) + 0.217 (Lo. Cr.)

+ 1.567 (Idle)

Carbon Monoxide

Composite = 23.7 + 0.527 (Hi. Cr.) + 0.230 (Lo. Cr.)

+ 1.342 (Idle)

Oxides of Nitrogen

$$\text{Composite} = 0.789 + 0.235\ (\text{Hi. Cr.}) + 0.173\ (\text{Lo. Cr.}) + 0.623\ (\text{Idle})$$

We derived a great deal of satisfaction when by these operations, the following correlation coefficients were obtained:

<u>CONCENTRATION</u>

Hydrocarbons	R = 0.860
Carbon Monoxide	R = 0.743
Oxides of Nitrogen	R = 0.788

<u>MASS</u>

Hydrocarbons	R = 0.891
Carbon Monoxide	R = 0.815
Oxides of Nitrogen	R = 0.824

We felt that the composites obtained by this method were difficult to visualize for two reasons: 1.) The concentration data has values which look like mass data, and 2.) The mass data has multipliers and constants which result in numbers that don't look like "averages."

We elected to change the factors of the equations such that the sum of the multipliers would be 1.000 This would result in composite concentration values that look like concentrations and both sets of data would look more like "averages." The resulting equations:

<u>CONCENTRATION</u>

Hydrocarbons

$$\text{Composite} = 0.712\ (\text{Hi. Cr.}) + 0.106\ (\text{Lo. Cr.}) + 0.182\ (\text{Idle})$$

Carbon Monoxide

$$\text{Composite} = 0.659\ (\text{Hi. Cr.}) + 0.109\ (\text{Lo. Cr.}) + 0.232\ (\text{Idle})$$

Oxides of Nitrogen

$$\text{Composite} = 0.187\ (\text{Hi. Cr.}) + 0.276\ (\text{Lo. Cr.}) + 0.537\ (\text{Idle})$$

MASS

Hydrocarbons
Composite = 0.269 (Hi. Cr.) + 0.089 (Lo. Cr.)

+ 0.642 (Idle)

Carbon Monoxide
Composite = 0.251 (Hi. Cr.) + 0.110 (Lo. Cr.)

+ 0.639 (Idle)

Oxides of Nitrogen
Composite = 0.228 (Hi. Cr.) + 0.169 (Lo. Cr.)

+ 0.603 (Idle)

were used to compute the composite figures in the program. Thus, the value presented for hydrocarbon CKMC is the value computed by the first equation following the word CONCENTRATION in the above set, and the oxides of nitrogen value for CKMM is found using the last equation presented immediately above.

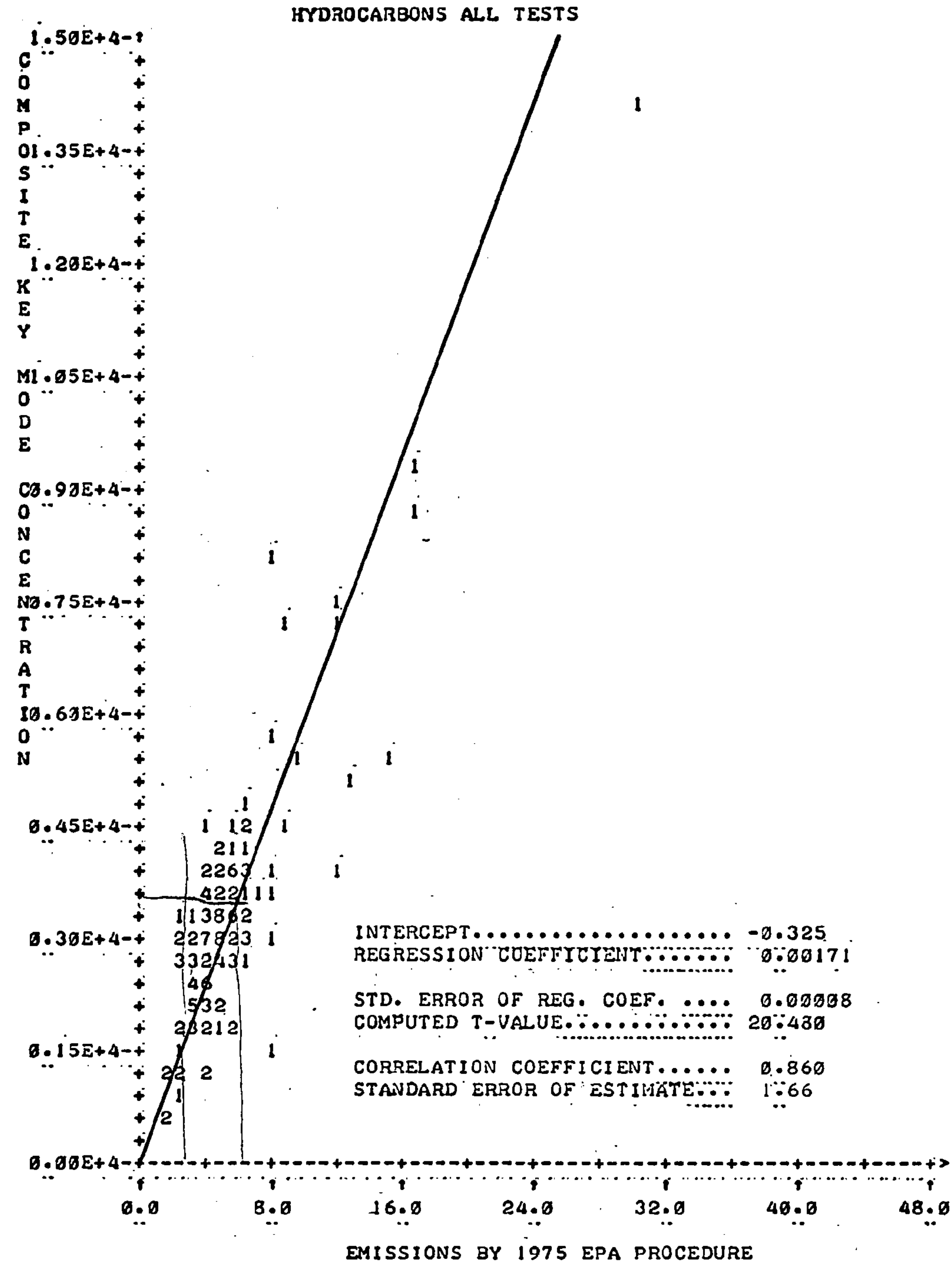
The following pages of this appendix present scattergrams of emission data measured by two different methods. The intent of this work is to present data in a format such that the reader can visually inspect relationships existing between emission test results.

For the data in which one axis is 1975 EPA Test Procedure, a "line of best fit" has been shown, and mathematical information concerning that line is included on the scattergram. This line represents 1975 EPA Test Procedure values which would be predicted from the other variable. The equation represented by the line is one of the following family:

'75 EPA Value = Intercept + Reg. Coef. X (Value of

other variable)

Statistical information concerning the Standard Errror of an Estimate, the Standard Error of the Regression Coefficient, a computed value for T (with 74 Degrees of Freedom) and the Correlation Coefficient is also presented.



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 1, Scattergram, 1975 FTP vs CKMC for HC

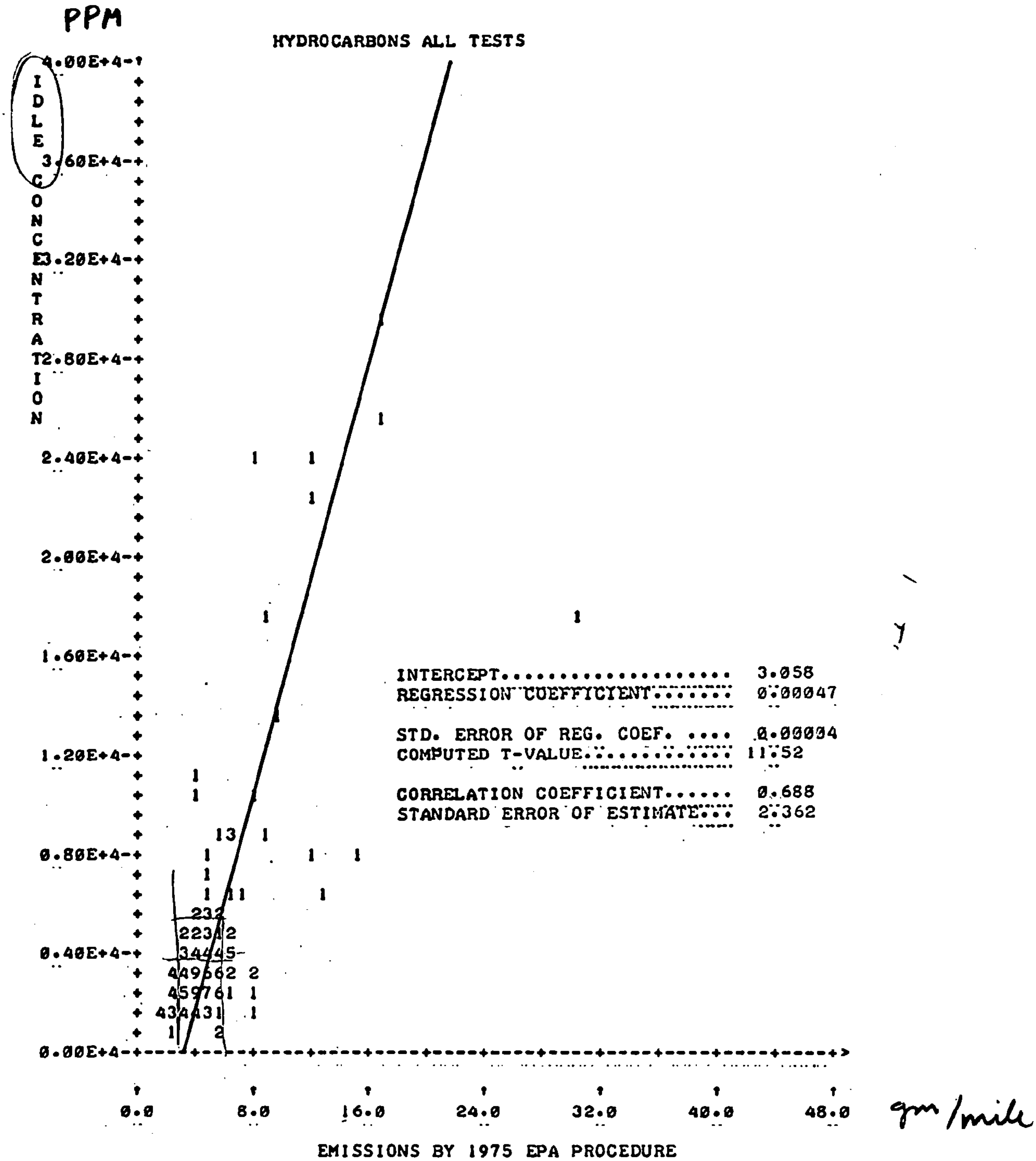

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Table 2, Scattergram, 1975 FTP vs IC for HC

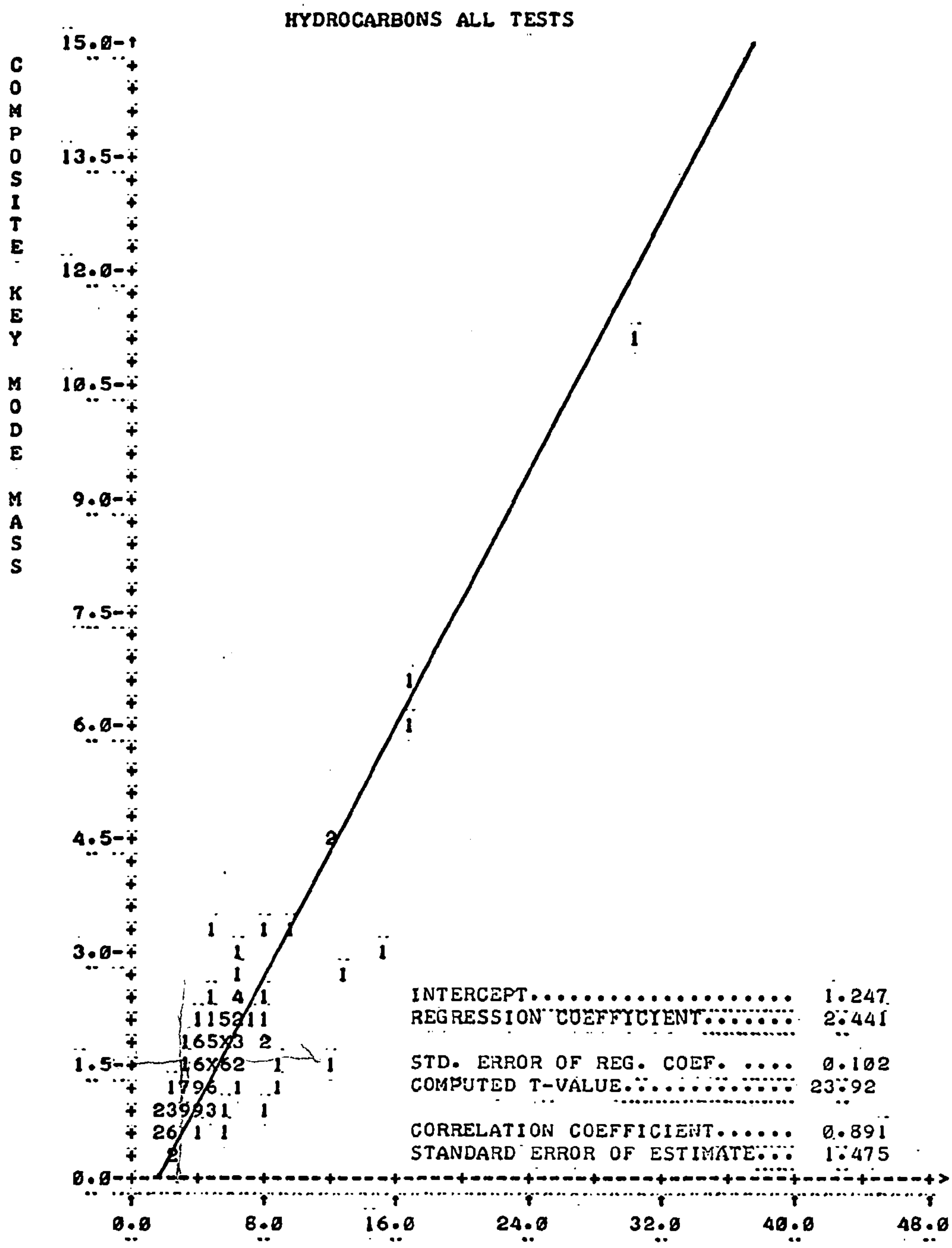

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Table 3, Scattergram, 1975 FTP vs CKMM for HC

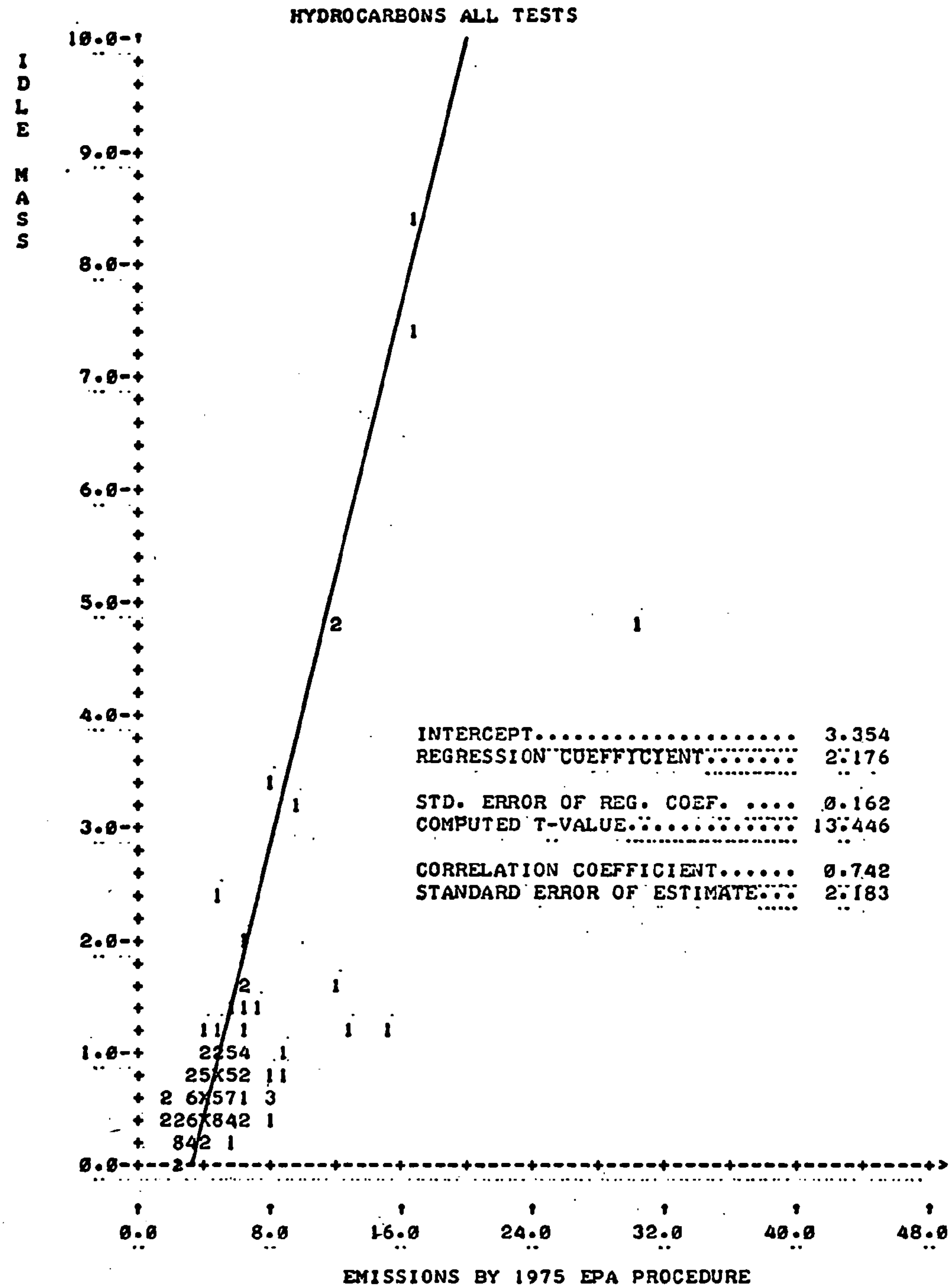

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Table 4, Scattergram, 1975 FTP vs IM for HC

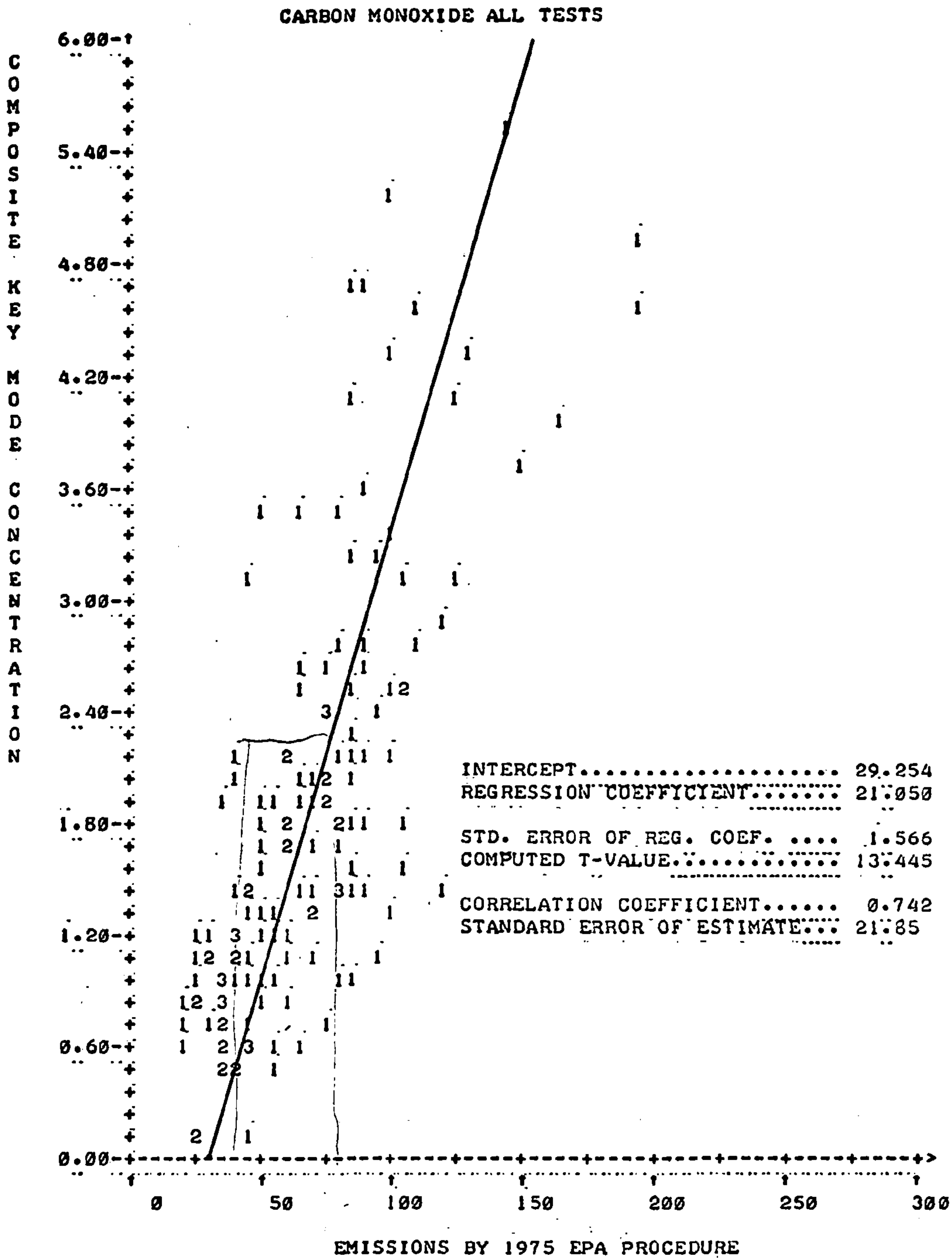

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Table 5, Scattergram, 1975 FTP vs CKMC for CO

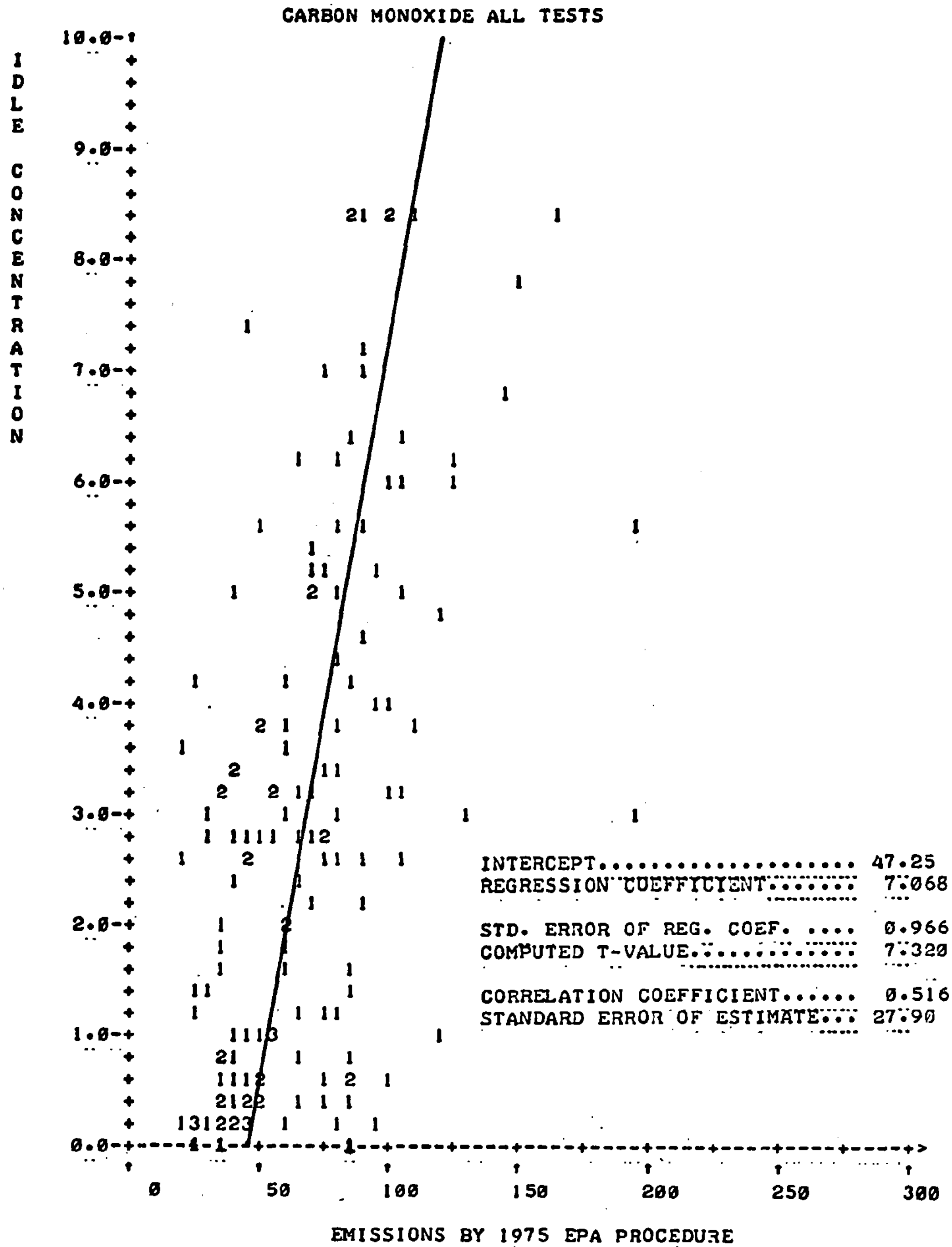

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Table 6, Scattergram, 1975 FTP vs IC for CO

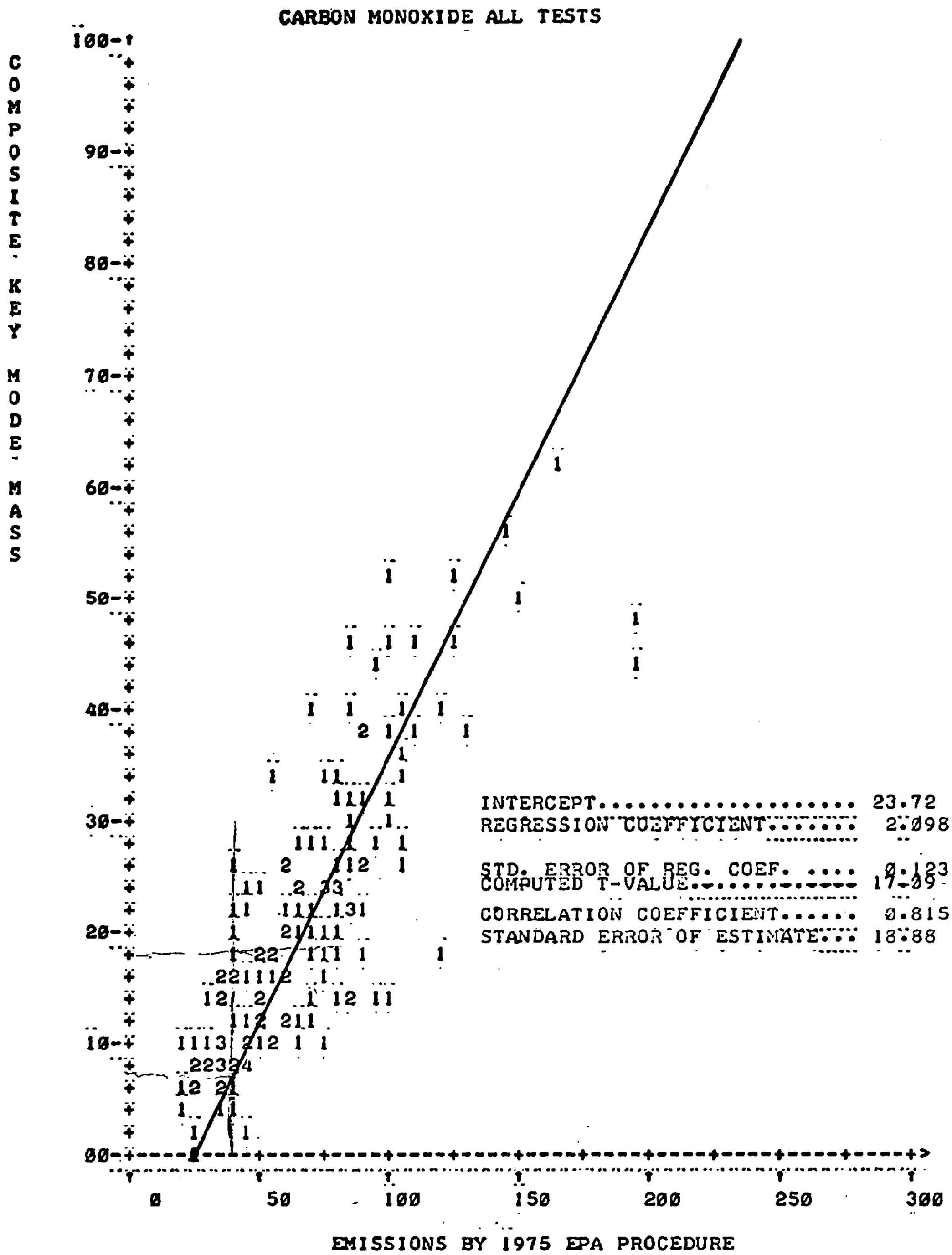

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Table 7, Scattergram, 1975 FTP vs CKMM for CO

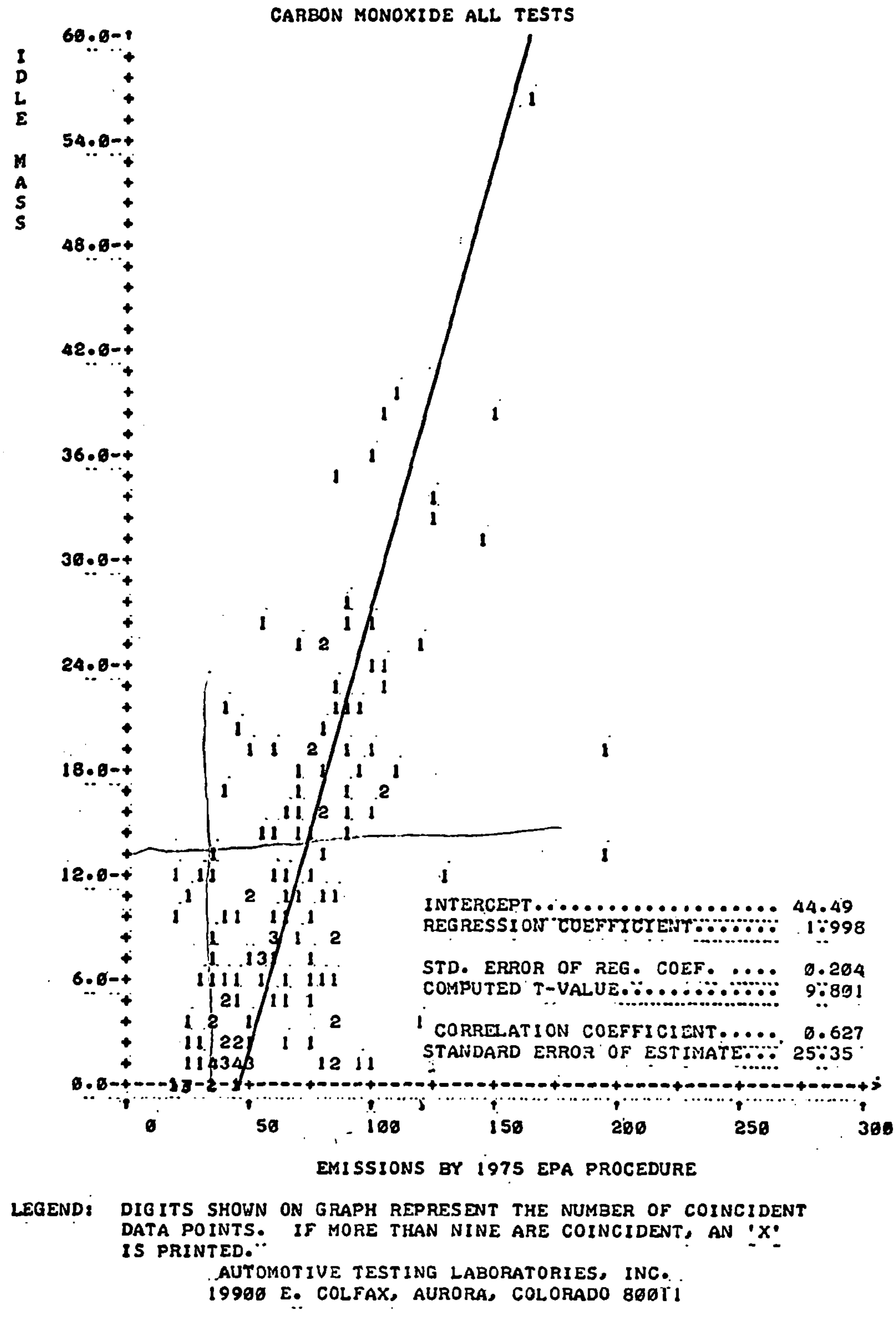

Table 8, Scattergram, 1975 FTP vs IM for CO

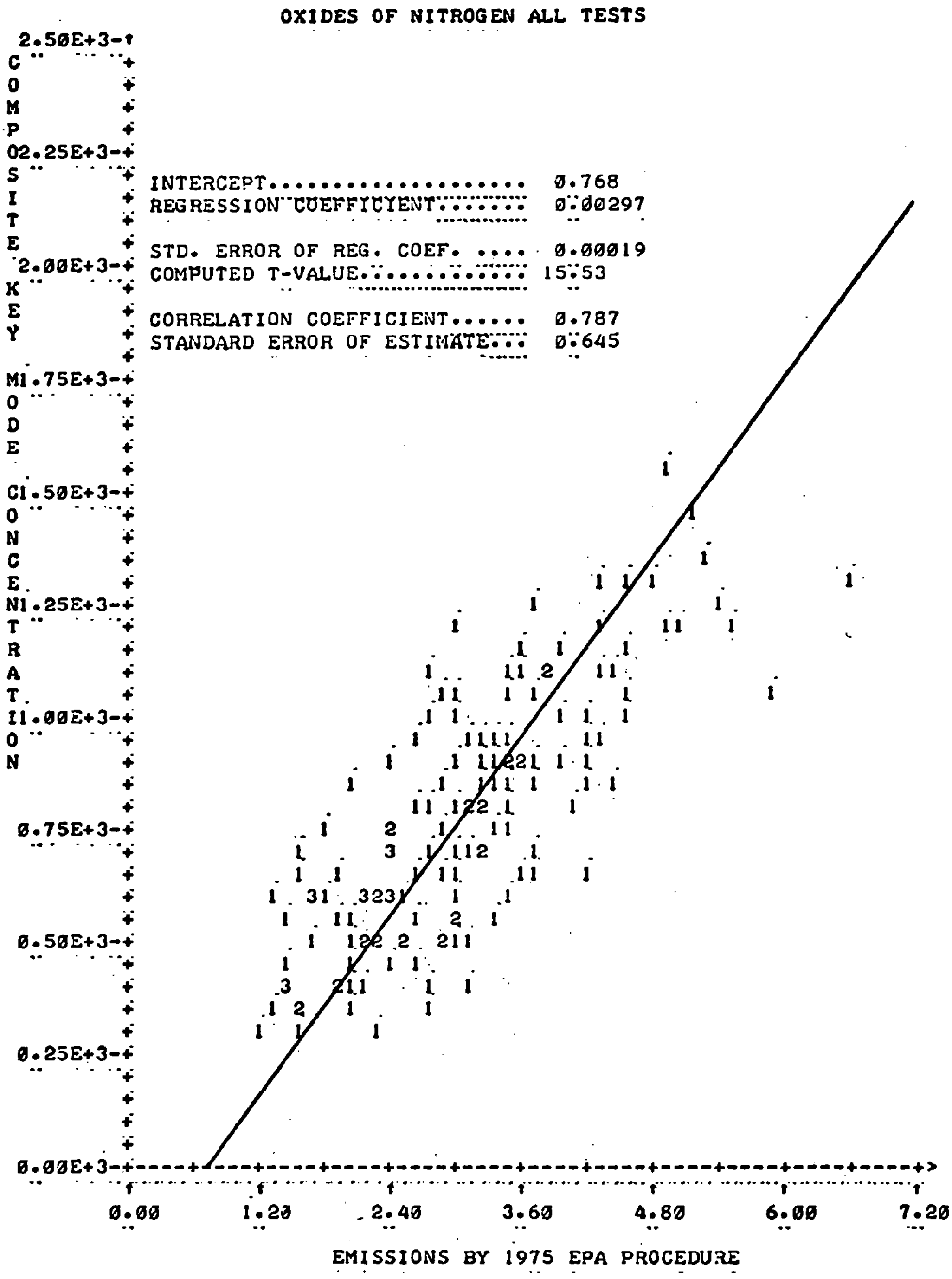

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Table 9, Scattergram, 1975 FTP vs CKMC for NO_x

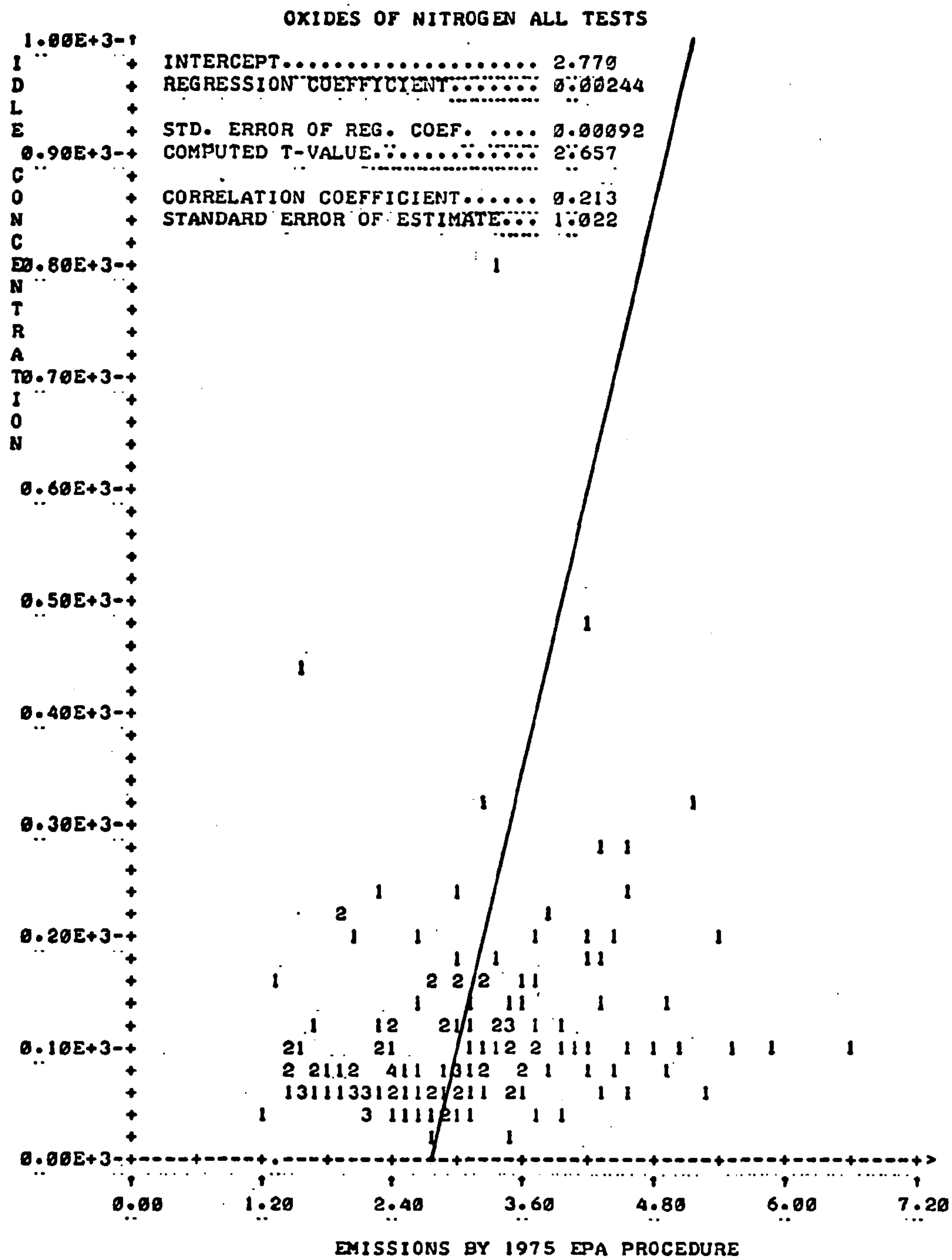

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Table 10, Scattergram, 1975 FTP vs IC for NO_x

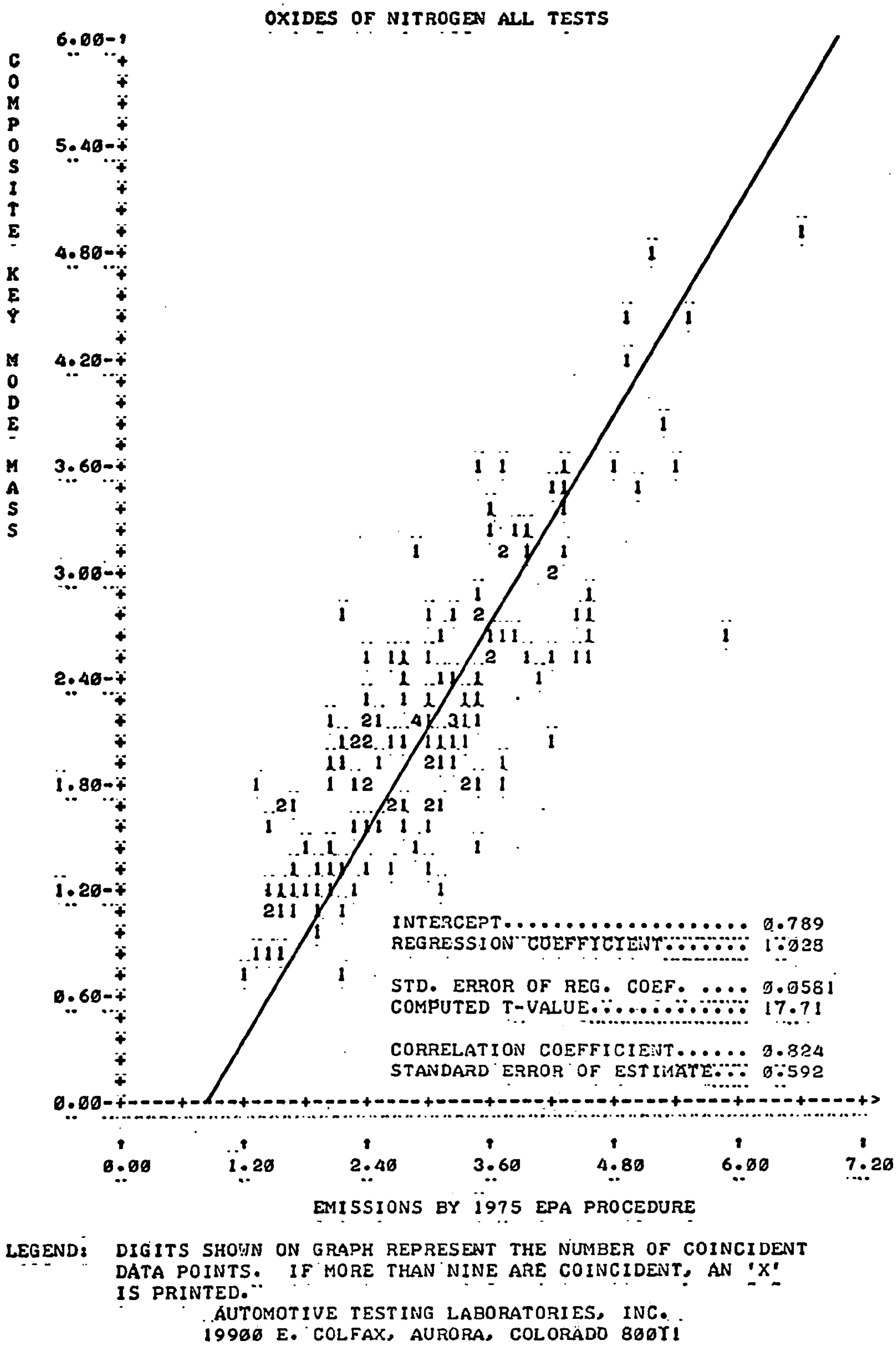

Table 11, Scattergram, 1975 FTP vs CKMM for NO_x

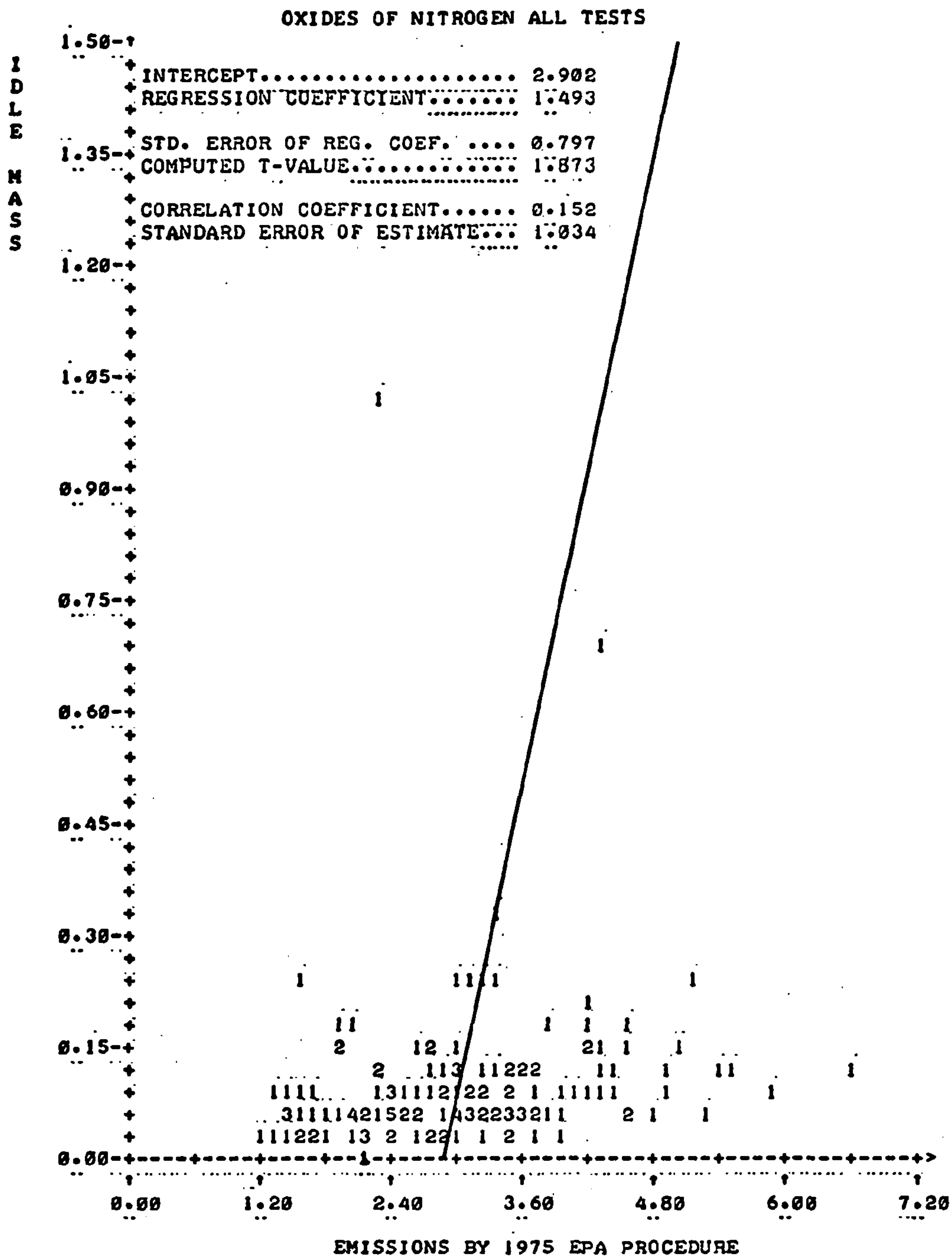

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Table 12, Scattergram, 1975 FTP vs IM for NO_x

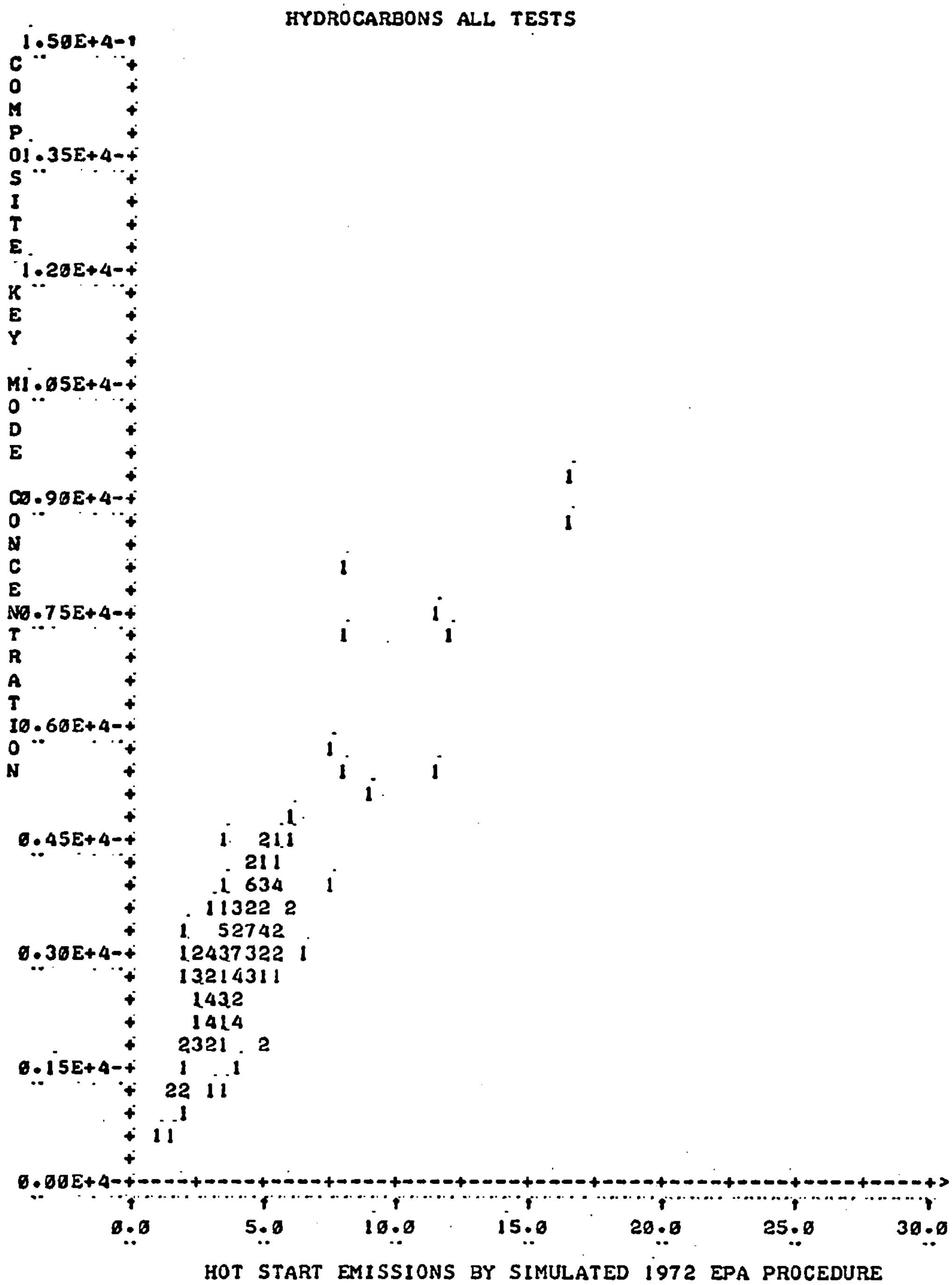

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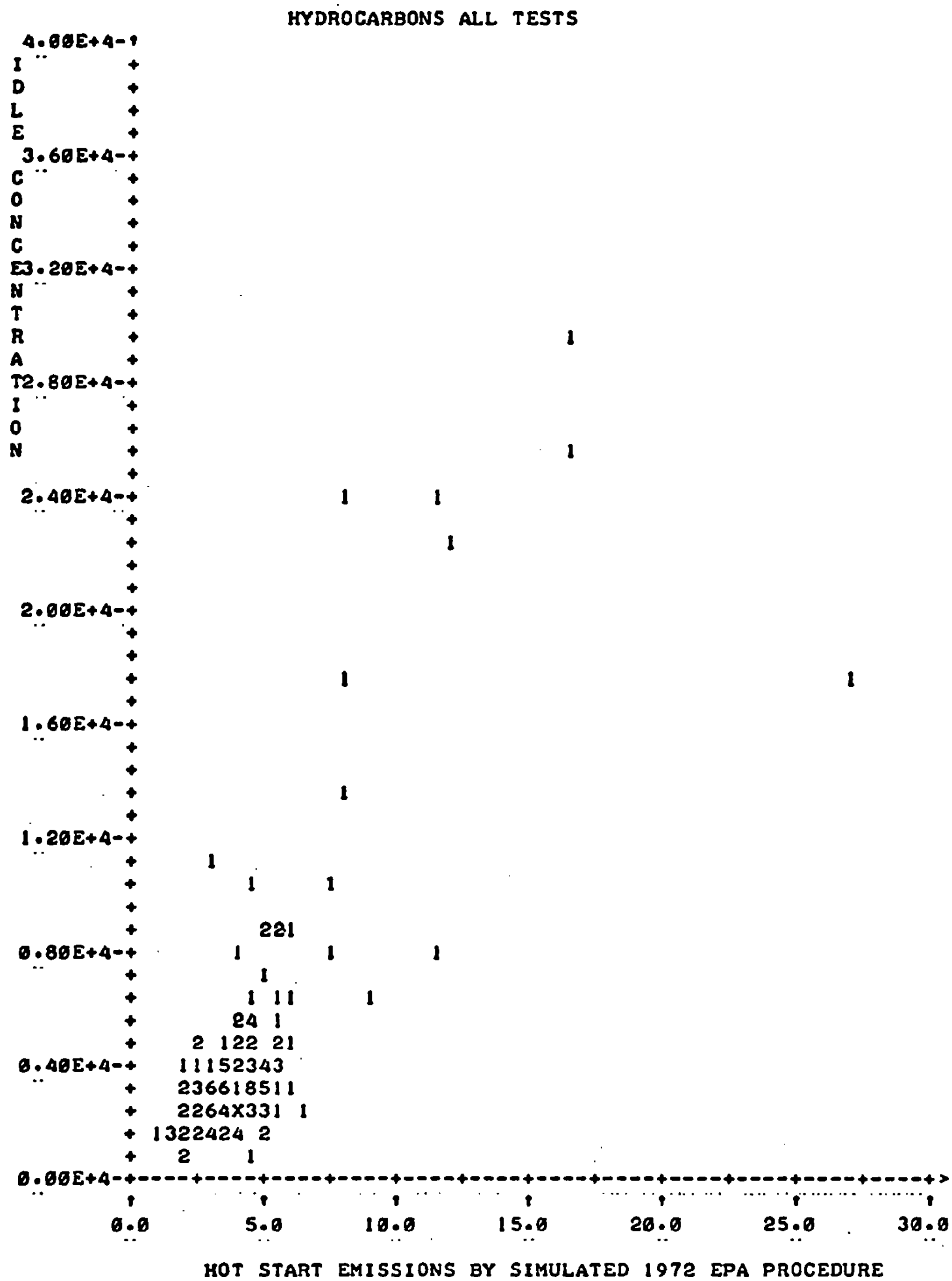
Table 13
Scattergram, Simulated Hot, 1972 FTP vs CKMC for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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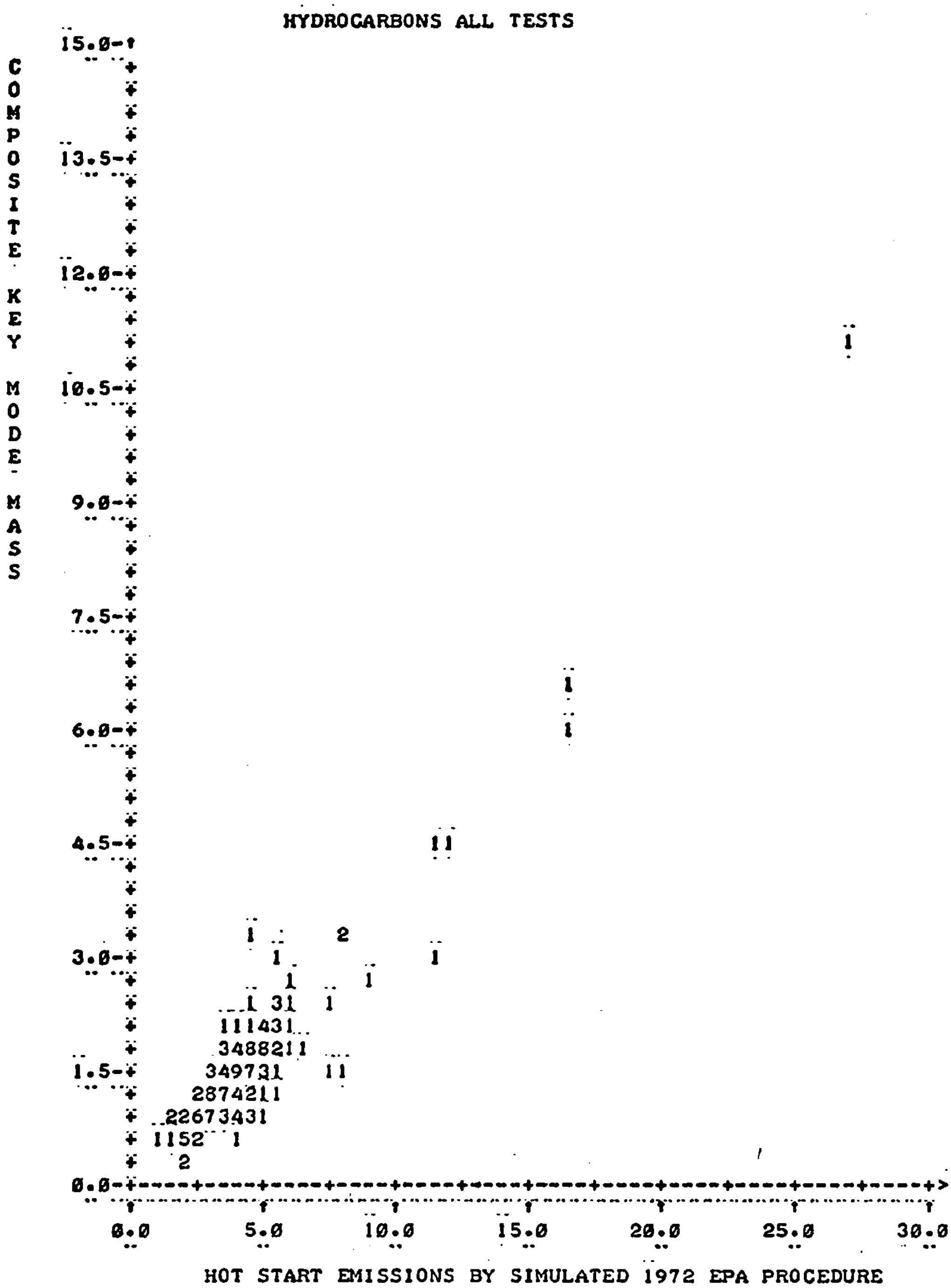
Table 14
Scattergram, Simulated Hot, 1972 FTP vs IC for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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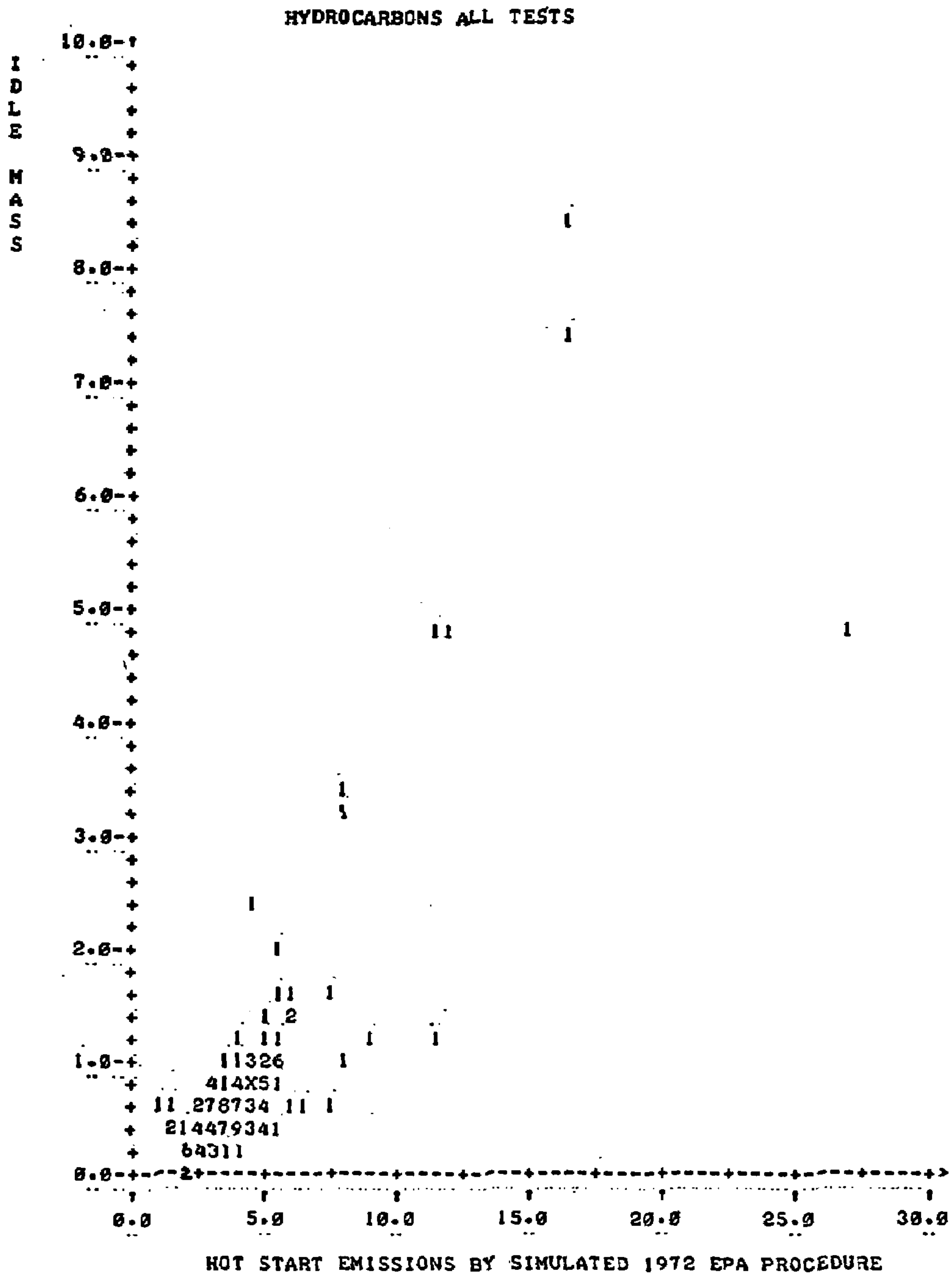
Table 15
Scattergram, Simulated Hot, 1972 FTP vs CKMM for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 16
Scattergram, Simulated Hot, 1972 FTP vs IM for HC

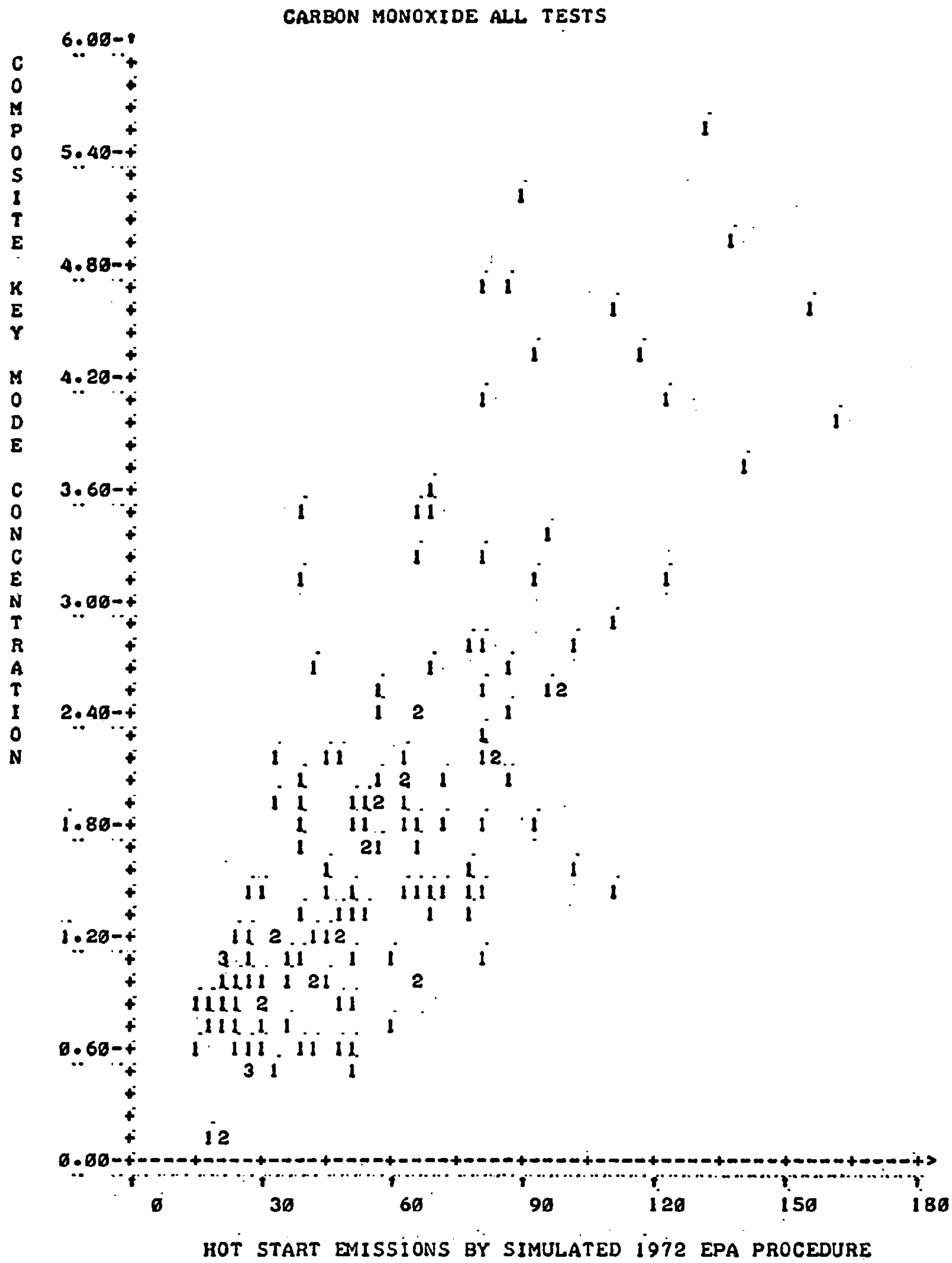

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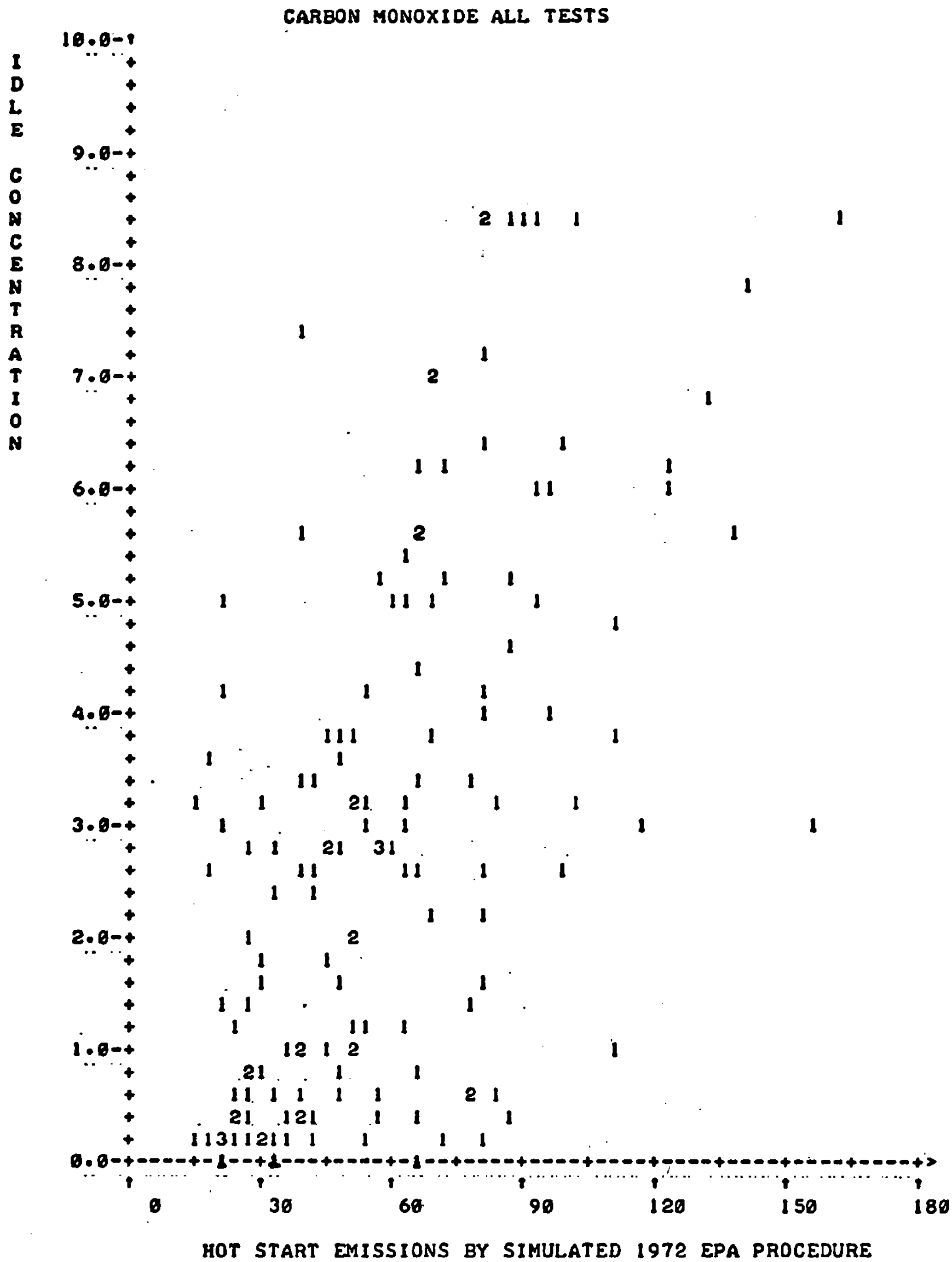
Table 17
Scattergram, Simulated Hot, 1972 FTP vs CKMC for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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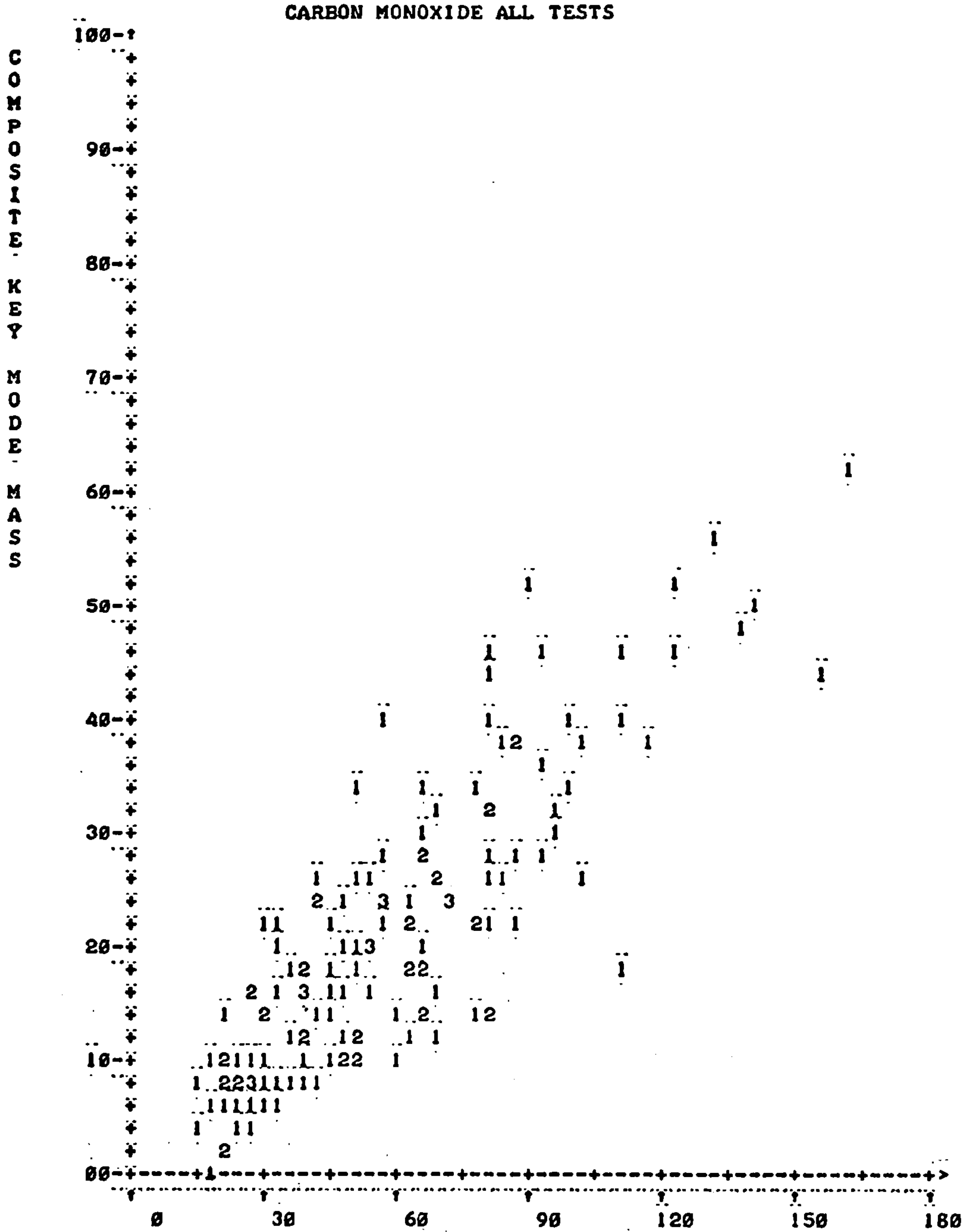
Table 18
Scattergram, Simulated Hot, 1972 FTP vs IC for CO

CARBON MONOXIDE ALL TESTS



HOT START EMISSIONS BY SIMULATED 1972 EPA PROCEDURE

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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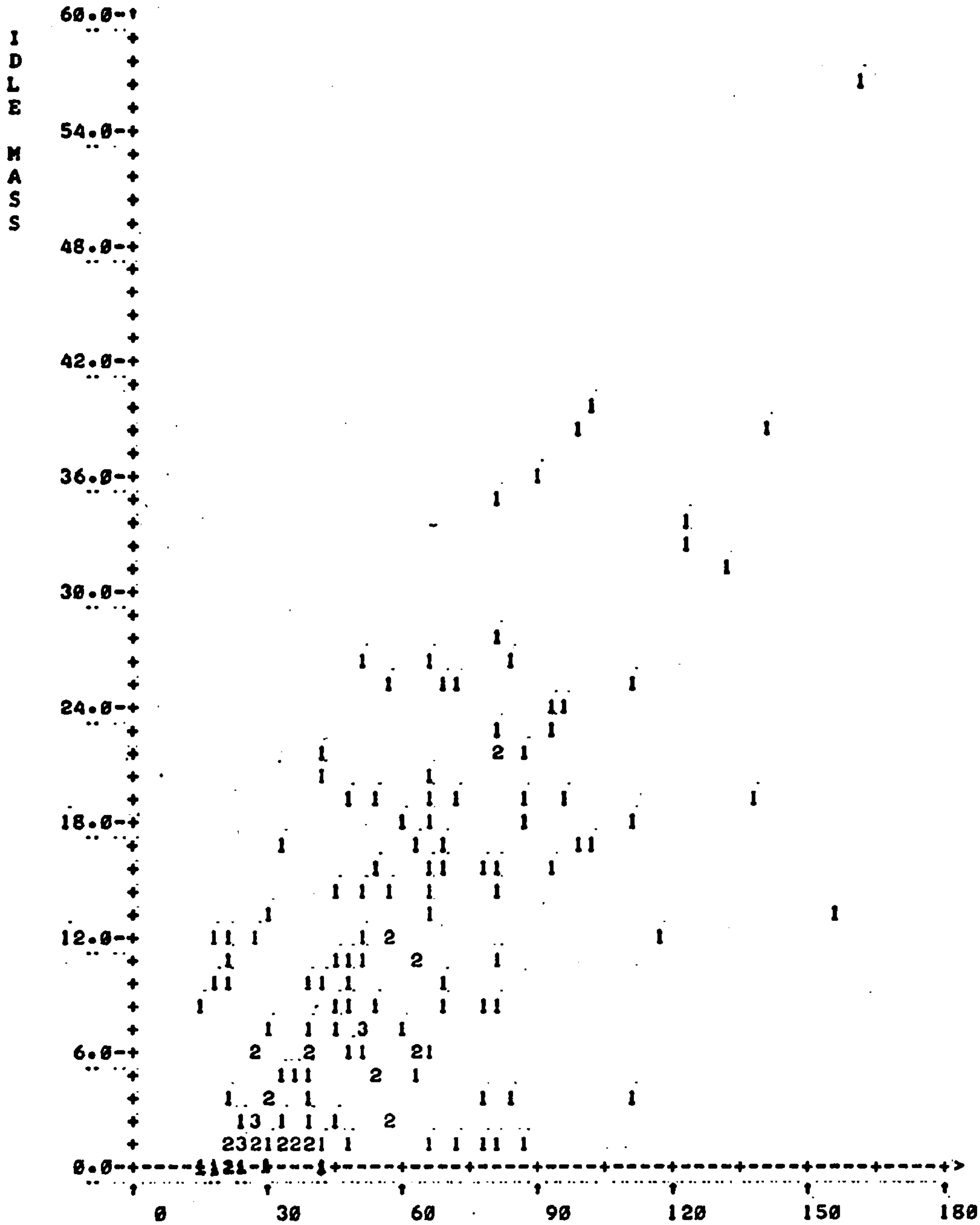
Table 19

Scattergram, Simulated Hot, 1972 FTP vs CKMM for CO

CARBON MONOXIDE ALL TESTS



HOT START EMISSIONS BY SIMULATED 1972 EPA PROCEDURE

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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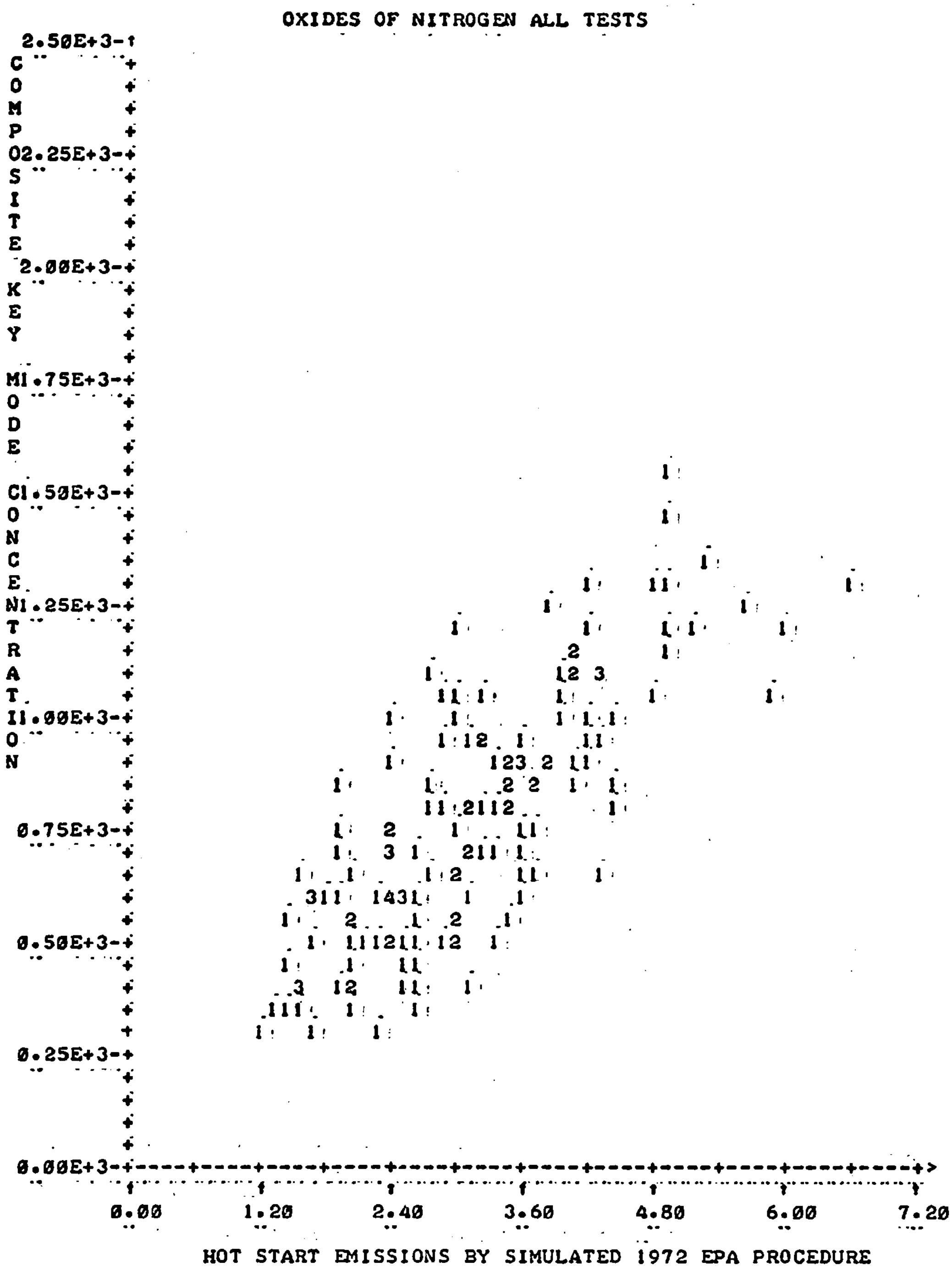
Table 20
Scattergram, Simulated Hot, 1972 FTP vs IM for CO



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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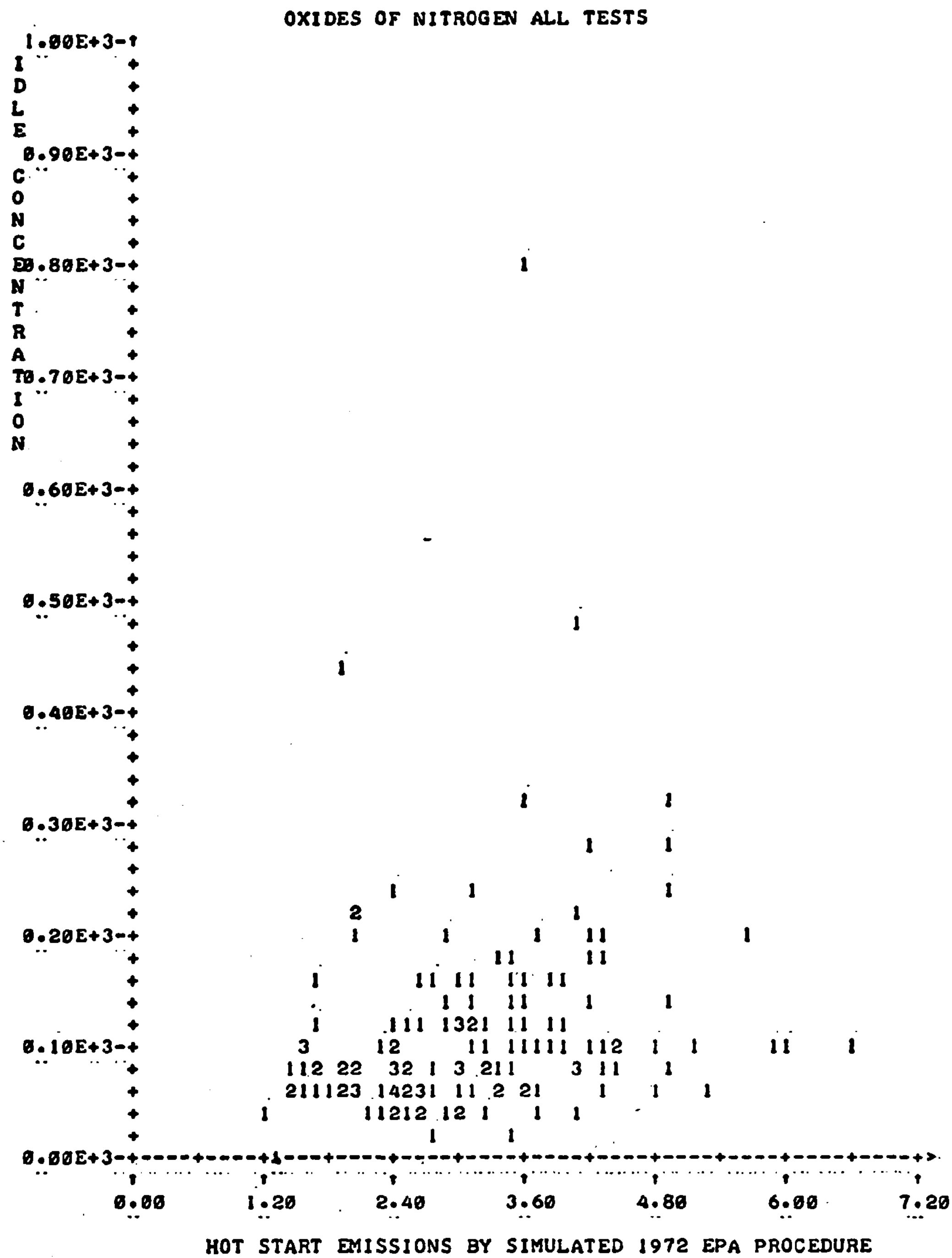
Table 21
Scattergram, Simulated Hot, 1972 FTP vs CKMC for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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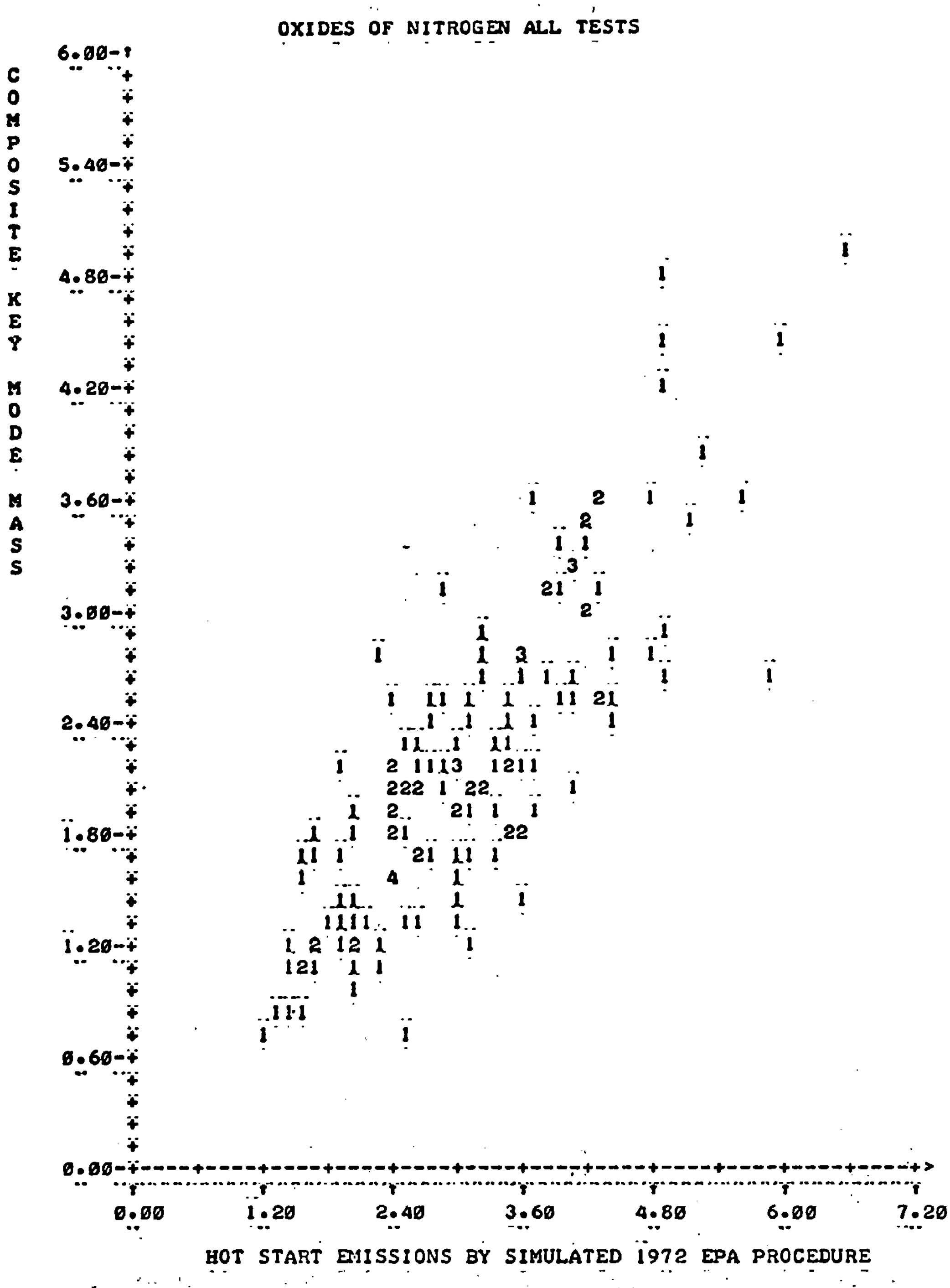
Table 22
Scattergram, Simulated Hot, 1972 FTP vs IC for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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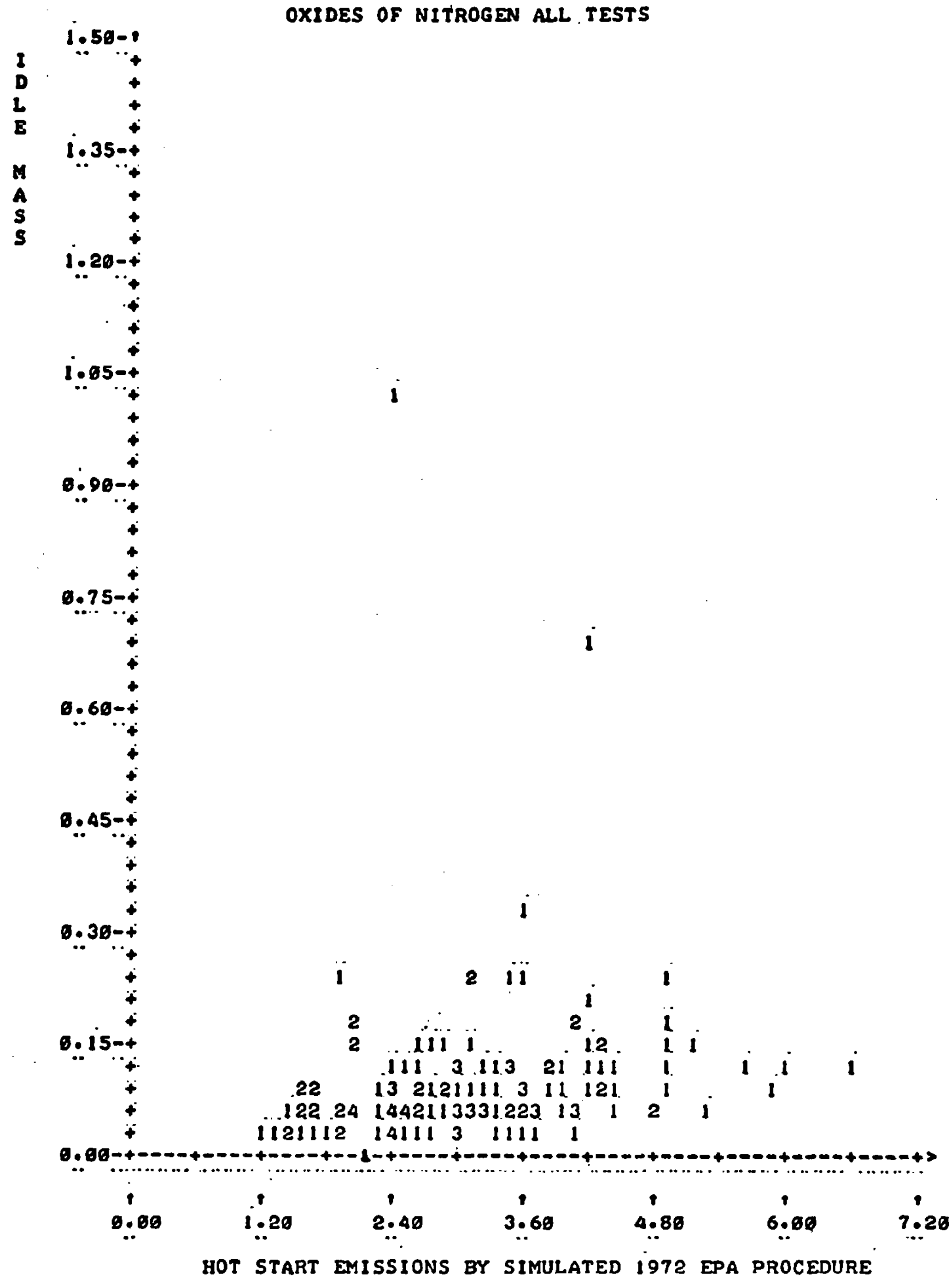
Table 23
Scattergram, Simulated Hot, 1972 FTP vs CKMM for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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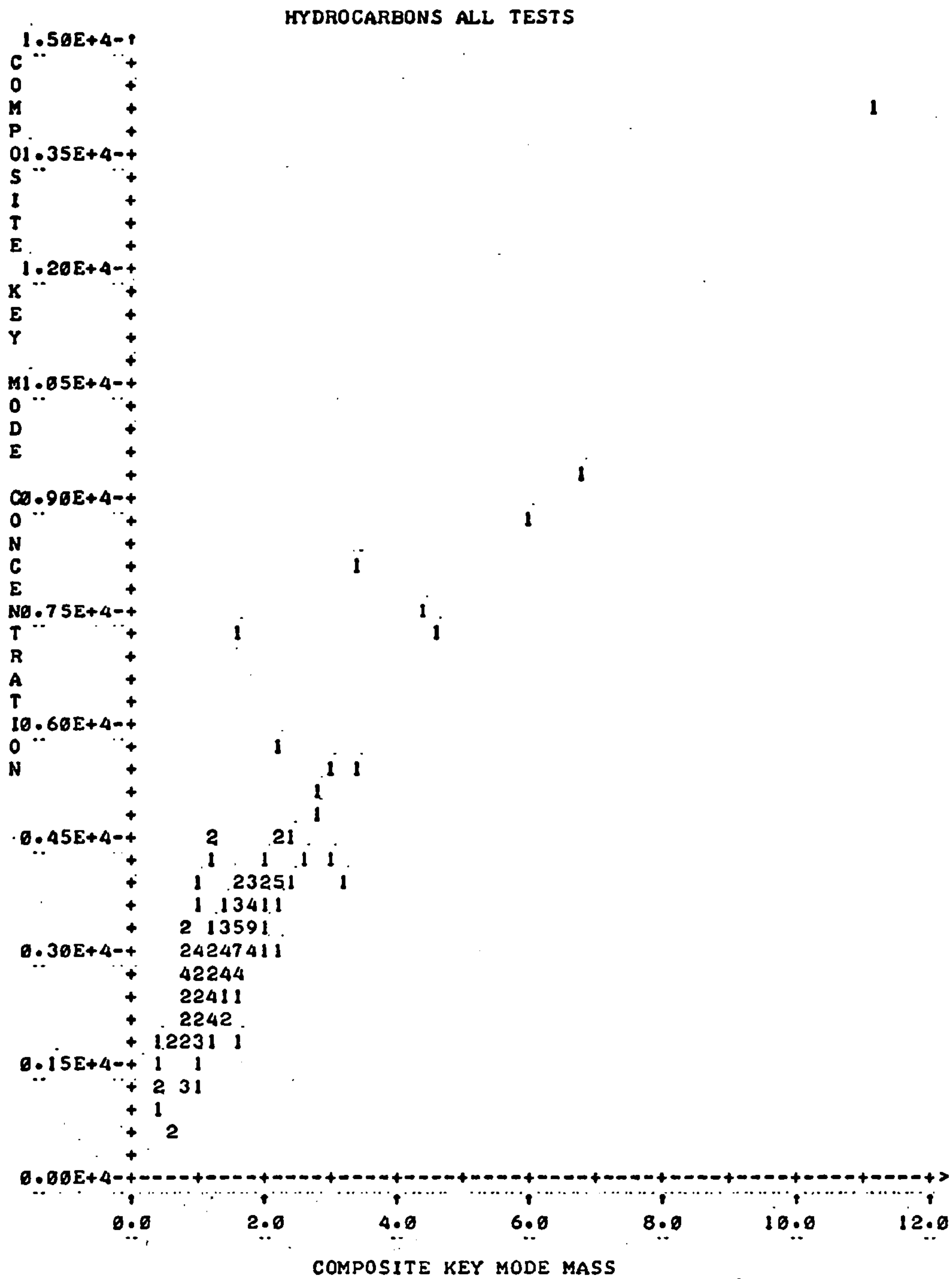
Table 24
Scattergram, Simulated Hot, 1972 FTP vs IM for NO_x



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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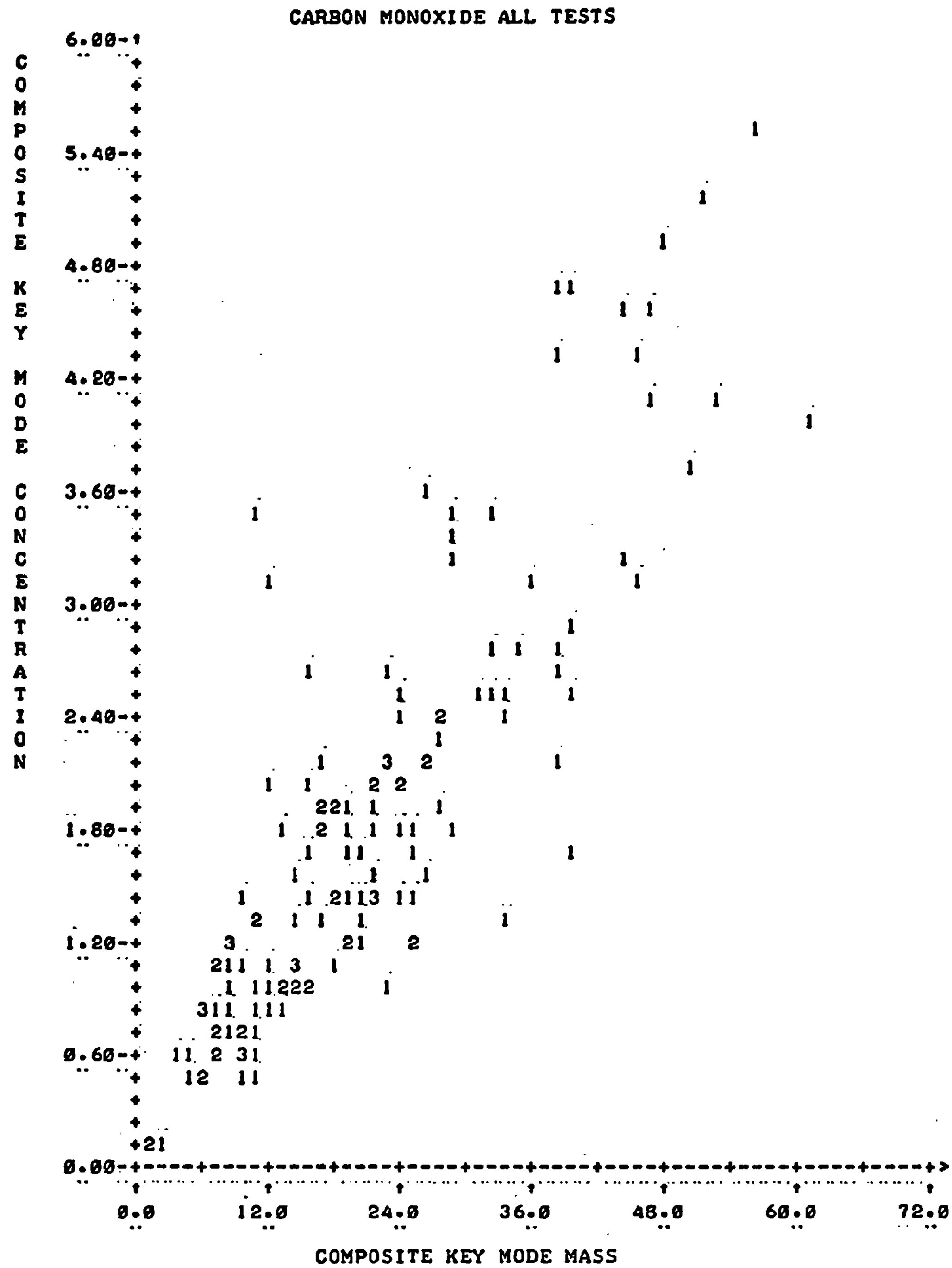
Table 25, Scattergram, CKMC vs CKMM for HC



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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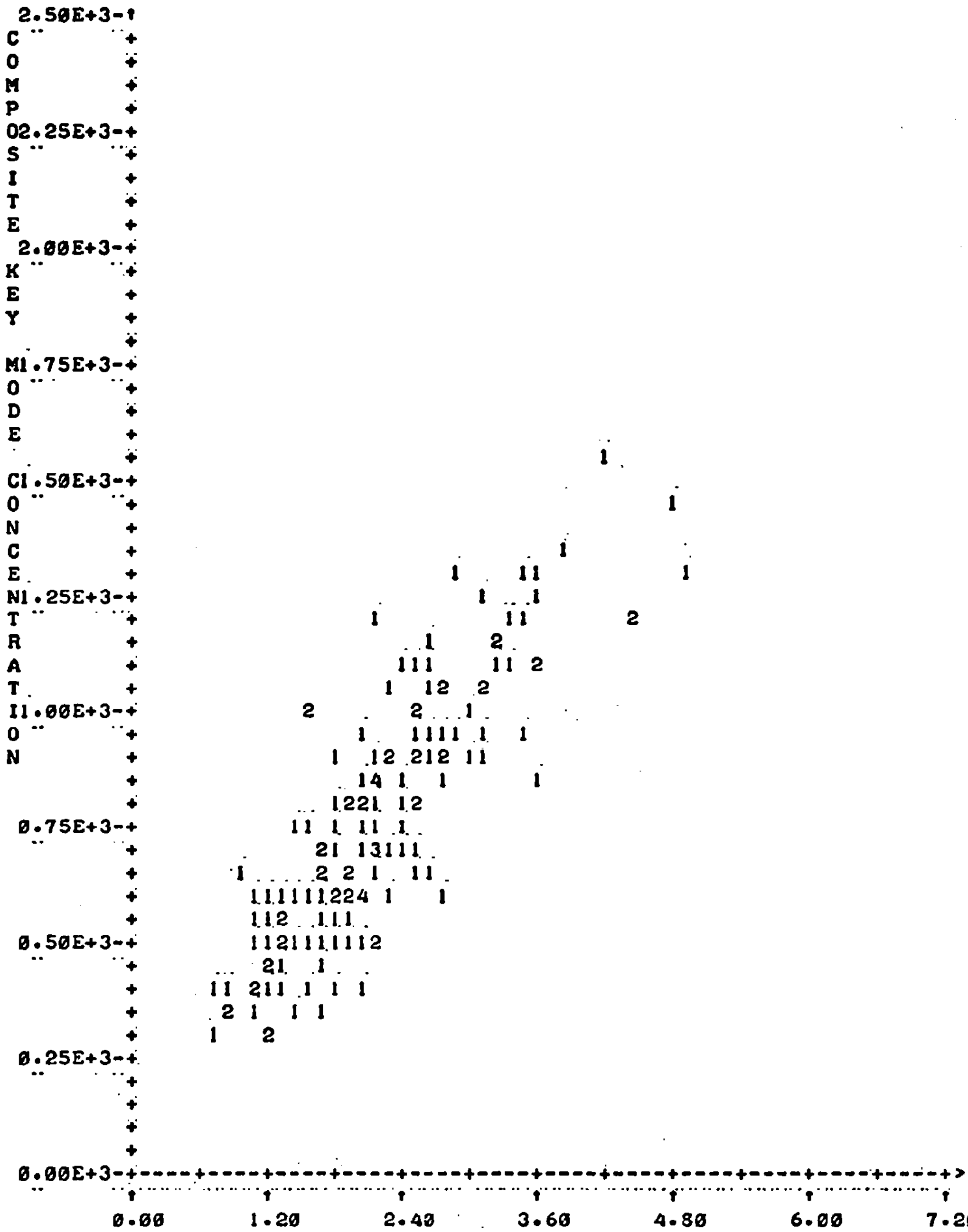
Table 26, Scattergram, CKMC vs CKMM for CO

OXIDES OF NITROGEN ALL TESTS



COMPOSITE KEY MODE MASS

LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 27, Scattergram, CKMC vs CKMM for NO_x

APPENDIX C

MAINTENANCE AND COST DATA

Appendix C contains detailed data on maintenance required and costs incurred. It should be noted that maintenance charges were determined on the basis of actual maintenance performed as opposed to indicated maintenance required. Rather subtle differences exist with respect to the two bases. For example; one vehicle was received with idle speed out of specifications, another with idle speed within specifications. With reference to the vehicle out of specifications, labor was charged to adjust that vehicle to lean best idle. With reference to the second vehicle, labor was charged for idle adjustment only if it was determined that the engine, although idling at the proper speed, was not set at a lean best air/fuel mixture. A similar situation exists with respect to ignition timing and point dwell. If adjustment of point dwell caused ignition timing to come into specifications, a charge to set ignition timing was not incurred.

Labor Estimates

To establish labor hours for engine repair and adjustment, a flat rate manual was referenced. Allowable labor as listed in the manual is shown by individual repair and by combination of repairs where, for repair of the same items, combined repair charges are less than the total of individual repair charges. In estimating costs by individual vehicle, the combined or lower costs are used. To establish cost estimates for parts, a retail parts catalog furnished by a local supplier was referenced.

To facilitate presentation of maintenance data, codes have been assigned and are used in tables which follow. Tolerances were established around manufacturers specifications and are:

Idle speed	± 25 rpm
Ignition timing	± 2 degrees
Ignition dwell	specifications
Choke angle	2 notches lean of specifications

Maintenance Codes

In Sample Maintenance and Costs tables, idle speed is shown as plus (+) or minus (-). Plus indicates that idle speed for the engine as it was received was higher than specifications and minus indicates a speed lower then specifications. The Numerals following (+) or (-) indicate the number of rpm higher or lower than specifications. A blank space indicates the vehicle was received with idle speed in specifications (within $\pm$ 25 rpm).

Ignition timing on engines as they were received is indicated in a like manner. Plus (+) indicates basic engine timing was advanced from specifications and minus (-) indicates it was retarded as received. The numeral indicates the number of degrees advanced or retarded. A blank indicates engine timing was within specifications ($\pm$ 2 degrees).

Ignition point dwell is similarly reported. Plus (+) indicates dwell greater than specifications and minus (-) is less than specifications. The numeral indicates the number of degrees outside specifications. It should be noted here that dwell time (degrees) is not always specified as having tolerances; 28 to 32 degrees and 30 degrees. Dwell is reported as -2 for a dwell of 26 degrees in the former and -4 for a dwell of 26 degrees in the latter example.

With regard to the discussion of choke angles presented earlier in this report, choke angles are considered to be rich (R) as received if set richer than 2 notches lean of specifications. A choke was considered as being lean (L) if it failed to supply the fuel necessary to cold start the vehicle for the before maintenance test within a reasonable length of time (normally 20 seconds). Choke angles were considered rich (R) if richer than the above noted specifications and lean (L) if it failed to supply sufficient fuel for cold starting as just described.

Heat risers and PCV valves were considered as satisfactory if functional (all parts were free and operating), and unsatisfactory if binding or locked. An X in the tables indicates the part was removed or disconnected from the engine. The same is true for the air pump, check valve, gulp valve and connecting air injection hoses, where existent. An X opposite blowby indicates that blowby was observed during Key Mode operation. Detonation was not apparent from any vehicle.

With regard to remaining items (air cleaner, rotor, cap, contact points, spark plugs, and ignition wires), a blank indicates the item was found to be satisfactory, a one (1) indicates cleaning was required, and a two (2) indicates replacement was required.

All items found to require adjustment, cleaning, or replacement as indicated in Sample Maintenance and Costs tables were attended to; exceptions are designated by X for Car No. 51. On this vehicle, the PCV valve was connected; however, other items (the air injection system) had been removed and were not available to be re-installed.

<u>Additional Maintenance Required</u>

Seventy-five vehicles were tested, received maintenance, and were re-tested. Diagnosis indicated that extensive repair (in excess of nominal $25.00 limitation) was required on three (3) vehicles, two (2) in the area of carburetion and one (1) including not only carburetion, but also replacement of air injection emission controls which had been removed.

Vehicles requiring additional maintenance are indicated adjacent to ADD'L WORK REQ'D by an estimate of additional cost necessary to place vehicle in "normal" operating condition.

CAR NO:	1	2	3	4	5	6	7	8	9	10	11
IDLE SPEED	-25	-175	+30	-110	+160	-255	-110	+100	-70	-60	-140
IGNITION TIMING	+2	+4	+6	+3	+9	-3	+3	+12	+3	+4	-4
IGNITION DWELL			-6			-2	-2		-2	-3	
CHOKE ANGLE	R	R					R				
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER	2	2	2	2	1	2				2	
ROTOR											
CAP											
CONTACT POINTS			2	2							
SPARK PLUGS		2								2	
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D								71.00			
LABOR, ACTUAL	7.00	19.00	13.00	13.00	10.00	10.00	9.00	6.00	8.00	18.00	6.00
PARTS, ACTUAL	5.83	15.53	9.96	9.96		6.63				10.80	
TOTAL, ACTUAL	12.83	34.53	22.96	22.96	10.00	16.63	9.00	6.00	8.00	18.80	6.00

Table 1A, Sample Maintenance and Costs

CAR NO:	12	13	14	15	16	17	18	19	20	21	22
IDLE SPEED		+300		-40	-125	-125	-195	-50	+60	-50	-55
IGNITION TIMING	+8	+21	+3	+4	+3	+3	-2	+3	+3	-6	
IGNITION DWELL		-10	+3	+1	-2	+8	-3	+4			-2
CHOKE ANGLE		R		R		R	L	L			
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER		2	2	2		2				2	2
ROTOR											
CAP											
CONTACT POINTS		2					2	2			
SPARK PLUGS								2			
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	5.00	19.00	7.00	11.00	8.00	10.00	10.00	20.00	5.00	7.00	7.00
PARTS, ACTUAL		8.52	5.38	5.83		6.63	5.33	12.56		4.73	
TOTAL, ACTUAL	5.00	27.52	12.38	16.83	8.00	16.63	15.33	32.56	5.00	11.73	7.00

Table 1B, Sample Maintenance and Costs

CAR NO:	23	24	25	26	27	28	29	30	31	32	33
IDLE SPEED	-120	-30		-75	-30	+30	+170	-200	-150	-140	-210
IGNITION TIMING	+4	+3		-6	+6	+6		+3	-3	+6	+3
IGNITION DWELL				-2	+8	-8	+5	-8		+11	-3
CHOKE ANGLE											
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER		2									2
ROTOR											
CAP											
CONTACT POINTS	2										
SPARK PLUGS			2	2		2					
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	13.00	6.00	11.00	14.00	5.00	11.00	5.00	5.00	4.00	7.00	9.00
PARTS, ACTUAL	3.89	4.37	13.20	13.20		10.08					5.38
TOTAL, ACTUAL	16.89	10.37	24.20	27.20	5.00	21.08	5.00	5.00	4.00	7.00	14.38

Table 1C, Sample Maintenance and Costs

CAR NO:	34	35	36	37	38	39	40	41	42	43	44
IDLE SPEED	+30		-70	-40	-30	-30	-35	-90	-90	+40	
IGNITION TIMING	+5	+4	+4	-5	+8	+3	-4	+4	-3	+3	-10
IGNITION DWELL				+1		-3		-4	+1		
CHOKE ANGLE											
HEAT RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER								2	2		
ROTOR						2					
CAP											
CONTACT POINTS						2					
SPARK PLUGS											
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	7.00	2.00	4.00	7.00	5.00	6.00	5.00	8.00	7.00	5.00	2.00
PARTS, ACTUAL						3.03		4.46	3.12		
TOTAL, ACTUAL	7.00	2.00	4.00	7.00	5.00	9.03	5.00	12.46	10.12	5.00	2.00

Table 1D, Sample Maintenance and Costs

CAR NO:	45	46	47	48	49	50	51	52	53	54	55
IDLE SPEED		+150	+120	-80	+50	-100	-300	-50	-100	-50	
IGNITION TIMING		-5	+3	-8	+5	-3	+3	+3		+3	+3
IGNITION DWELL			+2	-2			+12	-7		-4	+2
CHOKE ANGLE								R			
HEAT RISER											
PCV VALVE							X				
AIR PUMP							X				
CHECK VALVE							X				
GULP VALVE							X				
AIR HOSE							X				
AIR CLEANER	1										2
ROTOR											
CAP											
CONTACT POINTS			2			2	2	2		2	
SPARK PLUGS			2			2					
IGNITION WIRES											
BLOWBY							X				
DETONATION											
ADD'L WORK REQ'D							230.00				
LABOR, ACTUAL	2.00	4.00	17.00	5.00	5.00	14.00	9.00	13.00	2.00	9.00	3.00
PARTS, ACTUAL			16.13			11.76	6.63	5.33		5.43	6.82
TOTAL, ACTUAL	2.00	4.00	33.13	5.00	5.00	25.76	15.63	18.33	2.00	14.43	9.82

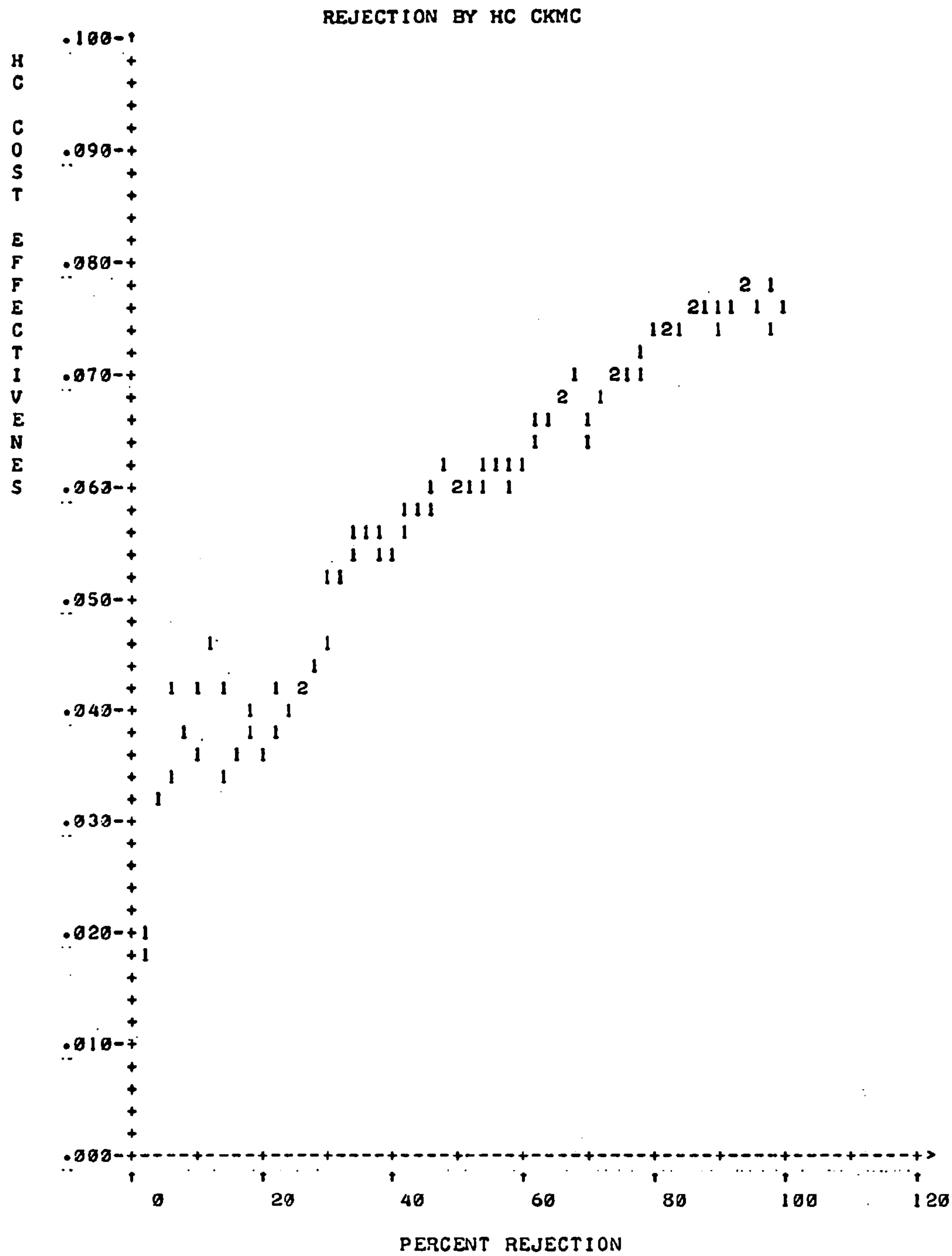
Table 1E, Sample Maintenance and Costs

CAR NO:	56	57	58	59	60	61	62	63	64	65	66
IDLE SPEED	-80	-100	-60	-150	+30	-150	+200	+100	-30	-110	+30
IGNITION TIMING		+3	-3	+5	+5	-3	+3	-3	+4	-3	-7
IGNITION DWELL		-3	-3	+6	+3		-1	+10			
CHOKE ANGLE						R	R				
HEAR RISER											
PCV VALVE											
AIR PUMP											
CHECK VALVE											
GULP VALVE											
AIR HOSE											
AIR CLEANER											
ROTOR											
CAP											
CONTACT POINTS				2	2						
SPARK PLUGS				2							
IGNITION WIRES											
BLOWBY											
DETONATION											
ADD'L WORK REQ'D											
LABOR, ACTUAL	2.00	5.00	5.00	24.00	12.00	7.00	7.00	6.00	5.00	5.00	5.00
PARTS, ACTUAL				16.13	3.92						
TOTAL, ACTUAL	2.00	5.00	5.00	40.13	15.92	7.00	7.00	6.00	5.00	5.00	5.00

Table 1F, Sample Maintenance and Costs

CAR NO:	67	68	69	70	71	72	73	74	75
IDLE SPEED	+35	+100		-50	-100	-70	-180	-100	
IGNITION TIMING	+16		+3		+13	+11	+4	+12	
IGNITION DWELL			-10		-10		-6		
CHOKE ANGLE	R								R
HEAT RISER									
PCV VALVE									
AIR PUMP									
CHECK VALVE									
GULP VALVE									
AIR HOSE									
AIR CLEANER					2				2
ROTOR									
CAP									
CONTACT POINTS									
SPARK PLUGS		2			2	2			
IGNITION WIRES									
BLOWBY									
DETONATION									
ADD'L WORK REQ'D		63.45							
LABOR, ACTUAL	5.00	11.00	5.00	2.00	17.00	14.00	7.00	4.00	4.00
PARTS, ACTUAL		13.20			7.84	5.31			5.50
TOTAL, ACTUAL	5.00	24.20	5.00	2.00	24.84	19.31	7.00	4.00	9.50

Table 1G, Sample Maintenance and Costs



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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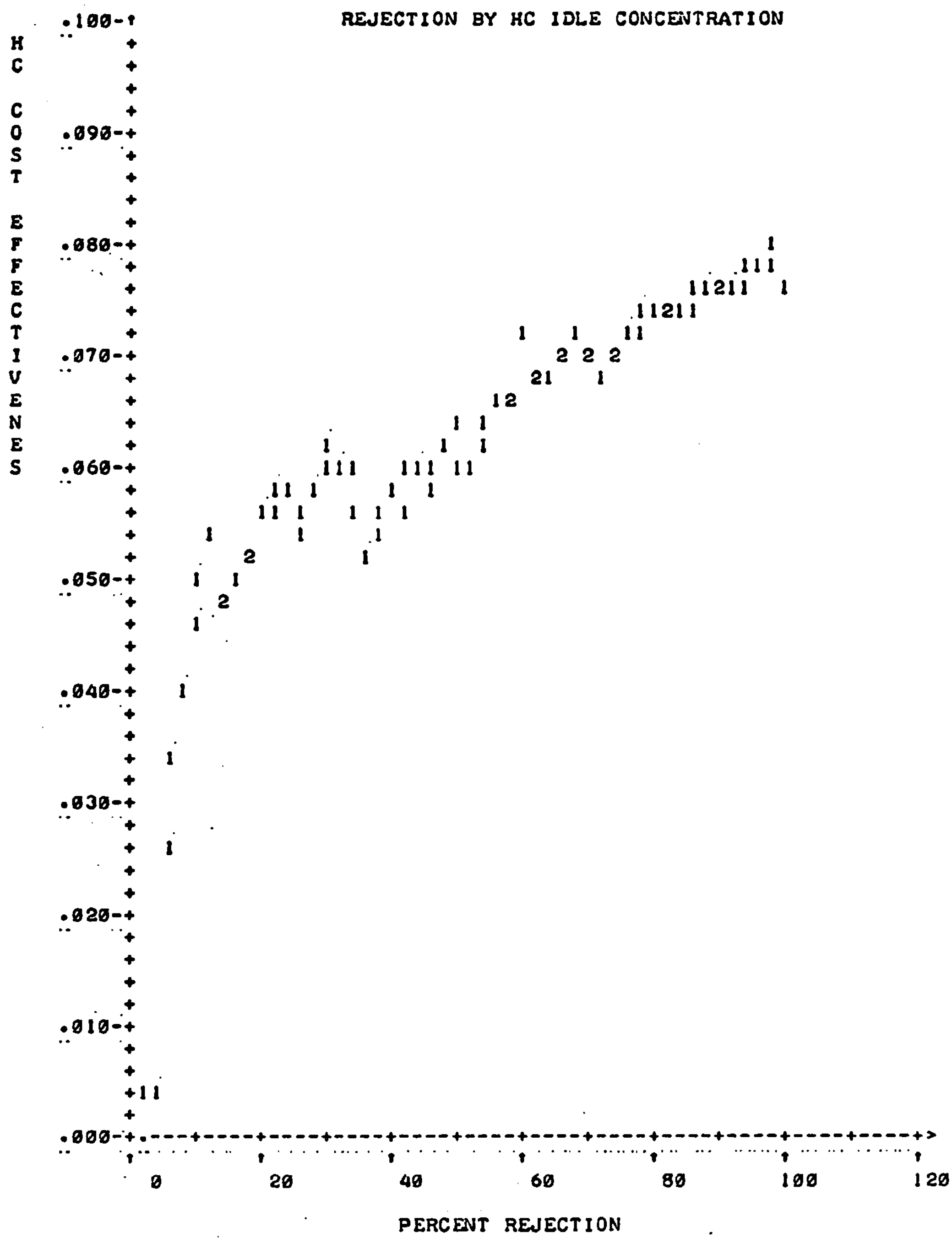
Table 2, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 3, Cost Effectiveness Plot

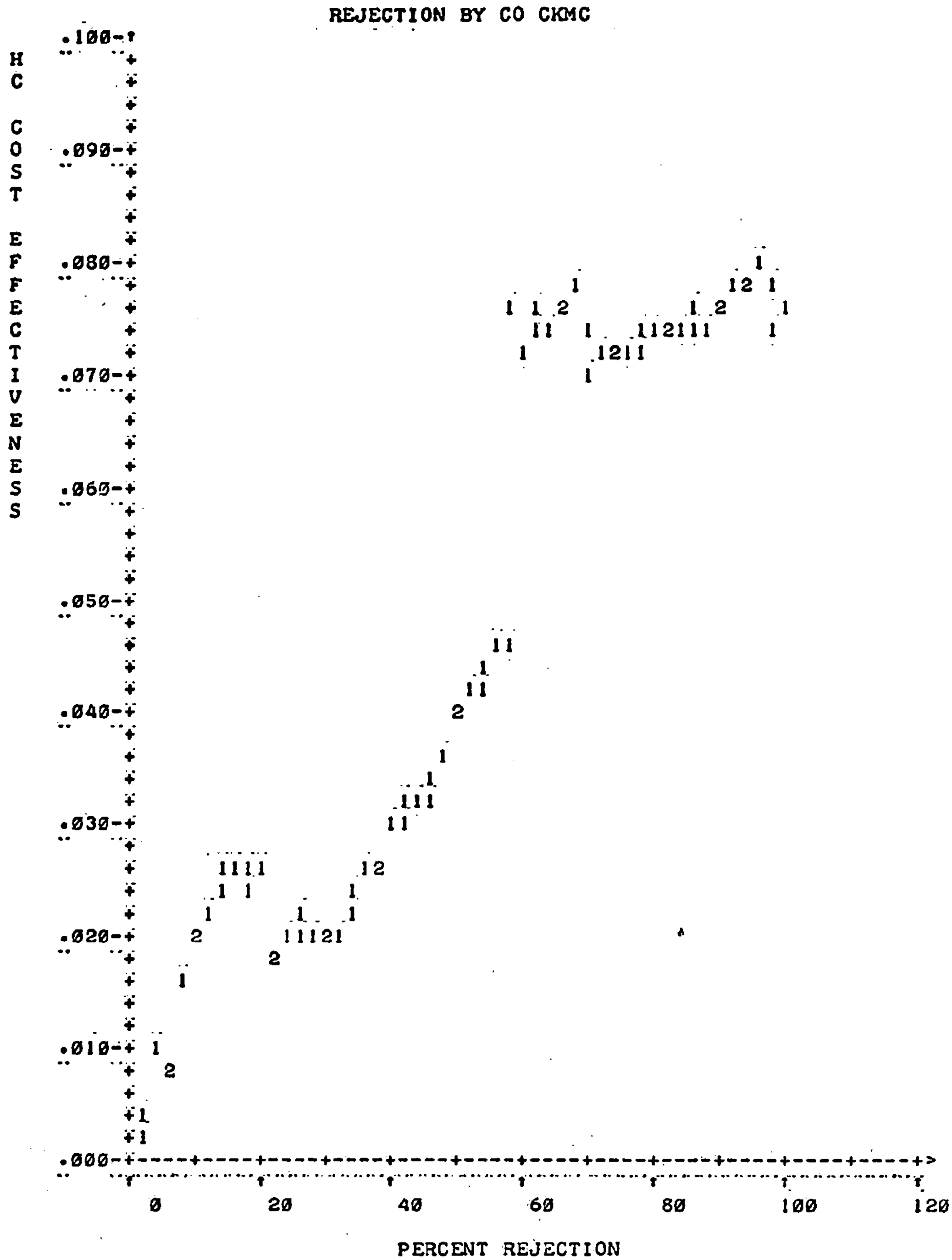

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Table 4, Cost Effectiveness Plot

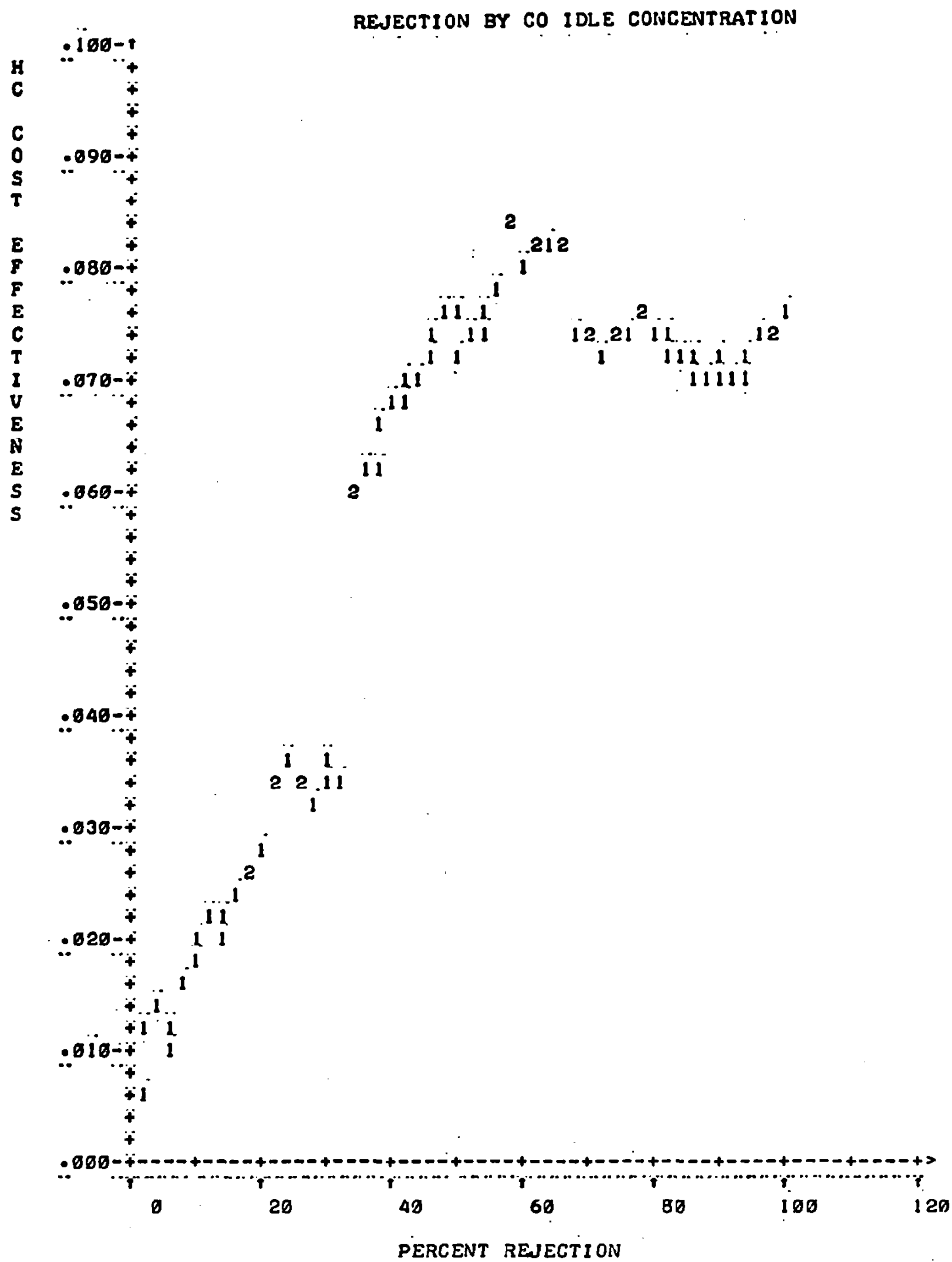

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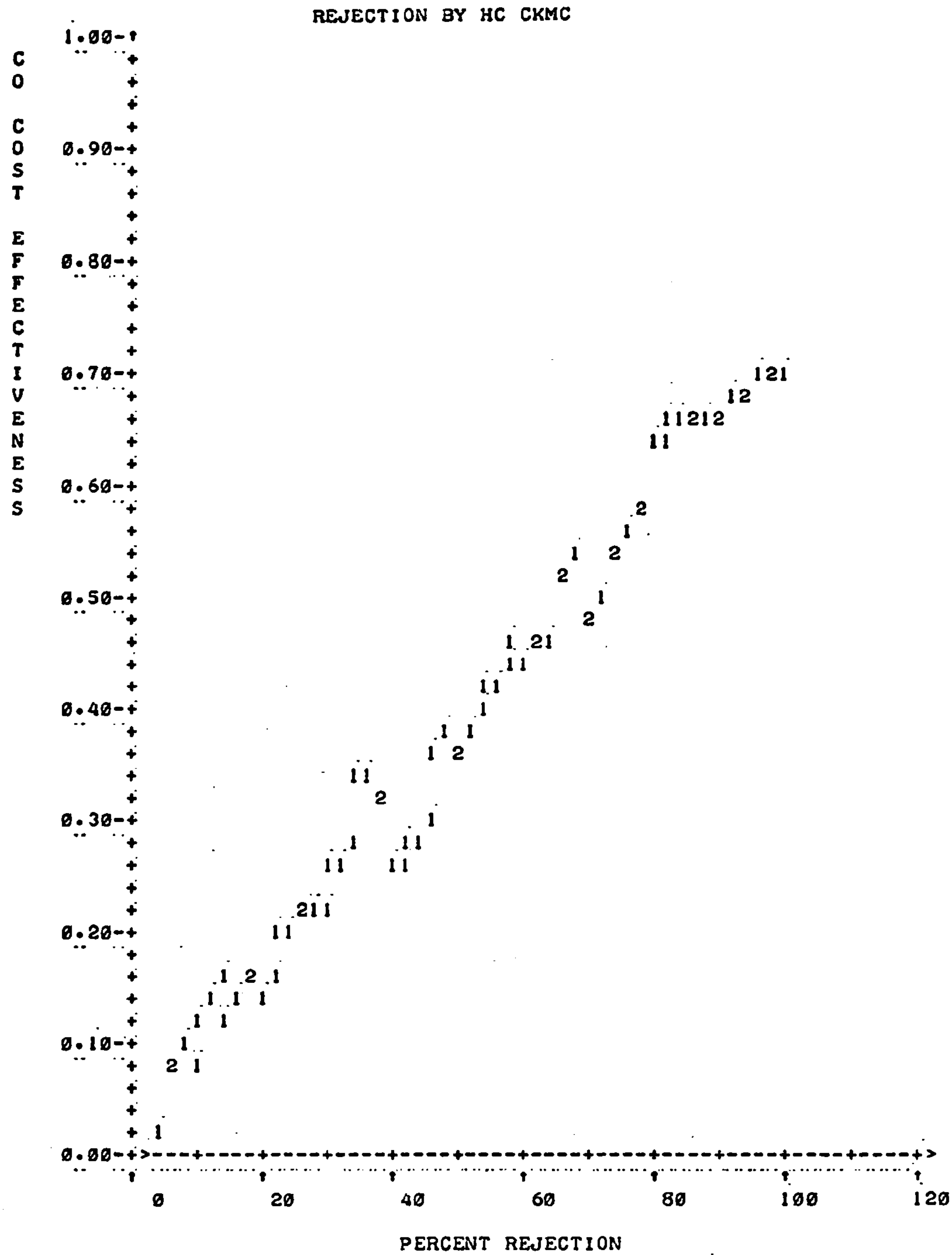
Table 5, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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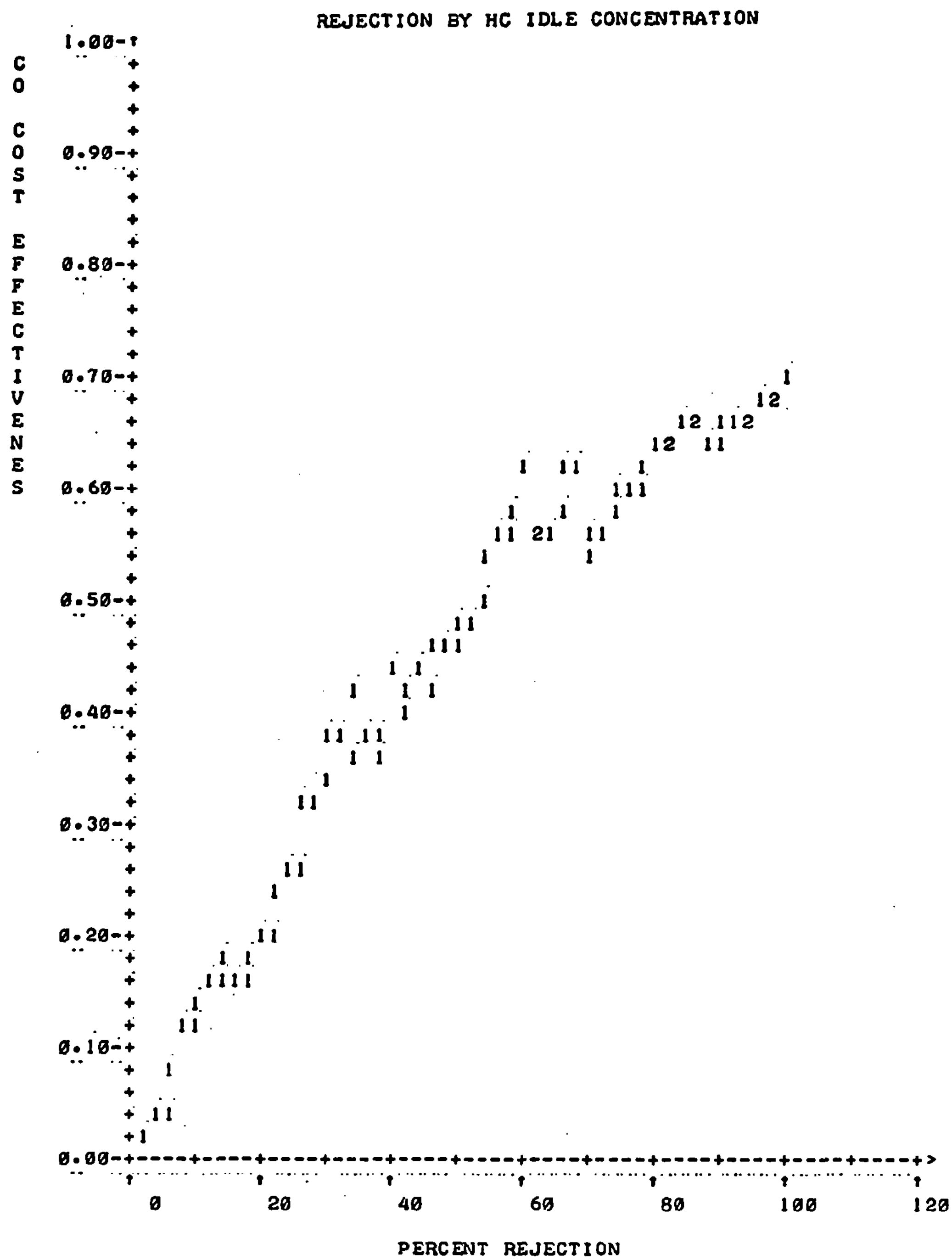
Table 6, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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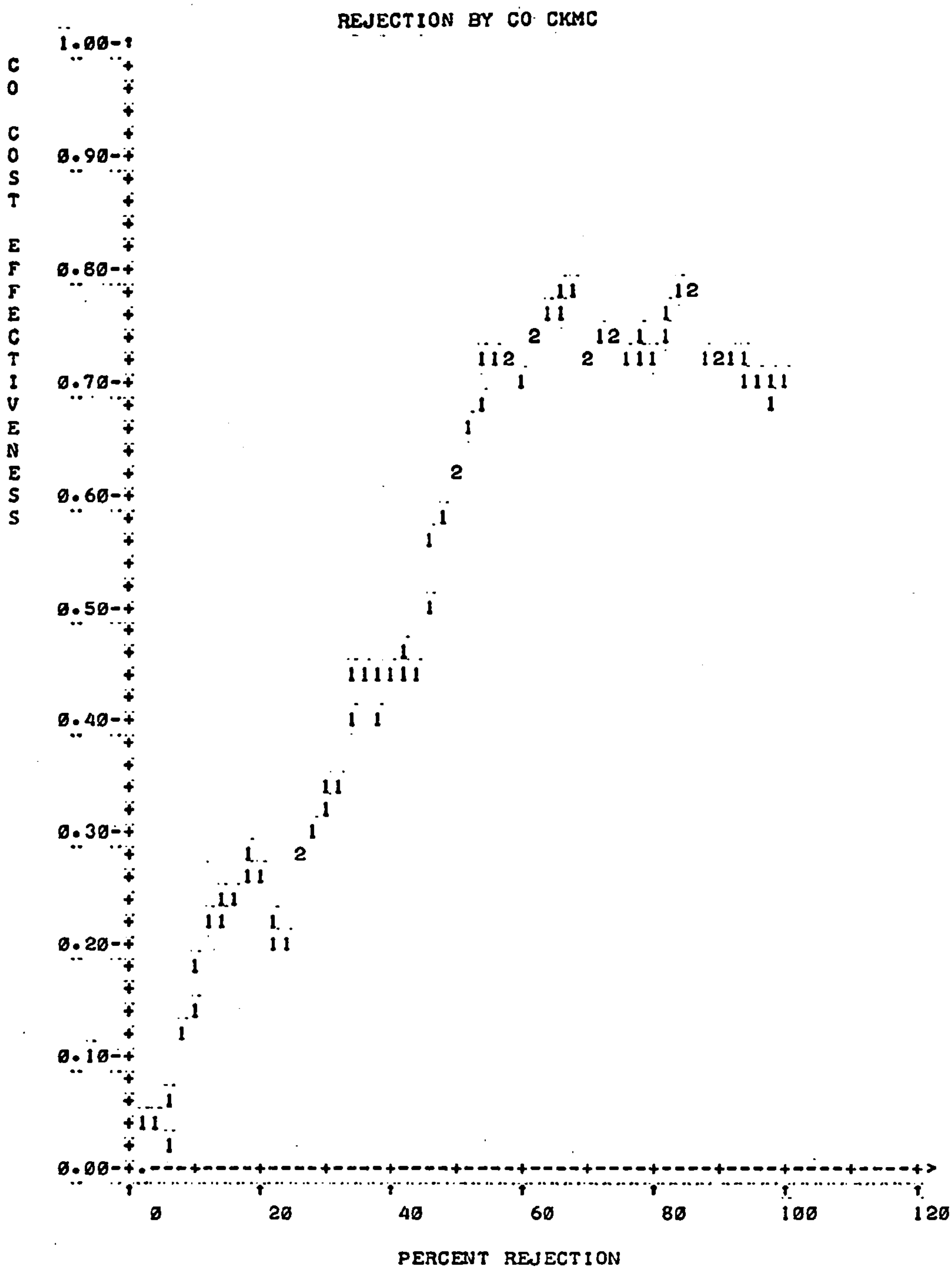
Table 7, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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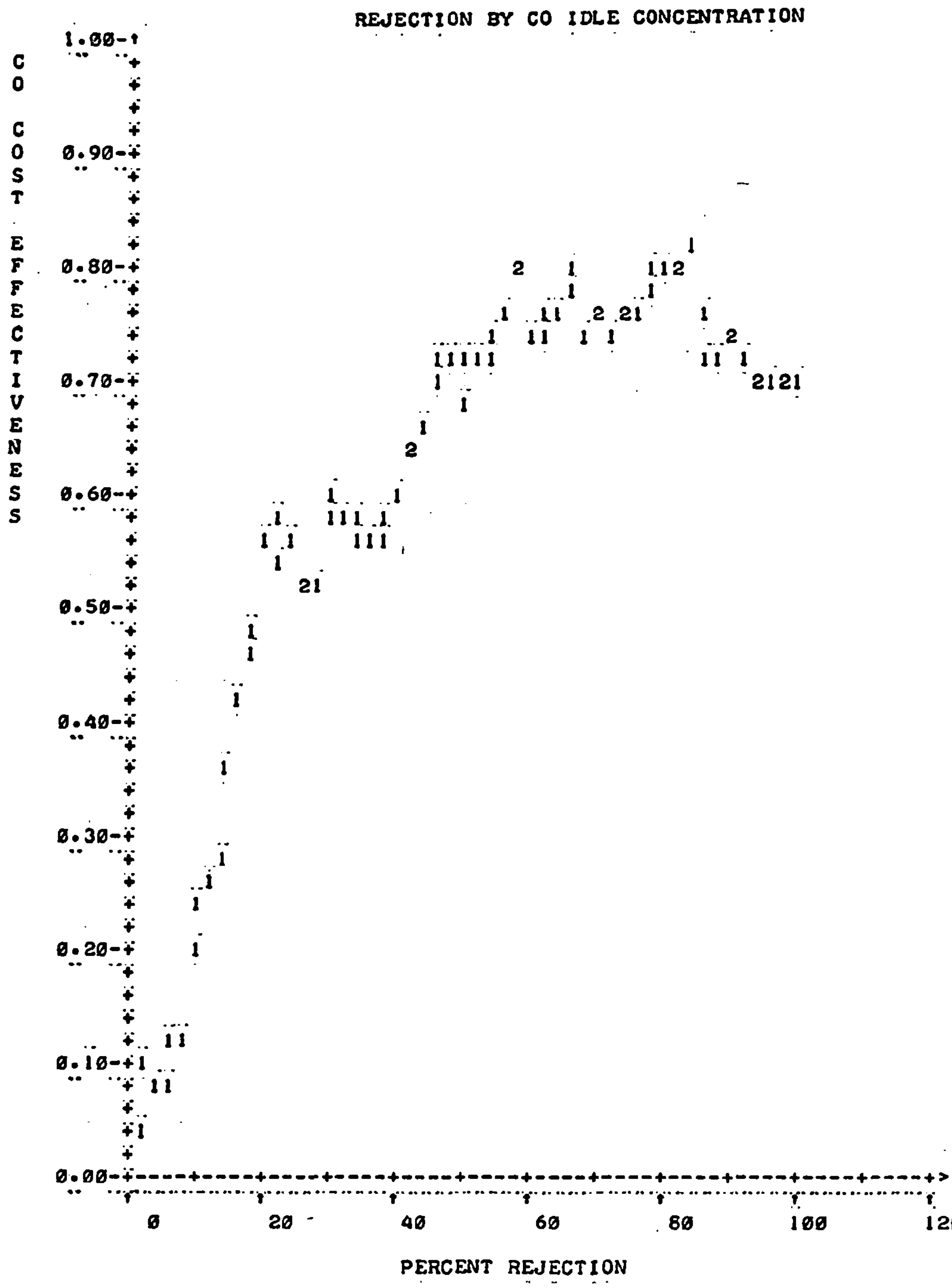
Table 8, Cost Effectiveness Plot



LEGEND: DIGITS SHOWN ON GRAPH REPRESENT THE NUMBER OF COINCIDENT DATA POINTS. IF MORE THAN NINE ARE COINCIDENT, AN 'X' IS PRINTED.

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Table 9, Cost Effectiveness Plot

APPENDIX D

TEST SAMPLE AND EMISSION TEST DATA

Appendix D contains a description of the sample, emission results and other test parameters. Abbreviations and codes are used extensively throughout the data. The following information is provided to define test codes and abbreviations and to designate units of measurement.

Vehicle and Test Codes

TEST NUMBER: ATL test designation

CAR NUMBER: ATL vehicle designation

BEFORE: before maintenance data designation

AFTER: after maintenance data designation

YEAR: model year for which vehicle was manufactured

MAKE: first four letters of vehicle make

MODEL: first five letters/numeral(s) of vehicle model, exception: TBIRD is Thunderbird

CYL: number of engine cylinders

CID: cubic inch displacement of engine

BBL: number of barrels in carburetor

ODOMR: number of miles indicated on odometer

INRT: curb weight of vehicle plus 300 lbs, rounded to nearest 250 lb increment for vehicles weighing less than 3000 lbs and to nearest 500 lb increment for 3000 to 6000 lb vehicles, also, dynamometer inertia weight used for emission testing

RDHP: actual horsepower setting established at 50 miles per hour for 1975 FTP as calibrated and determined by coast down technique

A/C: Y indicates vehicle is equipped with air conditioning
N indicates vehicle is not equipped with air conditioning

EVP: Y indicates vehicle is equipped with an evaporative emission control system
N indicates vehicle is not equipped with an evaporative emission control system

EXH: NO indicates vehicle is not equipped with an exhaust emission control system (or it has been removed)
AI indicates vehicle is equipped with an air injection exhaust emission control system
EM indicates vehicle is equipped with engine modifications for exhaust emission control

PCV: Y indicates vehicle is equipped with a positive crankcase ventilation system
N indicates vehicle is not equipped with a positive crankcase ventilation system

TRANS: indicates transmission type, A for automatic, S-3 for standard 3 speed, S-4 for standard 4 speed

Emission Data Units

MPG: miles per gallon as calculated by carbon balance technique from CVS bag data

1975 COMPOSITE: 1975 FTP emission tests results; units are in grams per mile for HC, CO, CO_2, NO_x

SIMULATED 1972 COLD: composite results from COLD TRANSIENT sample bag and COLD STABILIZED sample bag, units are in grams per mile for HC, CO, CO_2, NO_x

SIMULATED 1972 HOT: composite results from HOT TRANSIENT sample bag and COLD STABILIZED sample bag; units are in grams per mile for HC, CO, CO_2, NO_x

COLD TRANSIENT GRAMS: results from COLD TRANSIENT sample bag; unit is total grams in bag

COLD STABILIZED GRAMS: results from COLD STABILIZED sample bag; unit is total grams in bag

HOT TRANSIENT GRAMS: results from HOT TRANSIENT sample bag; unit is total grams in bag

HOT STABILIZED GRAMS: results from HOT STABILIZED sample bag; unit is total grams in bag

SPEED: actual speed at which the vehicle was driven during Key Mode operation

COMPOSITE: composite Key Mode emission data derived from a multiple regression analysis of modal data

CONC: abbreviation for concentration; units are parts per million as carbon for HC, mole percent for CO and CO_2 parts per million for NO_x

MASS: mass emissions as measured in CVS sample bag for each mode; units are grams per mile for HIGH CRUISE and LOW CRUISE and grams per minute for IDLE

ATL CAR NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1	1970	CHEV	CHEVE	8	350	2	37585	3500	11.2	N	N	EM	Y	A
2	1970	FORD	LTD	8	429	4	47496	4000	12.0	Y	N	EM	Y	A
3	1969	PLYM	FURY3	8	318	2	59290	4000	12.0	Y	N	EM	Y	A
4	1969	FORD	LTD	8	429	4	33441	4000	12.0	Y	N	EM	Y	A
*5	1972	CHEV	CAMAR	8	307	2	7879	3500	11.2	N	Y	EM	Y	A
6	1968	PONT	GTO	8	389	4	68841	4000	12.0	Y	N	EM	Y	S-4
*7	1971	PLYM	BARRA	8	318	2	18585	3500	11.2	Y	Y	EM	Y	A
8	1968	FORD	TBIRD	8	429	4	27986	4500	12.7	Y	N	EM	Y	A
*9	1971	CHEV	C-10	8	350	4	12787	4000	12.0	N	N	AI	Y	S-4
10	1969	CHEV	NOVA	8	350	2	32731	3000	10.3	N	N	AI	Y	A
*11	1971	FORD	PINTO	4	122	2	7103	2250	8.8	N	Y	AI	Y	S-4
*12	1972	FORD	GALAX	8	400	2	10393	4000	12.0	Y	Y	AI	Y	A
*13	1972	PLYM	SATEL	8	318	2	8513	3500	11.2	N	Y	EM	Y	A
14	1969	PONT	CATAL	8	400	2	75644	4000	12.0	Y	N	EM	Y	A
15	1968	CHEV	IMPAL	8	327	4	46072	4000	12.0	Y	N	EM	Y	A
16	1970	CHEV	CAPRI	8	400	2	32533	4000	12.0	Y	N	EM	Y	A
17	1969	OLDS	TORON	8	455	4	52867	4500	12.7	Y	N	EM	Y	A
18	1969	FORD	MUSTA	8	428	4	31426	3500	11.2	N	N	AI	Y	A
19	1969	AMMO	440	6	232	1	69119	3500	11.2	N	N	EM	Y	A
*20	1972	CHRY	NEWPO	8	400	2	10730	4500	12.7	Y	Y	EM	Y	A
21	1970	LINC	CONTI	8	460	4	20038	5000	13.4	Y	N	AI	Y	A
22	1970	DATS	510	4	97	2	12449	2500	9.4	N	N	AI	Y	A
23	1970	PLYM	SATEL	8	318	2	12922	3500	11.2	N	N	EM	Y	A
24	1969	FORD	LTD	8	390	2	35655	4000	12.0	Y	N	EM	Y	A
25	1970	PONT	CATAL	8	400	2	17070	5000	13.4	Y	N	EM	Y	A

Table 1A, Test Sample As Equipped

ATL CAR NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
26	1970	OLDS	VISTA	8	350	4	50224	4500	12.7	Y	N	EM	Y	A
*27	1971	FORD	MAVER	6	200	1	16209	2750	9.9	N	Y	EM	Y	A
*28	1971	CHEV	NOVA	6	250	1	15482	3500	11.2	N	Y	EM	Y	A
29	1970	VOLK	SEDAN	4	97	1	27803	2000	8.3	N	N	EM	Y	S-4
*30	1971	TOYO	COROL	4	71	2	28311	2500	9.4	Y	N	AI	Y	S-4
31	1970	DODG	DART	8	318	2	24507	3500	11.2	Y	N	EM	Y	A
32	1970	MERC	MARQU	8	429	2	12956	4500	12.7	N	N	EM	Y	A
33	1969	BUIC	SPORT	8	400	4	39637	4500	12.0	Y	N	EM	Y	A
* 34	1972	CADI	DEVIL	8	472	4	5122	5000	13.4	Y	Y	AI	Y	A
35	1968	FORD	FAIRL	8	289	2	47255	3500	11.2	N	N	EM	Y	A
* 36	1972	CHEV	MONTE	8	402	4	4662	4000	12.0	Y	Y	AI	Y	A
37	1970	AMMO	AMBAS	8	360	2	26651	4000	12.0	Y	N	EM	Y	A
38	1970	FORD	GALAX	8	390	2	58331	4000	12.0	Y	N	EM	Y	A
39	1968	DODG	POLAR	8	318	2	58220	4000	12.0	N	N	EM	Y	A
* 40	1972	FORD	LTD	8	400	2	6450	4000	12.0	Y	Y	EM	Y	A
*41	1971	OLDS	TORON	8	455	4	29035	5000	13.4	Y	Y	EM	Y	A
42	1968	PLYM	FURY2	8	318	2	56018	4000	12.0	Y	N	EM	Y	A
*43	1971	DATS	510	4	97	2	13199	2750	9.9	N	Y	AI	Y	S-4
*44	1972	VOLV	142S	4	121	2	6185	2750	9.9	N	Y	EM	Y	S-4
45	1970	VOLK	1600	4	97	0	48183	2500	9.4	N	N	EM	Y	S-4
*46	1971	DATS	510	4	71	2	24774	2250	8.8	N	N	EM	Y	S-4
47	1969	MERC	COMET	8	302	2	24514	3500	11.2	Y	N	EM	Y	A
48	1968	MERC	COMET	6	200	1	35986	3500	11.2	N	N	AI	Y	S-3
49	1968	CHRY	NEWPO	8	383	4	38455	4500	12.7	Y	N	EM	Y	A
* 50	1971	FORD	PINTO	4	94	1	32609	2250	8.8	N	Y	EM	Y	S-4

Table 1B, Test Sample As Equipped

ATL CAR NO.	YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
*51	1968	OPEL	KADET	4	91	2	46438	2250	8.8	N	N	N	Y	S-4
52	1968	FORD	FAIRL	8	289	2	42332	3500	11.2	Y	N	EM	Y	A
*53	1972	VOLV	142S	4	121	2	19175	2750	9.9	N	Y	EM	Y	S-4
*54	1971	MERC	MONTE	8	400	2	9939	4500	12.7	Y	Y	EM	Y	A
*55	1971	PONT	SAFAR	8	400	4	10868	5000	13.4	Y	Y	EM	Y	A
56	1968	BUIC	SPECI	8	350	2	23493	3500	11.2	N	N	EM	Y	A
57	1969	CHEV	IMPAL	8	350	4	35953	4000	12.0	Y	N	EM	Y	A
58	1969	OLDS	DELTA	8	455	2	11323	4000	12.0	Y	N	EM	Y	A
59	1968	PONT	TEMPE	8	350	2	77968	4000	12.0	Y	N	EM	Y	A
60	1969	DODG	DART	6	225	1	21739	3000	10.3	N	N	EM	Y	A
61	1970	BUIC	ELECT	8	455	4	38759	4500	12.7	Y	N	EM	Y	A
*62	1971	CHEV	IMPAL	8	400	2	13300	4500	12.7	Y	Y	EM	Y	A
63	1969	CHRY	300	8	383	4	34481	4500	12.7	Y	N	EM	Y	A
64	1970	FORD	MAVER	6	250	1	29780	2750	9.9	N	N	EM	Y	A
65	1968	VOLV	144S	4	121	2	17054	3000	10.3	Y	N	EM	Y	A
66	1970	PLYM	FURY	8	440	4	27056	4000	12.0	Y	N	EM	Y	A
*67	1971	FORD	LTD	8	351	2	21739	4500	12.7	Y	Y	EM	Y	A
68	1970	CHEV	CAMAR	8	307	2	25707	3500	11.2	Y	N	EM	Y	S-3
69	1969	VOLK	CAMPM	4	97	1	48310	3000	10.3	N	N	EM	Y	S-4
*70	1971	DODG	COLT	4	97	2	17247	2250	8.8	N	Y	EM	Y	S-4
*71	1968	CHEV	IMPAL	8	307	2	63396	4000	12.0	Y	N	EM	Y	A
72	1969	CHEV	CHEVE	8	396	4	40423	3500	11.2	Y	N	AI	Y	A
73	1968	CHEV	BELAI	8	307	2	72571	4000	12.0	N	N	EM	Y	A
74	1969	VOLK	SEDAN	4	97	1	33994	2000	8.3	N	N	EM	Y	S-4
*75	1972	BUIC	LESAB	8	350	4	10125	4500	12.7	Y	Y	EM	Y	A

Table 1C, Test Sample As Equipped

CARBON MONOXIDE

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
		AS RECEIVED				
GVW						
1800-2799	46.95	26.69	100.68	22.47	78.21	15
2800-3799	65.96	26.35	109.84	27.64	82.20	20
3800-3799	87.55	33.88	194.24	38.44	155.80	35
4800-5799	59.25	20.84	89.78	35.43	54.35	5
MODEL YEAR						
1968	87.11	44.75	194.24	27.64	166.60	15
1969	80.79	21.98	125.89	37.26	88.62	17
1970	65.69	28.03	109.84	22.61	87.24	18
1971	55.47	32.76	144.04	22.47	121.57	15
1972	68.95	32.59	119.75	28.98	90.77	10
MANUFACTURER						
AM. MOTORS	78.12	35.11	102.95	53.30	49.65	2
BUICK	84.22	13.60	103.57	72.04	31.53	4
CADILLAC	46.66	46.92	46.66	46.66	0.00	1
CHEVROLET	80.39	40.79	194.24	39.50	154.74	14
CHRYSLER	103.29	20.91	119.75	79.76	39.99	3
DODGE	52.30	16.22	75.15	39.06	36.09	4
FORD	70.76	45.13	167.50	22.47	145.04	15
IMPERIAL	0.00	*****	-*****	*****	-*****	0
LINCOLN	89.78	90.51	89.78	89.78	0.00	1
MERCURY	62.24	20.85	87.74	37.26	50.48	4
OLDSMOBILE	91.20	28.46	125.89	56.64	69.25	4
PLYMOUTH	74.21	27.85	121.41	35.45	85.97	6
PONTIAC	71.73	21.83	88.38	35.43	52.95	5
IMPORTS	52.57	24.67	87.56	22.61	64.95	12
		AFTER MAINTENANCE				
GVW						
1800-2799	47.24	24.21	98.52	19.08	79.44	15
2800-3799	54.47	20.96	99.40	21.75	77.65	20
3800-3799	77.14	34.92	197.00	35.94	161.06	35
4800-5799	55.71	12.83	70.27	35.62	34.65	5
MODEL YEAR						
1968	80.79	46.56	197.00	21.75	175.24	15
1969	67.80	21.49	104.98	37.34	67.64	17
1970	56.26	20.93	86.85	24.85	62.00	18
1971	48.39	27.10	130.32	19.08	111.23	15
1972	67.32	26.48	127.42	35.94	91.48	10
MANUFACTURER						
AM. MOTORS	55.11	5.09	58.70	51.51	7.19	2
BUICK	62.85	25.73	86.85	37.43	49.41	4
CADILLAC	53.92	54.02	53.92	53.92	0.00	1
CHEVROLET	73.50	40.36	197.00	33.19	163.81	14
CHRYSLER	103.03	21.44	127.42	87.17	40.25	3
DODGE	49.40	11.31	64.67	37.34	27.33	4
FORD	60.82	40.21	150.08	19.08	130.99	15
IMPERIAL	0.00	*****	-*****	*****	-*****	0
LINCOLN	70.27	72.97	70.27	70.27	0.00	1
MERCURY	51.04	16.21	74.97	39.75	35.21	4
OLDSMOBILE	82.78	21.02	104.98	56.76	48.22	4
PLYMOUTH	62.13	24.74	99.92	32.15	67.76	6
PONTIAC	58.86	20.19	86.66	35.62	51.04	5
IMPORTS	53.35	24.15	98.52	24.85	73.67	12

Table 2, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

HYDROCARBONS

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
		AS RECEIVED				
GVW						
1800-2799	4.927	3.772	16.52	2.41	14.11	15
2800-3799	6.246	5.931	30.14	3.26	26.88	20
3800-3799	6.023	2.437	15.56	1.70	13.86	35
4800-5799	3.558	1.114	4.29	1.59	2.70	5
MODEL YEAR						
1968	7.673	4.059	16.52	3.82	12.71	15
1969	6.845	6.055	30.14	3.98	26.16	17
1970	4.824	2.217	12.02	2.41	9.61	18
1971	4.424	1.674	8.95	2.41	6.54	15
1972	4.277	2.021	8.28	1.59	6.69	10
MANUFACTURER						
AM. MOTORS	4.514	.753	5.05	3.98	1.06	2
BUICK	5.018	1.023	6.15	3.82	2.33	4
CADILLAC	1.591	1.612	1.59	1.59	0.00	1
CHEVROLET	8.077	7.261	30.14	1.70	28.44	14
CHRYSLER	6.568	.233	6.74	6.30	0.44	3
DODGE	4.160	.612	5.04	3.69	1.35	4
FORD	5.284	1.932	9.21	2.80	6.41	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	3.823	3.834	3.82	3.82	0.00	1
MERCURY	5.410	1.795	7.97	4.01	3.96	4
OLDSMOBILE	4.980	.710	5.53	3.94	1.59	4
PLYMOUTH	4.758	1.508	7.63	3.26	4.37	6
PONTIAC	6.502	3.312	12.13	4.14	7.99	5
IMPORTS	5.133	3.973	16.52	2.41	14.11	12
		AFTER MAINTENANCE				
GVW						
1800-2799	4.554	3.844	17.02	2.20	14.82	15
2800-3799	4.479	1.956	11.82	2.73	9.10	20
3800-3799	5.276	1.855	12.40	1.88	10.53	35
4800-5799	3.830	1.528	5.16	1.33	3.83	5
MODEL YEAR						
1968	6.696	3.640	17.02	2.90	14.13	15
1969	4.723	.947	6.73	2.73	4.00	17
1970	4.789	2.210	11.82	2.43	9.40	18
1971	3.629	1.163	5.71	2.20	3.51	15
1972	4.034	2.090	8.69	1.33	7.35	10
MANUFACTURER						
AM. MOTORS	4.552	.425	4.85	4.25	0.60	2
BUICK	4.157	.942	5.18	2.90	2.28	4
CADILLAC	1.332	1.342	1.33	1.33	0.00	1
CHEVROLET	5.378	3.090	12.40	1.88	10.53	14
CHRYSLER	6.233	.676	6.73	5.46	1.27	3
DODGE	4.090	1.402	5.37	2.73	2.64	4
FORD	4.560	1.755	8.30	2.34	5.97	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	4.977	5.060	4.98	4.98	0.00	1
MERCURY	4.462	.886	5.37	3.47	1.89	4
OLDSMOBILE	4.444	.495	5.04	3.83	1.21	4
PLYMOUTH	4.501	1.488	6.50	2.86	3.63	6
PONTIAC	5.445	1.376	7.65	3.85	3.81	5
IMPORTS	5.087	4.164	17.02	2.20	14.82	12

Table 3, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

OXIDES OF NITROGEN

CATEGORY	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM	RANGE	ITEMS
		AS RECEIVED				
GVW						
1800-2799	2.720	1.181	5.894	1.226	4.668	15
2800-3799	3.091	.993	4.743	1.445	3.298	20
3800-3799	3.089	.996	5.263	1.295	3.968	35
4800-5799	3.880	1.675	6.596	2.292	4.303	5
MODEL YEAR						
1968	2.972	1.113	5.263	1.295	3.968	15
1969	3.460	1.059	5.031	1.437	3.594	17
1970	2.925	.732	4.094	1.445	2.649	18
1971	3.046	1.523	6.596	1.285	5.311	15
1972	2.840	.936	4.415	1.226	3.189	10
MANUFACTURER						
AM. MOTORS	3.865	.212	4.015	3.716	.299	2
BUICK	2.970	1.290	4.899	2.199	2.700	4
CADILLAC	2.771	2.775	2.771	2.771	0.000	1
CHEVROLET	3.138	1.036	5.263	1.295	3.968	14
CHRYSLER	2.434	1.032	3.498	1.437	2.061	3
DODGE	2.735	1.257	4.550	1.818	2.732	4
FORD	3.435	1.303	5.894	1.285	4.609	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	2.292	2.302	2.292	2.292	0.000	1
MERCURY	3.299	1.357	4.743	1.465	3.278	4
OLDSMOBILE	2.659	.666	3.647	2.219	1.428	4
PLYMOUTH	2.881	.400	3.337	2.412	.926	6
PONTIAC	3.699	1.899	6.596	1.692	4.903	5
IMPORTS	2.679	.741	3.761	1.226	2.535	12
		AFTER MAINTENANCE				
GVW						
1800-2799	2.756	.961	4.603	1.415	3.189	15
2800-3799	3.095	.912	4.889	1.558	3.331	20
3800-3799	2.950	.943	5.183	1.487	3.696	35
4800-5799	4.177	1.285	5.505	2.760	2.745	5
MODEL YEAR						
1968	2.827	.820	4.285	1.538	2.747	15
1969	3.319	1.020	5.183	1.940	3.243	17
1970	3.326	.902	5.399	1.583	3.815	18
1971	2.974	1.194	5.505	1.415	4.091	15
1972	2.407	.828	4.172	1.526	2.646	10
MANUFACTURER						
AM. MOTORS	4.187	.501	4.542	3.833	.709	2
BUICK	3.267	1.283	5.183	2.455	2.728	4
CADILLAC	2.760	2.775	2.760	2.760	0.000	1
CHEVROLET	2.684	.881	4.285	1.538	2.747	14
CHRYSLER	2.323	.719	3.152	1.877	1.275	3
DODGE	3.091	1.105	4.397	1.705	2.691	4
FORD	3.129	1.047	4.603	1.415	3.189	15
IMPERIAL	0.000	*****	-****	*****	-****	0
LINCOLN	4.203	4.382	4.203	4.203	0.000	1
MERCURY	3.629	1.169	4.889	2.298	2.591	4
OLDSMOBILE	2.761	.352	3.020	2.243	.776	4
PLYMOUTH	3.045	.915	4.563	2.032	2.531	6
PONTIAC	3.745	1.688	5.505	1.947	3.558	5
IMPORTS	2.714	.675	3.501	1.526	1.975	12

Table 4, Emission Data by GVW, Model Year, Manufacturer, Before and After Maintenance

DYNAMOMETER EMISSION RESULTS
USING 1975 FEDERAL TEST PROCEDURES

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0001	4.88	4.11	0.77	102.2	78.1	24.1	1.45	1.58	-0.14
0002	5.08	8.30	-3.22	65.6	83.6	-18.1	3.26	2.01	1.25
0003	4.86	6.03	-1.17	65.6	78.4	-12.8	3.34	2.43	0.91
0004	6.21	5.53	0.68	86.2	54.4	31.8	4.26	4.22	0.04
0005	5.02	4.61	0.41	49.2	49.5	-0.3	2.22	1.56	0.66
0006	12.13	7.65	4.48	88.4	43.2	45.2	2.34	2.22	0.12
0007	4.21	3.23	0.98	79.7	40.6	39.1	2.41	2.64	-0.23
0008	9.21	7.41	1.80	167.5	150.1	17.4	2.51	1.58	0.93
0009	6.35	5.65	0.70	73.4	79.1	-5.7	2.66	2.04	0.62
0010	5.83	4.59	1.24	106.4	76.0	30.4	3.53	3.30	0.23
0011	8.95	3.85	5.10	100.7	59.3	41.3	1.28	1.41	-0.13
0012	4.66	3.28	1.38	105.2	54.2	51.0	4.41	3.25	1.17
0013	3.26	2.86	0.40	67.7	60.1	7.6	3.28	2.03	1.24
0014	5.21	5.22	-0.02	80.6	66.8	13.8	3.77	3.65	0.12
0015	5.21	5.84	-0.63	50.5	101.3	-50.9	3.97	2.51	1.47
0016	5.41	4.22	1.19	74.1	62.2	11.8	3.65	3.33	0.33
0017	5.16	4.49	0.67	87.1	93.3	-6.2	2.31	2.24	0.07
0018	6.54	5.61	0.94	91.9	99.4	-7.5	1.99	3.35	-1.36
0019	3.98	4.25	-0.27	53.3	51.5	1.8	4.01	4.54	-0.53
0020	6.30	5.46	0.84	119.8	127.4	-7.7	2.37	1.88	0.49
0021	3.82	4.98	-1.15	89.8	70.3	19.5	2.29	4.20	-1.91
0022	3.22	2.50	0.72	33.3	37.3	-3.9	3.76	3.16	0.60
0023	4.01	3.83	0.19	35.4	32.2	3.3	2.96	3.01	-0.05
0024	5.20	4.81	0.39	74.5	78.0	-3.5	5.03	3.43	1.61
0025	4.29	5.16	-0.87	67.8	62.0	5.8	4.09	5.40	-1.31
0026	5.29	5.04	0.25	95.2	76.1	19.1	2.22	2.85	-0.63
0027	2.80	2.34	0.46	24.2	19.1	5.1	5.89	4.60	1.29
0028	3.42	2.91	0.51	39.5	33.2	6.3	3.87	3.06	0.81
0029	2.58	2.78	-0.21	44.4	38.0	6.3	2.43	3.00	-0.58
0030	4.27	3.28	0.99	46.2	42.8	3.5	2.12	3.24	-1.12
0031	3.82	5.23	-1.41	39.1	48.0	-9.0	1.97	3.00	-1.03
0032	7.97	3.98	3.99	65.8	39.8	26.1	3.49	3.06	0.44
0033	6.15	4.20	1.95	72.0	37.4	34.6	4.90	5.18	-0.28
0034	1.59	1.33	0.26	46.7	53.9	-7.3	2.77	2.76	0.01
0035	3.96	3.41	0.55	27.6	21.8	5.9	4.33	3.52	0.81
0036	1.70	1.88	-0.18	42.4	52.1	-9.7	2.89	1.99	0.90
0037	5.05	4.85	0.19	103.0	58.7	44.2	3.72	3.83	-0.12
0038	3.93	4.15	-0.22	50.4	39.8	10.6	2.98	3.07	-0.09
0039	5.04	5.37	-0.33	75.2	64.7	10.5	2.60	3.26	-0.66
0040	3.33	3.14	0.19	38.4	35.9	2.5	4.18	4.17	0.01

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 5A, Emission Data by Car by 1975 FTP

DYNAMOMETER EMISSION RESULTS
USING 1975 FEDERAL TEST PROCEDURES

CAR #	HYDROCARBONS BEFORE	HYDROCARBONS AFTER	HYDROCARBONS IMP	CARBON MONOXIDE BEFORE	CARBON MONOXIDE AFTER	CARBON MONOXIDE IMP	OXIDES OF NITROGEN BEFORE	OXIDES OF NITROGEN AFTER	OXIDES OF NITROGEN IMP
0041	3.94	3.83	0.11	56.6	56.8	-0.1	3.65	3.02	0.63
0042	7.63	6.50	1.13	121.4	99.9	21.5	2.88	3.60	-0.72
0043	2.76	5.58	-2.82	37.9	36.2	1.6	2.83	3.50	-0.68
0044	4.03	8.69	-4.65	29.0	90.0	-61.0	2.60	2.20	0.40
0045	2.41	2.43	-0.02	22.6	24.9	-2.2	2.86	3.01	-0.15
0046	2.41	2.20	0.21	27.1	28.6	-1.5	1.65	1.75	-0.10
0047	5.34	5.37	-0.03	37.3	42.6	-5.3	4.74	4.89	-0.15
0048	4.33	5.03	-0.70	87.7	75.0	12.8	1.46	2.30	-0.83
0049	6.74	6.51	0.23	79.8	94.5	-14.7	3.50	3.15	0.35
0050	4.60	2.50	2.10	22.5	25.3	-2.8	2.36	3.08	-0.72
0051	16.52	17.02	-0.50	86.7	98.5	-11.8	3.49	2.97	0.51
0052	5.57	5.27	0.30	36.6	33.6	3.0	3.68	3.60	0.08
0053	8.28	4.73	3.54	87.6	66.9	20.7	1.23	1.53	-0.30
0054	4.01	3.47	0.53	58.1	46.8	11.3	3.49	4.27	-0.78
0055	4.14	3.85	0.30	35.4	35.6	-0.2	6.60	5.51	1.09
0056	3.82	2.90	0.92	78.8	44.0	34.8	2.20	2.45	-0.26
0057	5.07	3.72	1.35	90.0	40.2	49.9	2.96	2.62	0.34
0058	5.53	4.42	1.11	125.9	105.0	20.9	2.46	2.93	-0.47
0059	6.74	5.34	1.40	86.5	86.7	-0.2	1.69	1.95	-0.25
0060	4.08	2.73	1.36	52.2	37.3	14.9	4.55	4.40	0.15
0061	5.51	5.18	0.34	82.4	86.8	-4.4	2.33	2.73	-0.40
0062	4.54	2.99	1.55	44.0	44.6	-0.6	3.39	3.29	0.09
0063	6.66	6.73	-0.07	110.3	87.2	23.2	1.44	1.94	-0.50
0064	2.96	3.08	-0.12	26.1	27.4	-1.3	3.67	4.17	-0.50
0065	4.72	3.51	1.21	57.9	42.0	15.9	3.36	3.47	-0.11
0066	4.58	4.56	0.02	75.4	61.5	13.9	2.42	4.56	-2.14
0067	6.27	5.71	0.56	144.0	130.3	13.7	1.67	1.49	0.18
0068	12.02	11.82	0.20	109.8	86.1	23.8	3.09	3.90	-0.81
0069	5.97	4.03	1.94	84.9	68.3	16.7	3.02	2.72	0.30
0070	3.69	3.03	0.66	42.7	47.5	-4.8	1.82	1.71	0.11
0071	15.56	12.40	3.16	194.2	197.0	-2.8	1.30	1.54	-0.24
0072	30.14	4.28	25.86	81.7	69.9	11.8	3.69	2.57	1.12
0073	7.92	6.27	1.65	67.9	59.6	8.3	5.26	4.28	0.98
0074	4.42	4.29	0.13	73.3	66.8	6.6	2.81	2.02	0.80
0075	4.60	4.35	0.25	103.6	83.1	20.5	2.46	2.71	-0.25
MEAN	5.70	4.82	0.88	71.79	63.68	8.1	3.07	3.03	0.04
PERCENT			15.44			11.3			1.30
STD. DEV.	3.88	2.39		33.56	30.99		1.09	1.00	
MAXIMUM	30.14	17.02		194.24	197.00		6.60	5.50	
MINIMUM	1.59	1.33		22.47	19.08		1.23	1.42	
RANGE	28.55	15.69		171.77	177.91		5.37	4.09	
COMPUTED T	-2.33			-3.67			-0.420		

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 5B, Emission Data by Car by 1975 FTP

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(CONCENTRATION)

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0001	3754	3895	-141	3.38	3.48	-0.10	413	636	-223
0002	4147	4049	98	2.70	3.22	-0.52	713	487	225
0003	3172	3013	159	1.43	2.10	-0.67	830	460	370
0004	4430	3322	1107	2.27	0.93	1.34	948	1019	-71
0005	3370	2928	442	1.31	1.50	-0.19	512	358	154
0006	3892	1577	2315	1.75	0.17	1.58	761	615	146
0007	2675	2295	380	1.80	0.94	0.85	611	668	-56
0008	5461	3631	1829	3.90	3.68	0.22	478	294	184
0009	2670	3322	-652	0.76	1.39	-0.62	455	572	-116
0010	3933	3046	887	3.13	2.09	1.04	863	818	45
0011	7350	4412	2938	4.37	1.79	2.58	364	549	-185
0012	2864	2215	648	2.46	1.20	1.26	832	713	118
0013	2715	2230	484	1.73	1.65	0.08	829	427	401
0014	2646	2598	48	0.92	0.57	0.34	1045	1122	-77
0015	3336	4037	-701	0.80	2.47	-1.67	895	593	302
0016	3215	3058	156	1.89	2.12	-0.23	908	918	-9
0017	2124	2124	-0	0.94	1.08	-0.14	490	479	11
0018	2859	1808	1051	2.63	2.15	0.49	328	532	-203
0019	3117	3748	-630	1.89	1.76	0.13	1019	1170	-150
0020	3635	4001	-366	2.88	4.11	-1.22	698	410	288
0021	1325	3165	-1839	1.39	1.87	-0.49	299	643	-344
0022	2245	1203	1041	0.71	0.82	-0.10	647	416	231
0023	3267	3057	210	0.96	1.06	-0.10	641	560	81
0024	3555	3136	419	2.03	1.79	0.24	1187	898	289
0025	1999	2700	-701	1.11	1.04	0.07	784	1249	-465
0026	3067	3695	-627	2.42	1.96	0.46	620	774	-154
0027	2927	2615	312	0.95	0.78	0.16	1031	980	50
0028	2384	1941	443	1.05	0.82	0.23	1089	818	270
0029	1767	1881	-113	1.11	1.16	-0.05	885	1187	-301
0030	3997	2307	1690	1.39	0.68	0.71	512	787	-274
0031	3674	4244	-570	2.22	1.73	0.48	561	916	-355
0032	3590	3321	268	1.93	1.48	0.45	909	806	102
0033	3260	2422	838	1.43	0.63	0.79	1206	1470	-263
0034	697	613	83	1.00	1.37	-0.37	399	345	53
0035	3282	3282	0	0.70	0.76	-0.06	1293	956	336
0036	1152	1223	-71	1.22	1.24	-0.02	487	394	92
0037	3221	3216	4	1.79	1.19	0.61	1244	1108	135
0038	2412	2926	-514	0.94	1.13	-0.19	596	675	-79
0039	3157	3458	-301	2.37	2.53	-0.16	801	905	-103
0040	2298	2179	119	1.16	0.92	0.24	973	895	77

AUTOMOTIVE TESTING LABORATORIES, INC.
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Table 6A, Emission Data by Car by CKMC

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(CONCENTRATION)

	HYDROCARBONS			CARBON MONOXIDE			OXIDES OF NITROGEN		
CAR #	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP	BEFORE	AFTER	IMP
0041	1761	1059	702	0.55	0.43	0.11	655	480	174
0042	3113	3060	52	1.49	1.28	0.21	1056	1130	-74
0043	1002	1772	-770	0.48	0.55	-0.07	478	591	-112
0044	2732	4541	-1809	1.15	3.60	-2.46	547	423	123
0045	1444	1069	375	0.17	0.17	-0.00	829	714	114
0046	3339	3045	294	0.81	1.07	-0.26	594	741	-147
0047	3953	3630	323	0.48	0.64	-0.17	1290	1533	-243
0048	3453	3900	-446	2.81	2.35	0.46	448	599	-150
0049	3972	3973	-1	2.75	3.21	-0.47	738	518	220
0050	2932	2808	124	0.60	0.82	-0.22	741	783	-41
0051	9255	8743	511	4.63	5.17	-0.54	800	562	238
0052	3794	4609	-814	0.66	1.01	-0.35	896	898	-1
0053	8009	4098	3910	4.64	3.47	1.17	291	359	-68
0054	2216	1949	266	0.87	0.58	0.29	1103	1109	-6
0055	2888	2336	552	0.86	0.54	0.32	1289	1194	95
0056	2519	1890	628	1.67	0.65	1.02	594	614	-20
0057	3398	2464	933	2.18	0.49	1.69	1039	964	74
0058	3125	2725	400	3.18	2.55	0.63	586	665	-79
0059	3360	3151	209	2.02	2.17	-0.15	609	633	-23
0060	2901	2609	292	1.87	1.91	-0.03	1320	1121	198
0061	3297	3105	192	1.45	1.52	-0.07	593	797	-204
0062	1782	2143	-361	1.48	1.27	0.21	735	926	-190
0063	4114	3998	115	4.60	4.09	0.51	392	378	14
0064	2642	2914	-272	1.09	1.21	-0.12	694	864	-170
0065	3045	3114	-68	2.12	1.99	0.13	960	1051	-91
0066	2736	2986	-250	2.42	1.83	0.59	690	1070	-380
0067	4456	3752	704	5.54	4.28	1.26	501	376	125
0068	7206	7483	-276	2.79	2.47	0.32	967	1152	-184
0069	2700	2334	366	1.77	1.34	0.44	982	984	-1
0070	3651	2608	1042	3.18	3.44	-0.26	580	593	-13
0071	5492	5043	449	4.97	4.61	0.35	589	678	-88
0072	14079	1793	12285	1.44	1.28	0.16	838	523	314
0073	5690	4792	898	2.05	1.71	0.34	1325	1179	145
0074	3160	2230	929	2.67	2.00	0.67	1103	867	235
0075	2649	2974	-325	1.53	1.41	0.11	717	697	20
MEAN	3474	3048	426	1.92	1.74	0.18	770	766	4
PERCENT			12.3			9.4			0.05
STD. DEV.	1910	1262		1.17	1.12		271	284	
MAXIMUM	14079	8744		5.54	5.17		1325	1534	
MINIMUM	697	614		0.17	0.17		291	294	
RANGE	13382	8130		5.37	5.00		1033	1239	

AUTOMOTIVE TESTING LABORATORIES, INC.
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Table 6B, Emission Data by Car by CKMC

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(MASS)

CAR #	HYDROCARBONS BEFORE	HYDROCARBONS AFTER	HYDROCARBONS IMP	CARBON MONOXIDE BEFORE	CARBON MONOXIDE AFTER	CARBON MONOXIDE IMP	OXIDES OF NITROGEN BEFORE	OXIDES OF NITROGEN AFTER	OXIDES OF NITROGEN IMP
0001	3.19	2.06	1.13	29.1	32.7	-3.6	1.56	1.73	-0.17
0002	2.54	2.15	0.39	23.0	29.3	-6.2	2.11	1.34	0.77
0003	1.32	1.44	-0.11	19.9	23.2	-3.2	2.13	1.32	0.81
0004	2.39	1.81	0.58	27.3	16.0	11.3	3.11	2.95	0.16
0005	1.19	1.36	-0.17	10.7	13.8	-3.2	1.11	1.06	0.06
0006	1.64	0.95	0.69	18.6	2.6	16.1	2.09	2.76	-0.67
0007	1.33	1.10	0.23	23.9	11.5	12.4	1.76	1.73	0.04
0008	3.33	2.14	1.19	61.3	50.1	11.2	1.58	1.18	0.40
0009	1.25	1.39	-0.14	9.1	18.8	-9.8	1.68	1.90	-0.22
0010	1.77	1.44	0.33	35.4	23.6	11.9	2.20	2.10	0.09
0011	1.65	1.20	0.45	45.3	16.4	28.9	0.87	1.12	-0.24
0012	1.53	1.27	0.27	39.7	18.6	21.0	2.72	2.01	0.72
0013	1.33	1.16	0.17	39.0	25.3	13.7	2.35	1.22	1.13
0014	1.55	1.46	0.09	13.8	9.5	4.3	3.08	3.33	-0.25
0015	1.83	2.13	-0.31	11.3	31.2	-20.0	3.16	1.96	1.20
0016	1.58	1.53	0.06	19.7	22.9	-3.3	2.53	2.29	0.24
0017	1.29	1.35	-0.06	13.4	14.4	-1.0	2.00	1.82	0.18
0018	2.02	1.53	0.49	38.3	38.8	-0.5	1.44	1.86	-0.41
0019	1.23	1.79	-0.56	17.3	17.1	0.2	2.50	2.67	-0.17
0020	2.04	2.21	-0.17	39.9	52.3	-12.4	2.13	1.31	0.82
0021	1.01	1.94	-0.93	21.4	27.0	-5.6	1.24	2.57	-1.33
0022	0.89	0.37	0.52	6.7	7.4	-0.7	1.91	1.18	0.73
0023	1.41	1.62	-0.21	10.2	13.9	-3.7	1.96	1.65	0.32
0024	1.82	1.50	0.32	24.0	22.0	2.0	3.54	2.76	0.78
0025	1.01	1.54	-0.53	14.7	12.4	2.3	2.41	3.64	-1.23
0026	1.75	1.50	0.24	27.9	17.8	10.0	1.88	2.14	-0.25
0027	1.04	0.72	0.33	8.7	6.4	2.3	2.63	2.48	0.15
0028	0.99	0.84	0.15	7.8	8.1	-0.3	2.68	2.00	0.68
0029	0.50	0.54	-0.04	7.7	7.9	-0.3	1.77	2.15	-0.38
0030	0.96	0.81	0.15	9.8	7.5	2.2	1.27	1.91	-0.64
0031	1.81	2.03	-0.23	22.9	16.1	6.8	1.22	2.26	-1.04
0032	1.89	1.70	0.18	21.7	15.4	6.2	2.73	2.47	0.27
0033	1.77	1.06	0.70	18.4	9.8	8.7	4.42	4.78	-0.36
0034	0.66	0.59	0.07	23.3	33.6	-10.3	2.07	1.70	0.37
0035	1.57	1.66	-0.10	9.1	10.5	-1.5	3.50	2.86	0.64
0036	0.79	0.78	0.01	25.2	24.9	0.3	2.19	1.82	0.38
0037	1.80	1.72	0.08	28.7	19.3	9.4	3.14	3.29	-0.15
0038	1.22	1.65	-0.44	14.5	18.0	-3.5	2.02	2.35	-0.33
0039	1.52	1.61	-0.08	23.9	24.6	-0.7	2.02	2.19	-0.17
0040	1.33	1.26	0.07	19.9	15.8	4.1	3.46	3.04	0.43

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Table 7A, Emission Data by Car by CKMM

DYNAMOMETER EMISSION RESULTS
USING KEY MODE TEST PROCEDURES
(MASS)

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0041	1.09	0.79	0.30	10.5	9.9	0.6	2.68	1.93	0.75
0042	1.66	1.44	0.21	17.5	14.2	3.3	3.10	3.28	-0.18
0043	0.41	0.67	-0.27	4.3	4.6	-0.3	1.41	1.49	-0.08
0044	0.93	1.28	-0.36	8.9	26.2	-17.4	1.31	0.71	0.60
0045	0.48	0.47	0.00	0.9	1.0	-0.1	2.15	1.71	0.45
0046	0.73	0.77	-0.04	5.8	7.3	-1.5	1.10	1.48	-0.38
0047	2.15	1.69	0.46	6.1	7.3	-1.2	3.63	4.16	-0.53
0048	1.36	1.60	-0.24	32.9	27.6	5.2	1.24	1.60	-0.37
0049	2.25	2.30	-0.05	34.9	44.4	-9.5	2.42	1.64	0.78
0050	1.05	0.79	0.25	4.1	6.5	-2.4	1.55	1.97	-0.42
0051	6.73	6.04	0.69	39.3	51.5	-12.2	1.75	1.35	0.40
0052	1.87	2.16	-0.29	8.3	14.5	-6.2	2.66	2.50	0.16
0053	3.37	1.30	2.07	38.3	28.7	9.6	0.71	0.88	-0.17
0054	1.01	1.26	-0.26	12.4	9.0	3.4	3.58	3.57	0.01
0055	1.78	1.56	0.22	13.1	10.2	2.9	4.95	4.48	0.47
0056	1.22	0.96	0.25	20.2	7.4	12.8	2.01	2.10	-0.09
0057	1.58	1.26	0.32	26.6	5.5	21.0	2.76	2.53	0.23
0058	1.80	1.50	0.31	46.2	33.1	13.1	2.32	2.17	0.14
0059	1.87	1.82	0.05	22.0	26.2	-4.3	1.64	1.00	0.63
0060	1.26	1.12	0.14	18.5	16.8	1.6	2.92	2.51	0.41
0061	1.82	1.82	0.00	24.0	21.9	2.1	2.09	2.52	-0.43
0062	1.00	1.42	-0.42	21.0	16.6	4.5	1.83	2.73	-0.90
0063	3.06	1.91	1.15	46.6	46.9	-0.3	1.06	1.10	-0.04
0064	0.98	0.94	0.04	9.7	8.7	1.0	1.81	2.08	-0.28
0065	1.08	0.80	0.29	16.8	15.5	1.4	2.07	2.23	-0.16
0066	1.59	2.16	-0.56	33.1	25.5	7.6	2.10	2.71	-0.61
0067	2.27	1.84	0.43	56.7	38.7	18.1	1.25	0.89	0.36
0068	4.57	4.48	0.08	37.9	32.3	5.6	2.65	3.25	-0.60
0069	0.76	0.77	-0.01	13.4	11.2	2.1	1.59	1.50	0.09
0070	0.91	0.77	0.13	12.4	11.3	1.1	1.17	1.35	-0.18
0071	2.90	2.85	0.05	47.9	44.3	3.6	1.75	1.74	0.01
0072	11.20	0.80	10.40	25.7	20.9	4.8	3.61	2.20	1.41
0073	2.28	2.75	-0.46	21.7	19.2	2.5	3.82	3.40	0.42
0074	0.85	0.74	0.11	16.0	12.2	3.7	2.40	2.13	0.27
0075	1.60	1.67	-0.06	26.2	21.5	4.7	2.57	2.24	0.33
MEAN	1.78	1.51	0.27	22.16	19.81	2.35	2.24	2.16	0.08
PERCENT			15.17			10.60			3.57
STD. DEV.	1.45	0.83		13.08	12.08		0.84	0.84	
MAXIMUM	11.20	6.04		61.29	52.35		4.94	4.78	
MINIMUM	0.41	0.37		0.92	1.03		0.71	0.70	
RANGE	10.79	5.67		60.37	51.31		4.24	4.08	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 7B, Emission Data by Car by CKMM

IDLE CONCENTRATION

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0001	3477	4169	-692	4.02	3.75	0.27	104	108	-4
0002	4482	2854	1627	2.43	0.88	1.55	88	196	-108
0003	3647	4169	-521	1.26	3.06	-1.80	102	75	26
0004	9036	3578	5458	6.41	1.10	5.31	64	173	-109
0005	6324	4899	1425	3.75	3.70	0.04	51	55	-4
0006	7645	1428	6217	5.56	0.15	5.41	34	34	-0
0007	4864	2332	2531	6.30	0.94	5.36	63	78	-15
0008	13903	6533	7370	8.37	7.88	0.49	54	60	-6
0009	8688	8688	0	2.74	4.39	-1.65	42	60	-18
0010	5907	2889	3018	5.93	2.83	3.09	96	157	-61
0011	17206	4725	12480	8.47	3.06	5.41	9	79	-69
0012	4516	2541	1975	6.41	2.74	3.67	85	106	-21
0013	4064	2889	1175	5.26	4.29	0.97	83	77	6
0014	3578	2743	834	2.70	0.88	1.82	105	162	-57
0015	3056	5559	-2503	0.52	6.09	-5.57	108	77	31
0016	3306	3028	278	1.23	1.81	-0.58	74	119	-44
0017	2106	1706	400	0.09	0.10	-0.02	54	109	-55
0018	8862	3821	5040	4.59	3.23	1.36	53	181	-128
0019	4134	5733	-1599	3.18	0.55	2.63	121	279	-158
0020	3821	4169	-347	4.79	6.14	-1.35	81	69	11
0021	2889	3995	-1106	2.62	2.86	-0.24	103	88	15
0022	2778	1713	1064	0.11	1.82	-1.71	203	109	94
0023	3404	2228	1175	0.70	0.16	0.54	119	164	-45
0024	5246	1776	3470	5.16	1.14	4.02	96	137	-41
0025	5733	6880	-1147	5.01	3.88	1.13	109	196	-87
0026	1109	3473	-2364	5.16	2.60	2.56	62	76	-14
0027	3508	2732	775	4.14	3.57	0.56	95	102	-7
0028	4864	3682	1181	4.91	3.15	1.77	80	79	1
0029	2503	2854	-351	2.50	2.35	0.15	73	67	5
0030	10774	1351	9422	2.90	0.40	2.50	43	69	-25
0031	2118	2848	-730	0.69	0.35	0.34	210	188	21
0032	3473	1480	1993	2.90	0.49	2.41	113	239	-126
0033	6324	2002	4322	5.46	0.73	4.73	74	318	-244
0034	1358	1393	-34	2.66	3.23	-0.57	58	60	-1
0035	3543	3271	271	2.95	2.66	0.29	144	129	15
0036	1584	1324	260	3.33	2.82	0.51	48	56	-7
0037	3543	2784	758	5.06	1.56	3.50	114	216	-102
0038	1741	2367	-626	0.35	0.20	0.15	153	145	7
0039	2245	2465	-219	0.55	0.31	0.25	146	151	-4
0040	2819	1671	1147	2.90	0.76	2.14	102	192	-89

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 8A, Emission Data by Car by IC

IDLE CONCENTRATION

CAR #	HYDROCARBONS BEFORE	AFTER	IMP	CARBON MONOXIDE BEFORE	AFTER	IMP	OXIDES OF NITROGEN BEFORE	AFTER	IMP
0041	2426	2228	198	1.03	1.01	0.02	60	82	-22
0042	2562	2489	73	0.99	0.65	0.34	110	87	22
0043	1007	976	31	0.86	0.37	0.49	46	58	-12
0044	3473	8758	-5284	2.82	6.99	-4.18	59	45	14
0045	2419	1685	733	0.21	0.21	0.00	61	67	-6
0046	3376	3473	-97	1.13	1.49	-0.36	81	78	3
0047	4864	2645	2218	0.21	0.18	0.03	105	149	-43
0048	1393	3237	-1843	2.24	0.41	1.82	56	240	-183
0049	4238	4169	69	3.40	4.06	-0.66	51	67	-15
0050	4343	2670	1672	0.16	1.42	-1.27	94	116	-21
0051	29965	25862	4102	8.47	8.47	0.00	22	44	-22
0052	1497	3126	-1628	0.43	1.61	-1.18	163	136	26
0053	23637	5212	18425	8.47	6.17	2.30	44	63	-19
0054	2750	2054	695	1.91	0.92	0.98	100	184	-83
0055	3508	2958	549	3.10	1.94	1.17	103	97	6
0056	4273	1532	2740	5.68	0.51	5.16	61	120	-58
0057	5559	1727	3832	7.13	0.11	7.02	82	195	-112
0058	4343	2437	1905	6.07	2.67	3.39	72	117	-44
0059	2952	2297	654	0.48	0.61	-0.13	121	214	-93
0060	3126	1821	1304	0.98	0.09	0.89	232	200	31
0061	2152	2402	-249	0.13	0.66	-0.52	111	157	-46
0062	1463	2141	-678	0.12	0.41	-0.30	807	315	491
0063	3752	3126	625	3.70	1.62	2.08	75	88	-12
0064	1828	3125	-1297	0.08	0.18	-0.10	108	478	-369
0065	3960	3995	-34	3.57	3.40	0.17	111	125	-14
0066	2784	2750	34	3.42	2.09	1.33	64	62	2
0067	5038	2778	2259	6.79	2.94	3.85	78	98	-19
0068	22594	24054	-1460	8.47	8.47	0.00	42	38	4
0069	4099	2124	1975	4.29	2.26	2.03	74	49	25
0070	11330	5177	6153	7.39	5.69	1.71	60	53	6
0071	7680	6081	1599	5.50	3.02	2.48	151	438	-287
0072	17588	3132	14455	4.96	3.10	1.86	48	40	8
0073	10774	4725	6049	5.02	0.17	4.85	69	279	-210
0074	7819	3612	4206	7.07	3.23	3.84	21	77	-56
0075	3202	2778	423	3.15	1.49	1.65	125	164	-39
MEAN	5493	3788	1705	3.51	2.28	1.23	97	131	-34
PERCENT			31.04			35.04			-35.05
STD. DEV.	5296	3862		2.49	2.08		93	87	
MAXIMUM	29965	25863		8.47	8.47		808	478	
MINIMUM	1007	976		0.08	0.09		10	35	
RANGE	28958	24887		8.39	8.38		798	443	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

Table 8B, Emission Data by Car by IC

Analysis	HC Before (g/m)	HC After (g/m)	Improvement (g/m)	Improvement (%)
Mean	5.70	4.82	0.88	15.40
Standard Deviation	3.88	2.39		
Maximum	30.14	17.02		
Minimum	1.59	1.33		
Range	28.55	15.69		
Computed T Value	-2.33			

Analysis	CO Before (g/m)	CO After (g/m)	Improvement (g/m)	Improvement (%)
Mean	71.79	63.68	8.10	11.30
Standard Deviation	33.56	30.99		
Maximum	194.24	197.00		
Minimum	22.47	19.08		
Range	171.77	177.91		
Computed T Value	-3.67			

Analysis	NO_x Before (g/m)	NO_x After (g/m)	Improvement (g/m)	Improvement (%)
Mean	3.07	3.03	0.04	1.30
Standard Deviation	1.09	1.00		
Maximum	6.60	5.50		
Minimum	1.23	1.42		
Range	5.37	4.09		
Computed T Value	-0.42			

For a decrease (single-ended test), $t_{0.99} = -2.326$

given d.f = ∞ (Reference 9)

Table 9A, Analysis of 1975 FTP Emission Data

Analysis	HC Before (g/m)	HC After (g/m)	Improvement (g/m)	Improvement (%)
Mean	1.78	1.51	0.27	15.17
Standard Deviation	1.45	0.83		
Maximum	11.20	6.04		
Minimum	0.41	0.37		
Range	10.79	5.67		

Analysis	CO Before (g/m)	CO After (g/m)	Improvement (g/m)	Improvement (%)
Mean	22.16	19.81	2.35	10.60
Standard Deviation	13.08	12.08		
Maximum	61.29	52.35		
Minimum	0.92	1.03		
Range	60.37	51.31		

Analysis	NO_x Before (g/m)	NO_x After (g/m)	Improvement (g/m)	Improvement (%)
Mean	2.24	2.16	0.08	3.57
Standard Deviation	0.84	0.84		
Maximum	4.94	4.78		
Minimum	0.71	0.70		
Range	4.24	4.08		

Table 9B, Analysis of Key Mode Mass Emission Data

Analysis	HC Before (ppm Carbon)	HC After (ppm Carbon)	Improvement (ppmC)	Improvement (%)
Mean	3474	3048	426	12.30
Standard Deviation	1910	1262		
Maximum	14079	8744		
Minimum	697	614		
Range	13382	8130		

Analysis	CO Before (mole %)	CO After (mole %)	Improvement (mole%)	Improvement (%)
Mean	1.92	1.74	0.18	9.40
Standard Deviation	1.17	1.12		
Maximum	5.54	5.17		
Minimum	0.17	0.17		
Range	5.37	5.00		

Analysis	NO_x Before (ppm)	NO_x After (ppm)	Improvement (ppm)	Improvement (%)
Mean	770	766	4	0.05
Standard Deviation	271	284		
Maximum	1325	1534		
Minimum	291	294		
Range	1033	1239		

Table 9C, Analysis of Key Mode Concentration Emission Data

Analysis	HC Before (ppm Carbon)	HC After (ppm Carbon)	Improvement (ppmC)	(%)
Mean	5493	3788	1705	31.04
Standard Deviation	5296	3862		
Maximum	29965	25863		
Minimum	1007	976		
Range	28958	24887		

Analysis	CO Before (mole %)	CO After (mole %)	Improvement (mole%)	(%)
Mean	3.51	2.28	1.23	35.04
Standard Deviation	2.49	2.08		
Maximum	8.47	8.47		
Minimum	0.08	0.09		
Range	8.39	8.38		

Analysis	NO_x Before (ppm)	NO_x After (ppm)	Improvement (ppm)	(%)
Mean	97	131	-34	-35.05
Standard Deviation	93	87		
Maximum	808	478		
Minimum	10	35		
Range	798	443		

Table 9D, Analysis of Idle Concentration Emission Data

TEST NUMBER: FCC19
CAR NUMBER: 0001

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CHEVE	8	350	2	37585	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.88	102.24	453.9	1.45	14.14
SIMULATED 1972 COLD	5.60	109.21	463.6	1.37	13.64
SIMULATED 1972 HOT	4.34	96.98	446.6	1.50	14.53
COLD TRANSIENT GRAMS	25.03	405.15	1590.8	5.73	14.09
COLD STABILIZED GRAMS	16.99	413.96	1886.1	4.53	13.24
HOT TRANSIENT GRAMS	15.58	313.39	1463.5	6.74	16.21
HOT STABILIZED GRAMS	15.20	285.09	1976.9	6.29	13.86

* *

ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3925	3.93	12.27	1106	
		MASS	4.08	63.79	482.19	4.24	14.96
LOW CRUISE	30	CONC	3080	0.59	14.23	581	
		MASS	5.78	9.11	351.28	3.17	23.20
IDLE	0	CONC	3477	4.02	12.19	104	
		MASS	2.46	18.87	95.18	0.10	0.00
COMPOSITE	25	CONC	3754	3.38		413	
		MASS	3.19	29.07		1.56	

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: 00026
CAR NUMBER: 0001

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CHEVE	8	350	2	37607	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.11	78.11	440.3	1.56	15.46
SIMULATED 1972 COLD	4.80	89.60	446.9	1.54	14.77
SIMULATED 1972 HOT	3.59	69.43	435.4	1.62	16.02
COLD TRANSIENT GRAMS	21.20	405.00	1513.3	5.94	14.66
COLD STABILIZED GRAMS	14.81	267.03	1638.5	5.59	14.88
HOT TRANSIENT GRAMS	12.10	253.72	1426.9	6.55	17.44
HOT STABILIZED GRAMS	15.33	286.43	1659.7	5.49	14.54

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3821	3.79	12.40	1203	
		MASS	4.18	64.56	471.92	4.45	15.18
LOW CRUISE	30	CONC	3925	2.74	13.00	1318	
		MASS	3.68	56.91	407.50	3.94	17.51
IDLE	0	CONC	4169	3.75	12.32	108	
		MASS	0.95	15.96	87.71	0.08	0.00
COMPOSITE	25	CONC	3855	3.48		636	
		MASS	2.06	32.66		1.73	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NLMBER: ECC2C
CAR NLMBER: CCC2

BEFCRE

DYNAMCMETER EMISSICN RESLLTS LSING
1975 FEDERAL TEST PRCCEDLRES

YEAR	MAKE	MCDEL	CYL	CID	BBL	CCCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	FCRD	LTD	8	429	4	47496	400C	12.C	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CC2	NCX	MPG
1975 CCMPOSITE	5.C8	65.5E	5E4.4	3.26	12.66
SIMULATEC 1972 CCLC	5.97	98.56	6CE.7	3.15	11.38
SIMULATED 1972 HCT	4.41	4C.69	566.1	3.34	13.83
CCLD TRANSIENT GRAMS	29.44	622.36	2162.7	12.12	10.C5
CCLD STABILIZEC GRAMS	15.36	116.88	24C2.6	11.47	13.C1
HOT TRANSIENT GRAMS	17.71	188.29	1643.3	13.58	14.81
HOT STABILIZED GRAMS	14.45	94.96	2293.4	11.11	13.78

* *

ANALYSIS CF KEY-MCDE EMISSICNS

	SPEED		HC	CO	CC2	NCX	MPG
HIGH CRUISE	49	CCNC	4238	3.31	14.44	1434	
		MASS	6.52	60.19	543.22	5.55	13.53
LCW CRUISE	33	CCNC	2958	C.65	16.32	1473	
		MASS	3.1C	16.32	49C.74	4.81	16.92
IDLE	C	CCNC	4482	2.43	15.C5	88	
		MASS	0.8C	9.58	72.62	C.C5	C.CC
CCMPCSITE	27	CCNC	4147	2.7C		713	
		MASS	2.54	23.C2		2.11	

AUTCMCTIVE TESTING LABCRATCRIES, INC.
1990C E. CCLFAX, AURCRA, CCLC. 8CC11

TEST NUMBER: EC027
CAR NUMBER: 0002

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	FORD	LTD	8	429	4	47517	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	8.30	83.64	614.5	2.01	11.53
SIMULATED 1972 COLD	13.59	107.14	623.2	1.91	10.67
SIMULATED 1972 HOT	4.32	65.91	608.0	2.08	12.28
COLD TRANSIENT GRAMS	85.99	593.53	2013.8	6.56	10.10
COLD STABILIZED GRAMS	15.93	210.05	2659.9	7.73	11.28
HOT TRANSIENT GRAMS	16.44	284.24	1899.9	7.88	13.55
HOT STABILIZED GRAMS	14.77	164.57	2609.3	8.20	11.76

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4516	4.48	12.13	884	
		MASS	5.11	91.97	473.86	3.52	14.03
LOW CRUISE	33	CONC	2958	0.98	14.44	855	
		MASS	2.75	21.59	432.41	2.59	16.75
IDLE	0	CONC	2854	0.88	14.44	196	
		MASS	0.83	5.95	118.57	0.17	0.00
COMPOSITE	27	CONC	4049	3.22		487	
		MASS	2.15	29.26		1.34	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: 0024
CAR NUMBER: 0003

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	PLYM	FURY3	8	318	2	59290	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		4.86	65.62	522.1	3.34	13.90
SIMULATED 1972 COLD		6.33	86.02	524.2	3.16	13.11
SIMULATED 1972 HOT		3.75	50.24	520.6	3.47	14.57
COLD TRANSIENT	GRAMS	32.61	448.99	1774.2	12.04	12.59
COLD STABILIZED	GRAMS	14.90	196.15	2157.2	11.63	13.65
HOT TRANSIENT	GRAMS	13.23	180.63	1747.1	14.42	15.68
HOT STABILIZED	GRAMS	15.06	193.87	2118.2	11.22	13.88

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3056	1.70	13.85	1859	
		MASS	2.79	44.83	474.74	6.20	16.07
LOW CRUISE	33	CONC	3132	0.79	14.74	1569	
		MASS	2.43	16.52	392.66	4.05	20.89
IDLE	0	CONC	3647	1.26	13.45	102	
		MASS	0.56	10.73	80.67	0.05	0.00
COMPOSITE	27	CONC	3172	1.43		830	
		MASS	1.32	19.92		2.13	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC032
CAR NUMBER: 0003

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1969	PLYM	FURY3	8	318	2	59299	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.03	78.44	525.0	2.43	13.34
SIMULATED 1972 COLD	8.66	99.65	536.4	2.34	12.36
SIMULATED 1972 HOT	4.04	62.43	516.4	2.50	14.20
COLD TRANSIENT GRAMS	48.73	518.22	1776.2	7.96	11.84
COLD STABILIZED GRAMS	16.25	229.15	2246.7	9.58	12.90
HOT TRANSIENT GRAMS	14.08	239.11	1626.2	9.14	15.89
HOT STABILIZED GRAMS	16.03	267.26	2085.0	8.58	13.42

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2715	2.09	13.65	1222	
		MASS	2.88	52.17	490.29	4.32	15.32
LOW CRUISE	33	CONC	3028	1.56	13.85	720	
		MASS	2.47	30.64	360.24	1.82	21.40
IDLE	0	CONC	4169	3.06	12.72	75	
		MASS	0.69	10.49	66.96	0.05	0.00
COMPOSITE	27	CONC	3013	2.10		460	
		MASS	1.44	23.17		1.32	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0025
CAR NUMBER: CC04

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	LTD	8	429	4	33441	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.21	86.20	538.8	4.26	12.83
SIMULATED 1972 COLD	6.72	92.29	555.9	4.11	12.33
SIMULATED 1972 HOT	5.84	81.60	526.0	4.38	13.24
COLD TRANSIENT GRAMS	26.23	319.03	1967.5	17.71	12.74
COLD STABILIZED GRAMS	24.14	373.14	2201.6	13.13	11.97
HOT TRANSIENT GRAMS	19.63	238.86	1743.1	19.69	14.91
HOT STABILIZED GRAMS	21.34	309.62	2152.1	13.06	12.67

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3369	1.49	14.99	2518	
		MASS	4.08	41.77	549.65	10.18	14.18
LOW CRUISE	33	CONC	3647	1.09	15.36	1628	
		MASS	3.46	28.47	446.37	4.40	17.74
IDLE	0	CONC	9036	6.41	11.79	64	
		MASS	1.53	21.35	61.94	0.08	0.00
COMPOSITE	27	CONC	4430	2.27		948	
		MASS	2.39	27.26		3.11	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC031
CAR NUMBER: 0004

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	LTD	8	429	4	33461	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.53	54.38	611.7	4.22	12.46
SIMULATED 1972 COLD	5.64	66.50	630.1	4.20	11.83
SIMULATED 1972 HOT	5.45	45.24	597.8	4.24	12.98
COLD TRANSIENT GRAMS	23.64	292.89	2198.9	18.54	11.89
COLD STABILIZED GRAMS	18.67	205.87	2527.0	12.54	11.78
HOT TRANSIENT GRAMS	22.20	133.45	1956.3	18.82	14.54
HOT STABILIZED GRAMS	16.84	138.37	2466.4	13.49	12.53

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3300	1.07	13.79	2788	
		MASS	3.77	38.71	483.83	9.53	16.00
LOW CRUISE	33	CONC	3035	0.22	14.00	1531	
		MASS	2.80	16.34	421.28	4.13	19.54
IDLE	0	CONC	3578	1.10	13.59	173	
		MASS	0.85	7.01	113.12	0.14	0.00
COMPOSITE	27	CONC	3322	0.93		1019	
		MASS	1.81	16.00		2.95	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0029
CAR NUMBER: CC05

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHEV	CAMER	8	307	2	7879	3500	11.2	N	Y	AI	Y	S-3

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.02	49.21	449.8	2.22	16.40
SIMULATED 1972 COLD	5.41	51.34	457.5	2.21	16.04
SIMULATED 1972 HOT	4.72	47.60	444.0	2.22	16.68
COLD TRANSIENT GRAMS	22.95	236.59	1545.6	9.46	16.34
COLD STABILIZED GRAMS	17.66	148.44	1886.0	7.14	15.76
HOT TRANSIENT GRAMS	17.72	208.59	1444.2	9.53	17.78
HOT STABILIZED GRAMS	16.24	149.03	1867.6	6.87	15.92

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2917	0.89	14.14	2285	
		MASS	1.81	13.78	301.28	4.44	27.10
LOW CRUISE	30	CONC	1344	0.43	13.85	228	
		MASS	0.95	4.93	342.11	0.50	25.24
IDLE	0	CONC	6324	3.75	12.27	51	
		MASS	0.97	10.43	61.21	0.03	0.00
COMPOSITE	25	CONC	3370	1.31		512	
		MASS	1.19	10.66		1.11	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC037
CAR NUMBER: 0005

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHEV	CAMER	8	307	2	7898	3500	11.2	N	Y	AI	Y	S-3

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.61	49.50	471.2	1.56	15.80
SIMULATED 1972 COLD	5.09	54.30	480.4	1.57	15.31
SIMULATED 1972 HOT	4.25	45.88	464.3	1.55	16.20
COLD TRANSIENT GRAMS	22.76	262.97	1556.1	6.85	15.92
COLD STABILIZED GRAMS	15.39	144.29	2047.0	4.92	14.76
HOT TRANSIENT GRAMS	16.49	199.81	1434.9	6.69	18.05
HOT STABILIZED GRAMS	14.61	150.26	1933.9	4.81	15.47

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2715	1.17	14.53	1492	
		MASS	3.08	22.79	312.16	3.97	24.90
LOW CRUISE	23	CONC	976	0.53	14.14	200	
		MASS	1.06	13.07	287.72	0.74	28.58
IDLE	0	CONC	4899	3.70	12.19	55	
		MASS	0.68	10.47	62.00	0.04	0.00
COMPOSITE	20	CONC	2928	1.50		358	
		MASS	1.36	13.84		1.06	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC030
CAR NUMBER: C006

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	PONT	GTO	8	389	4	68841	4000	12.0	Y	Y	AI	N	S-4

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		12.13	88.38	561.3	2.34	11.74
SIMULATED 1972 COLD		18.21	116.48	568.2	2.22	10.74
SIMULATED 1972 HOT		7.55	67.18	576.2	2.44	12.62
COLD TRANSIENT	GRAMS	102.29	533.32	1567.9	5.14	10.39
COLD STABILIZED	GRAMS	34.27	340.29	2443.6	7.48	11.11
HOT TRANSIENT	GRAMS	22.35	163.53	1877.6	10.80	14.74
HOT STABILIZED	GRAMS	32.25	318.70	2418.9	7.49	11.35

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3300	1.07	13.79	2788	
		MASS	1.87	3.36	496.98	6.62	17.52
LOW CRUISE	30	CONC	1428	0.30	13.36	817	
		MASS	1.79	7.80	406.88	3.34	20.96
IDLE	0	CONC	7645	5.56	7.01	34	
		MASS	1.53	26.51	56.95	0.03	0.00
COMPOSITE	26	CONC	3892	1.75		761	
		MASS	1.64	18.64		2.09	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0038
CAR NUMBER: 0006

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INPT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	PONT	GTO	8	389	4	68860	4000	12.0	Y	Y	AI	N	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	7.65	43.21	504.9	2.22	14.92
SIMULATED 1972 COLD	12.34	73.02	516.1	2.15	13.29
SIMULATED 1972 HOT	4.12	20.72	496.4	2.27	16.43
COLD TRANSIENT GRAMS	75.95	461.78	1736.4	10.09	12.03
COLD STABILIZED GRAMS	16.59	85.83	2134.4	6.06	14.77
HOT TRANSIENT GRAMS	14.29	69.56	1588.7	10.96	18.65
HOT STABILIZED GRAMS	15.54	72.57	1946.3	6.12	16.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC.	1567	0.17	13.00	2556	
		MASS	1.92	4.47	483.76	9.56	17.92
LOW CRUISE	30	CONC	1897	0.25	12.72	443	
		MASS	1.96	5.26	407.60	3.28	21.10
IDLE	0	CONC	1428	0.15	9.74	34	
		MASS	0.41	1.35	69.53	0.05	0.00
COMPOSITE	26	CONC	1577	0.17		615	
		MASS	0.95	2.57		2.76	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC035
CAR NUMBER: 0007

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	PLYM	BARRA	8	318	2	18595	3500	11.2	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.21	79.68	512.0	2.41	13.69
SIMULATED 1972 COLD	4.60	88.56	523.6	2.35	13.15
SIMULATED 1972 HOT	3.91	72.98	503.2	2.46	14.13
COLD TRANSIENT GRAMS	18.92	328.61	1852.4	9.42	13.39
COLD STABILIZED GRAMS	15.58	335.56	2075.0	8.17	12.93
HOT TRANSIENT GRAMS	13.76	211.81	1698.7	10.29	15.67
HOT STABILIZED GRAMS	14.58	303.43	2036.5	8.17	13.40

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2019	0.82	13.85	1376	
		MASS	2.20	21.24	516.03	5.17	16.01
LOW CRUISE	30	CONC	3324	1.02	13.73	1183	
		MASS	2.68	22.94	372.51	3.27	21.35
IDLE	0	CONC	4864	6.30	10.46	63	
		MASS	0.78	25.10	68.13	0.05	0.00
COMPOSITE	25	CONC	2675	1.80		611	
		MASS	1.33	23.89		1.76	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC046
CAR NUMBER: 0007

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	PLYM	BARRA	8	318	2	18607	3500	11.2	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.23	40.62	527.6	2.64	14.80
SIMULATED 1972 COLD	3.50	48.22	540.2	2.55	14.20
SIMULATED 1972 HOT	3.02	34.89	518.1	2.71	15.29
COLD TRANSIENT GRAMS	14.11	212.69	1879.1	9.71	14.40
COLD STABILIZED GRAMS	12.17	148.97	2172.4	9.44	14.02
HOT TRANSIENT GRAMS	10.50	112.73	1713.6	10.85	16.90
HOT STABILIZED GRAMS	10.79	107.69	2175.2	9.05	14.42

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2176	1.04	14.74	1415	
		MASS	2.37	26.46	523.17	5.23	15.56
LOW CRUISE	33	CONC	3028	0.80	15.05	1338	
		MASS	2.27	14.88	339.97	2.99	24.04
IDLE	0	CONC	2332	0.94	15.02	78	
		MASS	0.41	5.02	73.70	0.05	0.00
COMPOSITE	26	CONC	2295	0.94		668	
		MASS	1.10	11.49		1.73	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC36
CAR NUMBER: CCC8

BEFCRE

DYNAMOMETER EMISSICN RESULTS USING
1975 FEDERAL TEST PRCCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	FORD	TBIRC	8	429	4	27986	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CC2	NOX	MPG
1975 COMPOSITE	9.21	167.5C	6CC.5	2.51	9.57
SIMULATED 1972 COLD	10.49	175.52	639.5	2.63	9.39
SIMULATED 1972 HOT	8.24	161.46	571.8	2.43	10.46
COLD TRANSIENT GRAMS	42.84	558.28	2282.4	11.7C	9.86
COLD STABILIZED GRAMS	35.84	758.1C	2514.2	7.59	8.98
HOT TRANSIENT GRAMS	25.98	452.83	1774.5	1C.2C	12.66
HOT STABILIZED GRAMS	33.6C	712.82	2265.4	7.68	9.82

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CC	CC2	NCX	MPG
HIGH CRUISE	50	CONC	3578	3.1C	12.67	1540	
		MASS	3.75	72.55	465.25	5.57	15.07
LOW CRUISE	35	CCNC	3612	3.06	12.86	6C5	
		MASS	2.99	63.83	373.88	1.64	18.41
IDLE	0	CCNC	13903	8.37	7.85	54	
		MASS	3.20	56.43	78.41	0.C5	C.0C
COMPOSITE	28	CONC	5461	3.9C		478	
		MASS	3.33	61.29		1.58	

AUTOMOTIVE TESTING LABCRATCRIES, INC.
19900 E. CCLFAX, AURORA, CCLC. 80011

TEST NUMBER: E0045
CAR NUMBER: 0008

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	FORD	TBIRD	8	429	4	28008	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	7.41	150.06	593.9	1.58	10.44
SIMULATED 1972 COLD	9.17	163.60	605.8	1.49	9.98
SIMULATED 1972 HOT	6.09	139.87	584.9	1.65	10.81
COLD TRANSIENT GRAMS	41.58	593.98	2056.9	6.16	10.41
COLD STABILIZED GRAMS	27.19	633.05	2466.6	5.04	9.61
HOT TRANSIENT GRAMS	18.47	416.01	1900.3	7.32	12.44
HOT STABILIZED GRAMS	23.51	576.13	2419.3	5.03	10.09

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	50	CONC	2958	2.82	13.56	1029	
		MASS	3.68	70.29	541.21	4.40	13.43
LOW CRUISE	35	CONC	3167	3.57	13.14	272	
		MASS	2.86	71.93	403.65	0.81	16.94
IDLE	0	CONC	6533	7.86	9.49	60	
		MASS	1.40	38.42	74.83	0.06	0.00
COMPOSITE	28	CONC	3631	3.68		294	
		MASS	2.14	50.10		1.18	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0043
CAR NUMBER: 0009

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV	C-10	8	350	4	12787	4000	12.0	N	N	AI	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.35	73.42	526.5	2.66	13.45
SIMULATED 1972 COLD	7.29	89.87	543.2	2.62	12.59
SIMULATED 1972 HOT	5.64	61.02	513.8	2.69	14.19
COLD TRANSIENT GRAMS	31.30	417.37	1900.3	12.12	12.24
COLD STABILIZED GRAMS	23.37	256.62	2174.0	7.54	12.93
HOT TRANSIENT GRAMS	18.94	201.00	1679.7	12.67	15.82
HOT STABILIZED GRAMS	22.40	245.26	2131.8	8.14	13.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1167	0.25	13.76	1492	
		MASS	1.34	7.91	550.35	6.04	15.71
LOW CRUISE	33	CONC	2437	0.90	14.14	573	
		MASS	2.09	22.24	420.43	1.62	19.28
IDLE	0	CONC	8688	2.74	9.97	42	
		MASS	1.09	7.26	41.26	0.05	0.00
COMPOSITE	27	CONC	2670	0.76		455	
		MASS	1.25	9.07		1.68	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0050
CAR NUMBER: 0009

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV	C-10	8	350	4	12805	4000	12.0	N	N	AI	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.65	79.10	553.6	2.04	12.80
SIMULATED 1972 COLD	6.73	95.49	568.6	2.05	12.03
SIMULATED 1972 HOT	4.83	66.73	542.3	2.03	13.44
COLD TRANSIENT GRAMS	30.96	445.50	1890.1	8.86	12.09
COLD STABILIZED GRAMS	19.53	270.68	2374.7	6.52	11.98
HOT TRANSIENT GRAMS	16.69	229.80	1692.2	8.74	15.43
HOT STABILIZED GRAMS	19.52	291.46	2134.9	5.65	12.92

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1984	0.73	14.14	1743	
		MASS	2.30	19.42	531.49	6.55	15.64
LOW CRUISE	33	CONC	3098	0.98	12.72	797	
		MASS	2.75	24.42	396.32	2.17	20.08
IDLE	0	CONC	8688	4.39	10.55	60	
		MASS	0.81	17.62	68.07	0.06	0.00
COMPOSITE	27	CONC	3322	1.39		572	
		MASS	1.39	18.82		1.90	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0044
CAR NUMBER: 0010

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	NOVA	8	350	2	32731	3000	10.3	N	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.83	106.44	473.8	3.53	13.50
SIMULATED 1972 COLD	7.65	125.06	485.8	3.26	12.60
SIMULATED 1972 HOT	4.46	92.39	464.7	3.73	14.27
COLD TRANSIENT GRAMS	37.31	523.84	1608.5	11.06	12.75
COLD STABILIZED GRAMS	20.07	414.10	2035.0	13.36	12.47
HOT TRANSIENT GRAMS	13.35	278.85	1450.2	14.64	16.84
HOT STABILIZED GRAMS	18.08	374.53	1800.6	13.69	14.02

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ANALYSIS OF KEY-MODE EMISSIONS

SPEED			HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3404	2.58	14.06	2247	
		MASS	3.14	57.72	447.17	7.01	16.26
LOW CRUISE	30	CONC	4099	3.20	13.56	1453	
		MASS	3.06	56.43	336.54	3.34	20.48
IDLE	0	CONC	5907	5.93	11.54	96	
		MASS	1.02	23.08	64.99	0.06	0.00
COMPOSITE	25	CONC	3933	3.13		863	
		MASS	1.77	35.44		2.20	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0049
CAR NUMBER: 0010

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	HDHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	NOVA	8	350	2	32739	3000	10.3	N	N	AI	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		4.59	76.04	474.4	3.30	14.64
SIMULATED 1972 COLD		6.55	99.93	482.4	3.09	13.49
SIMULATED 1972 HOT		3.11	58.02	468.4	3.45	15.64
COLD TRANSIENT	GRAMS	35.90	482.69	1627.8	11.11	13.00
COLD STABILIZED	GRAMS	13.22	266.78	1990.2	12.06	13.99
HOT TRANSIENT	GRAMS	10.14	168.37	1522.9	13.83	17.87
HOT STABILIZED	GRAMS	12.18	220.21	1874.2	11.69	15.18

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3073	2.05	13.17	2146	
		MASS	2.86	47.79	408.44	6.49	18.08
LOW CRUISE	30	CONC	3132	2.02	12.67	1261	
		MASS	2.44	33.18	329.68	3.22	22.86
IDLE	0	CONC	2889	2.83	11.95	157	
		MASS	0.71	12.43	89.63	0.13	0.00
COMPOSITE	25	CONC	3046	2.09		818	
		MASS	1.44	23.59		2.10	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0047
CAR NUMBER: 0011

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	PINTO	4	122	2	7103	2250	6.8	N	Y	AI	Y	S-4

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		8.95	100.68	240.2	1.28	20.87
SIMULATED 1972 COLD		10.13	110.14	240.2	1.19	19.99
SIMULATED 1972 HOT		8.06	93.53	240.1	1.36	21.58
COLD TRANSIENT	GRAMS	39.62	412.55	826.8	4.56	20.31
COLD STABILIZED	GRAMS	36.37	413.52	974.9	4.34	19.71
HOT TRANSIENT	GRAMS	24.06	287.97	825.8	5.85	24.00
HOT STABILIZED	GRAMS	34.28	401.23	929.4	3.80	20.55

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	4864	3.06	12.86	1666	
		MASS	2.68	104.33	264.33	3.54	20.39
LOW CRUISE	23	CONC	7124	7.42	9.74	176	
		MASS	3.03	83.52	163.63	0.30	29.23
IDLE	0	CONC	17206	8.47	6.33	9	
		MASS	1.02	15.60	21.62	0.02	0.00
COMPOSITE	20	CONC	7350	4.37		364	
		MASS	1.65	45.34		0.87	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0055
CAR NUMBER: CC11

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	PINTO	4	122	2	7122	2250	6.8	N	Y	AI	Y	S-4

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.85	59.35	271.8	1.41	23.61
SIMULATED 1972 COLD		4.29	65.89	274.6	1.38	22.74
SIMULATED 1972 HOT		3.52	54.41	269.7	1.44	24.31
COLD TRANSIENT	GRAMS	18.36	265.73	920.3	5.58	23.29
COLD STABILIZED	GRAMS	13.81	228.45	1139.0	4.76	22.24
HOT TRANSIENT	GRAMS	12.62	179.63	683.8	6.05	26.96
HOT STABILIZED	GRAMS	12.62	218.96	1076.6	4.73	23.47

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	4238	1.09	14.00	2401	
		MASS	2.41	18.68	163.98	4.48	44.31
LOW CRUISE	23	CONC	5038	4.72	11.79	238	
		MASS	2.34	55.11	210.86	0.40	29.21
IDLE	0	CONC	4725	3.06	13.08	79	
		MASS	0.53	8.85	51.94	0.05	0.00
COMPOSITE	20	CONC	4412	1.79		549	
		MASS	1.20	16.41		1.12	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC48
CAR NUMBER: CC12

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	FORD	GALAX	8	400	2	10393	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.66	105.20	583.9	4.41	11.66
SIMULATED 1972 COLD	4.76	112.82	603.5	4.37	11.19
SIMULATED 1972 HOT	4.58	99.45	565.1	4.45	12.04
COLD TRANSIENT GRAMS	17.84	384.10	2135.7	17.88	11.63
COLD STABILIZED GRAMS	17.88	462.06	2390.8	14.66	10.80
HOT TRANSIENT GRAMS	16.44	283.78	1877.6	18.53	13.68
HOT STABILIZED GRAMS	16.50	444.68	2265.4	12.39	11.35

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2506	1.81	14.11	2518	
		MASS	2.71	49.10	521.89	9.22	14.66
LOW CRUISE	33	CONC	2430	0.95	14.47	1174	
		MASS	1.33	24.03	414.88	3.29	19.49
IDLE	0	CONC	4516	6.41	10.79	85	
		MASS	1.07	38.63	98.64	0.11	0.00
COMPOSITE	27	CONC	2864	2.46		832	
		MASS	1.53	39.65		2.72	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0054
CAR NUMBER: 0012

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	FORD	GALAX	8	400	2	10413	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.28	54.23	623.5	3.25	12.38
SIMULATED 1972 COLD	3.63	64.72	644.8	3.20	11.75
SIMULATED 1972 HOT	3.02	46.31	607.4	3.28	12.91
COLD TRANSIENT GRAMS	15.33	296.16	2212.7	12.77	11.92
COLD STABILIZED GRAMS	11.86	189.22	2623.6	11.20	11.59
HOT TRANSIENT GRAMS	10.76	158.13	1931.8	13.43	14.68
HOT STABILIZED GRAMS	11.63	179.90	2509.0	10.61	12.12

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2193	0.98	14.23	2247	
		MASS	2.46	33.59	518.90	6.72	19.37
LOW CRUISE	33	CONC	1804	0.51	14.47	894	
		MASS	1.71	9.48	418.44	2.45	20.30
IDLE	0	CONC	2541	2.74	13.33	106	
		MASS	0.70	14.33	113.35	0.10	0.00
COMPOSITE	27	CONC	2215	1.20		713	
		MASS	1.27	18.63		2.01	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0052
CAR NUMBER: 0013

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	PLYM	SATEL	8	318	2	8513	3500	11.2	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.26	67.70	525.1	3.28	13.79
SIMULATED 1972 COLD	3.65	80.62	542.9	3.04	13.08
SIMULATED 1972 HOT	2.96	57.96	518.8	3.46	14.38
COLD TRANSIENT GRAMS	16.00	354.50	1774.8	13.21	13.64
COLD STABILIZED GRAMS	11.39	250.12	2296.8	9.56	12.58
HOT TRANSIENT GRAMS	10.84	184.57	1594.0	16.36	16.95
HOT STABILIZED GRAMS	12.78	270.65	2046.5	11.98	13.65

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2361	0.95	13.91	2378	
		MASS	2.39	22.94	464.45	7.91	17.53
LOW CRUISE	30	CONC	2778	1.36	14.03	1261	
		MASS	2.19	159.30	146.00	3.02	22.09
IDLE	0	CONC	4064	5.26	11.16	83	
		MASS	0.77	24.65	86.54	0.06	0.00
COMPOSITE	25	CONC	2715	1.73		829	
		MASS	1.33	39.03		2.35	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0061
CAR NUMBER: 0013

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1972	PLYM	SATAL	8	318	2	8539	3500	11.2	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.86	60.14	545.0	2.03	13.73
SIMULATED 1972 COLD	3.16	67.93	563.3	2.02	13.10
SIMULATED 1972 HOT	2.64	54.26	531.2	2.05	14.25
COLD TRANSIENT GRAMS	13.07	286.43	1936.1	8.24	13.39
COLD STABILIZED GRAMS	10.61	223.01	2286.6	6.88	12.83
HOT TRANSIENT GRAMS	9.21	183.97	1695.7	8.46	16.14
HOT STABILIZED GRAMS	10.42	241.60	2173.0	6.29	13.26

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2037	1.16	13.76	1106	
		MASS	2.23	41.76	485.65	3.95	15.95
LOW CRUISE	30	CONC	2402	0.98	14.00	676	
		MASS	1.91	21.14	365.50	1.68	22.00
IDLE	0	CONC	2889	4.29	11.66	77	
		MASS	0.60	19.62	85.86	0.06	0.00
COMPOSITE	25	CONC	2230	1.65		427	
		MASS	1.16	25.35		1.22	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC053
CAR NUMBER: 0014

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	PONT	CATAL	8	400	2	75644	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.21	80.58	541.6	3.77	12.89
SIMULATED 1972 COLD	6.29	100.63	561.4	3.52	12.04
SIMULATED 1972 HOT	4.39	65.46	527.3	3.96	13.62
COLD TRANSIENT GRAMS	28.93	496.40	1955.1	12.01	11.48
COLD STABILIZED GRAMS	18.26	258.30	2251.2	14.36	12.63
HOT TRANSIENT GRAMS	14.64	232.67	1778.2	15.36	14.84
HOT STABILIZED GRAMS	17.51	219.87	2227.2	14.41	13.05

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2280	0.43	14.00	2711	
		MASS	2.71	11.43	519.41	9.66	16.31
LOW CRUISE	33	CONC	3508	1.29	13.79	1783	
		MASS	3.29	24.33	387.27	4.88	20.43
IDLE	0	CONC	3578	2.70	12.45	105	
		MASS	0.83	12.86	92.73	0.09	0.00
COMPOSITE	27	CONC	2646	0.92		1045	
		MASS	1.55	13.76		3.08	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC060
CAR NUMBER: CC14

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	PONT	CATAL	8	400	2	75671	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.22	66.83	579.8	3.65	12.70
SIMULATED 1972 COLD	6.64	92.55	591.3	3.23	11.75
SIMULATED 1972 HOT	4.15	47.43	571.2	3.97	13.52
COLD TRANSIENT GRAMS	32.94	529.21	1965.3	9.72	11.20
COLD STABILIZED GRAMS	16.82	164.88	2469.1	14.52	12.33
HOT TRANSIENT GRAMS	14.33	190.82	1815.0	15.26	15.05
HOT STABILIZED GRAMS	16.01	122.48	2470.5	14.84	12.64

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2430	0.47	14.23	2935	
		MASS	2.91	11.68	537.62	10.69	15.76
LOW CRUISE	33	CONC	3473	1.00	13.76	1821	
		MASS	3.04	25.99	389.95	4.84	20.22
IDLE	0	CONC	2743	0.88	13.42	162	
		MASS	0.63	5.82	106.89	0.12	0.00
COMPOSITE	27	CONC	2598	0.57		1122	
		MASS	1.46	9.51		3.33	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0058
CAR NUMBER: 0015

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	IMPAL	8	327	4	46072	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.21	50.46	553.0	3.97	13.73
SIMULATED 1972 COLD	5.33	52.79	573.9	4.16	13.22
SIMULATED 1972 HOT	5.12	48.69	537.2	3.83	14.14
COLD TRANSIENT GRAMS	21.26	240.68	2066.9	18.15	12.94
COLD STABILIZED GRAMS	18.73	195.25	2237.3	13.08	13.50
HOT TRANSIENT GRAMS	19.64	209.96	1791.6	15.62	14.89
HOT STABILIZED GRAMS	19.77	210.84	2114.8	10.04	13.67

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3195	0.72	13.65	2672	
		MASS	4.06	20.91	548.73	10.87	14.98
LOW CRUISE	33	CONC	4760	2.13	13.14	1261	
		MASS	4.29	46.88	400.30	3.78	18.27
IDLE	0	CONC	3056	0.52	13.65	108	
		MASS	0.55	1.36	76.46	0.08	0.00
COMPOSITE	27	CONC	3336	0.80		895	
		MASS	1.83	11.28		3.16	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0067
CAR NUMBER: 0015

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	IMPAL	8	327	4	46091	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.84	101.32	539.1	2.51	12.42
SIMULATED 1972 COLD	6.22	106.84	556.5	2.57	11.96
SIMULATED 1972 HOT	5.56	97.15	525.6	2.45	12.80
COLD TRANSIENT GRAMS	24.77	405.75	1972.1	11.66	12.09
COLD STABILIZED GRAMS	21.85	395.55	2204.9	7.65	11.84
HOT TRANSIENT GRAMS	19.86	333.09	1737.3	10.75	13.99
HOT STABILIZED GRAMS	20.63	378.30	2099.7	6.47	12.42

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3473	1.43	13.62	2115	
		MASS	3.88	33.26	469.49	7.16	16.68
LOW CRUISE	33	CONC	5212	3.90	11.92	593	
		MASS	4.59	70.15	355.77	1.66	18.53
IDLE	0	CONC	5559	6.09	10.24	77	
		MASS	1.06	23.74	68.47	0.08	0.00
COMPOSITE	27	CONC	4037	2.47		593	
		MASS	2.13	31.23		1.96	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC59
CAR NUMBER: CC16

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CAPRI	8	400	2	22553	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.41	74.08	526.7	3.65	13.49
SIMULATED 1972 COLD	6.90	99.31	534.7	3.16	12.50
SIMULATED 1972 HOT	4.29	55.04	520.7	4.02	14.35
COLD TRANSIENT GRAMS	34.03	513.96	1809.2	10.23	11.93
COLD STABILIZED GRAMS	17.70	230.88	2200.7	13.51	13.09
HOT TRANSIENT GRAMS	14.48	181.95	1704.4	16.66	15.97
HOT STABILIZED GRAMS	16.15	167.71	2175.5	14.08	13.77

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3219	2.43	13.08	2053	
		MASS	3.60	62.35	489.45	7.39	14.87
LOW CRUISE	33	CONC	3028	0.66	14.23	1781	
		MASS	2.76	10.87	401.86	4.84	20.82
IDLE	0	CONC	3306	1.23	2.25	74	
		MASS	0.58	4.43	65.17	0.05	0.00
COMPOSITE	27	CONC	3215	1.89		908	
		MASS	1.58	19.68		2.53	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC066
CAR NUMBER: 0016

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CAPRI	8	400	2	32575	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.22	62.24	558.8	3.33	13.29
SIMULATED 1972 COLD	4.99	83.26	566.1	3.06	12.50
SIMULATED 1972 HOT	3.64	46.38	553.2	3.53	13.97
COLD TRANSIENT GRAMS	22.92	451.23	1880.3	10.85	12.21
COLD STABILIZED GRAMS	14.54	173.25	2365.2	12.09	12.78
HOT TRANSIENT GRAMS	12.79	174.62	1784.1	14.41	15.49
HOT STABILIZED GRAMS	14.33	152.39	2357.8	12.86	12.97

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3132	2.66	12.66	1859	
		MASS	3.35	66.28	481.08	5.87	14.95
LOW CRUISE	33	CONC	2611	0.37	14.08	1878	
		MASS	2.33	6.46	406.08	5.18	21.02
IDLE	0	CONC	3028	1.81	13.51	119	
		MASS	0.65	8.76	96.11	0.13	0.00
COMPOSITE	27	CONC	3058	2.12		918	
		MASS	1.53	22.95		2.29	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: 80064
CAR NUMBER: 0017

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	OLDS	TORON	8	455	4	52867	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.16	87.11	668.5	2.31	10.84
SIMULATED 1972 COLD	6.39	113.86	680.1	2.10	10.13
SIMULATED 1972 HOT	4.24	66.93	659.7	2.47	11.44
COLD TRANSIENT GRAMS	32.35	608.21	2353.4	7.14	9.53
COLD STABILIZED GRAMS	15.55	245.76	2747.9	8.58	10.77
HOT TRANSIENT GRAMS	16.27	256.18	2200.9	9.97	12.25
HOT STABILIZED GRAMS	14.30	176.24	2703.2	8.49	11.33

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2083	1.17	14.59	1434	
		MASS	2.95	34.98	667.44	6.68	12.17
LOW CRUISE	33	CONC	2430	1.43	14.56	720	
		MASS	2.61	36.92	266.18	2.66	26.79
IDLE	0	CONC	2106	0.09	13.11	54	
		MASS	0.41	0.81	76.27	0.05	0.00
COMPOSITE	27	CONC	2124	0.94		490	
		MASS	1.29	13.36		2.00	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: 0070
CAR NUMBER: 0017

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	OLDS	TORON	8	455	4	52885	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.49	93.31	681.8	2.24	10.57
SIMULATED 1972 COLD	4.98	110.69	658.6	2.06	10.03
SIMULATED 1972 HOT	4.12	80.19	669.1	2.38	11.02
COLD TRANSIENT GRAMS	20.83	507.76	2434.8	7.13	9.86
COLD STABILIZED GRAMS	16.55	322.44	2804.7	8.35	10.19
HOT TRANSIENT GRAMS	14.36	279.00	2213.3	9.50	12.05
HOT STABILIZED GRAMS	13.95	182.12	2888.4	9.18	10.65

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2222	1.43	14.44	1203	
		MASS	2.98	42.27	647.30	5.56	12.32
LOW CRUISE	33	CONC	2187	1.10	14.65	747	
		MASS	2.56	30.21	265.23	2.83	27.76
IDLE	0	CONC	1706	0.10	14.08	109	
		MASS	0.49	0.68	107.37	0.12	0.00
COMPOSITE	27	CONC	2124	1.08		479	
		MASS	1.35	14.36		1.82	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC65
CAR NUMBER: 0018

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	MUSTA	8	428	4	31426	3500	11.2	N	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.54	91.92	573.2	1.99	12.06
SIMULATED 1972 COLD	7.74	96.63	575.6	1.98	11.84
SIMULATED 1972 HOT	5.64	88.37	571.4	2.00	12.23
COLD TRANSIENT GRAMS	32.59	349.91	2010.3	8.55	12.21
COLD STABILIZED GRAMS	25.43	374.86	2306.4	6.29	11.52
HOT TRANSIENT GRAMS	16.87	287.89	1975.1	8.71	13.08
HOT STABILIZED GRAMS	21.08	353.59	2279.5	6.10	11.82

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1532	2.46	11.56	952	
		MASS	2.22	77.62	581.91	4.89	12.53
LOW CRUISE	30	CONC	1463	1.60	10.77	460	
		MASS	1.92	46.09	457.95	1.78	16.60
IDLE	0	CONC	8862	4.59	9.52	53	
		MASS	1.96	21.54	85.51	0.05	0.00
COMPOSITE	25	CONC	2859	2.63		328	
		MASS	2.02	38.31		1.44	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC071
CAR NUMBER: 0018

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	MUSTA	8	428	4	31440	3500	11.2	N	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.61	99.40	628.0	3.35	11.11
SIMULATED 1972 COLD	6.67	117.86	646.4	3.12	10.44
SIMULATED 1972 HOT	4.80	85.48	614.1	3.53	11.66
COLD TRANSIENT GRAMS	27.77	496.48	2255.5	11.66	10.28
COLD STABILIZED GRAMS	22.29	387.48	2552.3	11.75	10.61
HOT TRANSIENT GRAMS	13.71	253.60	2053.6	14.72	13.03
HOT STABILIZED GRAMS	19.23	320.90	2585.3	13.21	10.87

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1376	2.19	11.79	1328	
		MASS	1.59	70.80	561.56	5.39	13.11
LOW CRUISE	30	CONC	1254	1.04	11.72	740	
		MASS	1.55	37.84	457.48	2.89	17.07
IDLE	0	CONC	3821	3.23	10.43	181	
		MASS	1.34	26.41	131.79	0.23	0.00
COMPOSITE	25	CONC	1808	2.15		532	
		MASS	1.53	38.81		1.86	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0068
CAR NUMBER: CC19

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODNR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	AMMC	440	6	232	1	69119	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.98	53.30	425.2	4.01	17.07
SIMULATED 1972 COLD	4.39	56.36	434.5	4.13	16.59
SIMULATED 1972 HOT	3.67	50.98	418.3	3.93	17.46
COLD TRANSIENT GRAMS	18.87	249.24	1555.6	15.96	16.16
COLD STABILIZED GRAMS	14.09	173.47	1658.8	15.00	17.01
HOT TRANSIENT GRAMS	13.44	208.92	1438.4	14.47	17.97
HOT STABILIZED GRAMS	13.89	169.16	1627.9	14.60	17.69

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2778	1.77	13.56	2479	
		MASS	2.83	40.79	426.33	7.81	17.83
LOW CRUISE	30	CONC	3647	1.35	13.56	1821	
		MASS	2.42	25.84	314.13	4.06	24.57
IDLE	0	CONC	4134	3.18	12.92	121	
		MASS	0.39	6.63	51.74	0.06	0.00
COMPOSITE	25	CONC	3117	1.89		1019	
		MASS	1.23	17.32		2.50	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0075
CAR NUMBER: 0019

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	AMMC	440	6	232	1	61133	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.25	51.51	438.7	4.54	16.71
SIMULATED 1972 COLD	4.88	69.16	444.6	4.11	15.66
SIMULATED 1972 HOT	3.78	38.20	434.2	4.86	17.59
COLD TRANSIENT GRAMS	21.16	391.55	1487.5	11.85	14.98
COLD STABILIZED GRAMS	15.46	127.11	1846.8	19.00	16.36
HOT TRANSIENT GRAMS	12.85	159.39	1410.1	17.48	19.11
HOT STABILIZED GRAMS	14.47	101.92	1793.1	20.50	17.15

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3219	2.27	13.56	2285	
		MASS	2.95	51.74	415.32	7.64	17.60
LOW CRUISE	30	CONC	3891	1.46	13.65	2247	
		MASS	2.75	26.44	318.37	4.84	24.16
IDLE	0	CONC	5733	0.55	13.28	279	
		MASS	1.16	1.92	86.30	0.19	0.00
COMPOSITE	25	CONC	3749	1.76		1170	
		MASS	1.79	17.12		2.67	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: 00069
CAR NUMBER: 0020

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHRY	NEWPO	8	400	2	10730	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.30	119.75	588.0	2.37	11.19
SIMULATED 1972 COLD	8.17	131.52	597.6	2.39	10.73
SIMULATED 1972 HOT	4.89	110.87	580.8	2.35	11.56
COLD TRANSIENT GRAMS	41.48	525.57	2026.4	10.73	10.90
COLD STABILIZED GRAMS	19.83	460.83	2456.0	7.17	10.57
HOT TRANSIENT GRAMS	16.86	370.70	1895.6	10.48	12.82
HOT STABILIZED GRAMS	19.98	481.63	2399.9	6.52	10.65

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3647	2.90	12.86	1520	
		MASS	4.38	75.00	524.21	6.02	13.58
LOW CRUISE	33	CONC	3230	0.92	14.14	1372	
		MASS	3.53	47.99	434.16	4.15	17.10
IDLE	0	CONC	3821	4.79	11.54	81	
		MASS	0.86	24.76	98.66	0.09	0.00
COMPOSITE	27	CONC	3635	2.88		658	
		MASS	2.04	39.92		2.13	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0074
CAR NUMBER: CC20

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHRY	NEWPO	8	400	2	10748	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.46	127.42	593.8	1.88	10.98
SIMULATED 1972 COLD	6.14	133.83	617.4	1.89	10.51
SIMULATED 1972 HOT	4.95	122.58	576.0	1.87	11.36
COLD TRANSIENT GRAMS	26.30	496.66	2140.1	8.56	10.82
COLD STABILIZED GRAMS	19.74	507.04	2490.4	5.61	10.24
HOT TRANSIENT GRAMS	17.40	412.33	1829.5	8.40	12.84
HOT STABILIZED GRAMS	19.37	544.13	2285.1	4.91	10.71

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3995	4.11	8.05	855	
		MASS	4.80	95.47	540.28	3.66	12.62
LOW CRUISE	33	CONC	3752	2.58	13.71	797	
		MASS	3.52	61.27	445.19	2.57	16.11
IDLE	0	CONC	4169	6.14	11.04	69	
		MASS	0.94	33.87	96.08	0.07	0.00
COMPOSITE	27	CONC	4001	4.11		410	
		MASS	2.21	52.35		1.31	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC72
CAR NUMBER: CC21

BEFCRE

CYNAMOMETER EMISSICN RESULTS USING
1975 FEDERAL TEST PRCCECURES

YEAR	MAKE	MCDEL	CYL	CID	BBL	CDCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	LINC	CCNTI	8	460	4	20C38	5CCC	13.4	Y	N	AI	Y	A

GRAMS PER MILE	HC	CO	CC2	NCX	MPG
1975 CCMPOSITE	3.E2	E9.7E	742.7	2.29	9.94
SIMULATEC 1972 COLC	4.E7	1C1.33	759.5	2.30	9.53
SIMULATEC 1972 HCT	3.C3	81.C7	729.9	2.29	1C.27
CCLD TRANSIENT GRAMS	25.13	493.95	2634.C	7.74	9.32
CCLD STABILIZEC GRAMS	11.41	266.C1	3C62.5	9.5C	9.75
HOT TRANSIENT GRAMS	11.34	341.99	2412.C	7.66	1C.89
HOT STABILIZEC GRAMS	14.3C	216.78	3C49.2	9.9C	9.99

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ANALYSIS OF KEY-MCDE EMISSICNS

SPEEC			HC	CC	CC2	NCX	MPG
HIGH CRUISE	49	CCNC	1049	1.33	14.32	7C3	
		MASS	1.56	44.51	724.16	3.59	11.15
LOW CRUISE	33	CCNC	523	C.35	13.91	442	
		MASS	C.74	11.C4	643.C3	2.13	13.44
IDLE	C	CCNC	2889	2.62	12.59	1C3	
		MASS	0.81	14.1C	1C8.77	C.1C	C.CC
CCMPCSITE	27	CCNC	1325	1.39		299	
		MASS	1.01	21.4C		1.24	

AUTCMCTIVE TESTING LABCRATCRIES, INC.
19900 E. CCLFAX, AURCRA, CCLC. 8CC11

TEST NUMBER: EC079
CAR NUMBER: 0021

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	LINC	CONTI	8	460	4	20050	5000	13.4	Y	N	AI	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		4.98	70.27	632.6	4.20	11.74
SIMULATED 1972 COLD		5.83	88.45	648.0	4.04	11.06
SIMULATED 1972 HOT		4.33	56.56	621.1	4.32	12.31
COLD TRANSIENT	GRAMS	25.72	435.46	2225.7	14.05	10.87
COLD STABILIZED	GRAMS	18.01	227.90	2634.4	16.27	11.24
HOT TRANSIENT	GRAMS	14.48	196.30	2023.6	16.16	13.67
HOT STABILIZED	GRAMS	10.55	183.03	2596.5	16.06	11.75

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3045	1.94	11.61	1598	
		MASS	4.11	63.42	538.82	7.46	13.67
LOW CRUISE	33	CONC	2541	0.72	11.06	1106	
		MASS	3.10	19.64	446.40	4.61	18.21
IDLE	0	CONC	3995	2.86	11.41	88	
		MASS	0.87	14.03	91.80	0.15	0.00
COMPOSITE	27	CONC	3165	1.87		643	
		MASS	1.94	27.04		2.57	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0073
CAR NUMBER: 0022

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	DATS	510	4	97	2	12449	2500	9.4	N	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.22	33.34	330.2	3.76	22.68
SIMULATED 1972 COLD	3.63	37.85	345.0	3.75	21.41
SIMULATED 1972 HOT	2.90	29.94	319.0	3.77	23.73
COLD TRANSIENT GRAMS	15.03	164.32	1310.5	17.03	20.11
COLD STABILIZED GRAMS	12.23	119.54	1277.1	11.07	22.80
HOT TRANSIENT GRAMS	9.54	104.98	1115.2	17.21	24.81
HOT STABILIZED GRAMS	10.39	120.03	1191.5	10.49	24.27

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2054	0.67	11.41	2092	
		MASS	1.78	12.77	361.58	6.08	23.00
LOW CRUISE	23	CONC	2611	2.27	9.67	605	
		MASS	2.09	29.62	290.83	2.99	25.89
IDLE	0	CONC	2778	0.11	8.95	203	
		MASS	0.35	0.39	24.77	0.04	0.00
COMPOSITE	20	CONC	2245	0.71		647	
		MASS	0.89	6.72		1.91	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0078
CAR NUMBER: 0022

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	DATS	510	4	97	2	12468	2500	9.4	N	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.50	37.28	372.7	3.16	20.28
SIMULATED 1972 COLD	3.45	45.51	386.9	3.17	18.97
SIMULATED 1972 HOT	1.78	31.07	361.9	3.15	21.39
COLD TRANSIENT GRAMS	19.03	202.03	1386.1	15.11	18.43
COLD STABILIZED GRAMS	6.87	139.31	1515.8	8.65	19.52
HOT TRANSIENT GRAMS	6.50	93.73	1198.4	15.01	23.79
HOT STABILIZED GRAMS	6.04	127.92	1383.3	8.08	21.38

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1150	0.59	11.69	1989	
		MASS	0.91	13.03	370.59	4.46	22.61
LOW CRUISE	23	CONC	690	0.90	10.24	257	
		MASS	0.22	16.29	302.11	0.63	27.12
IDLE	0	CONC	1713	1.82	8.66	109	
		MASS	0.17	3.65	37.69	0.09	0.00
COMPOSITE	20	CONC	1203	0.82		416	
		MASS	0.37	7.39		1.18	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC076
CAR NUMBER: 0023

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PLYM	SATEL	8	318	2	12922	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.01	35.45	536.0	2.96	14.73
SIMULATED 1972 COLD	4.64	50.37	547.2	2.89	13.89
SIMULATED 1972 HOT	3.54	24.19	527.6	3.01	15.44
COLD TRANSIENT GRAMS	20.41	297.02	1922.8	10.46	13.25
COLD STABILIZED GRAMS	14.39	80.77	2181.2	11.22	14.57
HOT TRANSIENT GRAMS	12.16	100.64	1775.5	11.38	16.48
HOT STABILIZED GRAMS	13.64	75.69	2183.8	11.56	14.62

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3265	1.18	13.65	1589	
		MASS	3.39	32.06	520.57	6.08	15.31
LOW CRUISE	30	CONC	3045	0.51	14.00	1058	
		MASS	2.51	9.28	438.25	3.04	19.33
IDLE	0	CONC	3404	0.70	13.48	119	
		MASS	0.43	1.77	71.15	0.11	0.00
COMPOSITE	25	CONC	3267	0.96		641	
		MASS	1.41	10.20		1.96	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0085
CAR NUMBER: CC23

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PLYM	SATEL	8	318	2	12938	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.83	32.15	560.4	3.01	14.29
SIMULATED 1972 COLD		4.67	48.75	581.8	3.05	13.23
SIMULATED 1972 HOT		3.18	19.63	544.2	2.97	15.22
COLD TRANSIENT	GRAMS	22.45	308.38	2006.9	11.04	12.69
COLD STABILIZED	GRAMS	12.61	57.24	2356.5	11.65	13.79
HOT TRANSIENT	GRAMS	11.28	90.02	1725.3	10.43	17.09
HOT STABILIZED	GRAMS	12.61	66.14	2268.4	10.81	14.21

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3237	1.42	13.42	1318	
		MASS	3.73	45.88	521.50	5.09	14.71
LOW CRUISE	30	CONC	3271	0.82	14.14	875	
		MASS	2.97	16.69	426.35	2.43	19.28
IDLE	0	CONC	2228	0.16	13.51	164	
		MASS	0.55	0.81	94.40	0.12	0.00
COMPOSITE	25	CONC	3057	1.06		560	
		MASS	1.62	13.87		1.65	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC077
CAR NUMBER: CC24

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	LTD	8	390	2	35655	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.20	74.50	533.3	5.03	13.36
SIMULATED 1972 COLD	5.87	78.36	545.5	4.93	12.96
SIMULATED 1972 HOT	4.69	71.58	524.1	5.10	13.67
COLD TRANSIENT GRAMS	24.70	266.55	1879.5	19.72	13.68
COLD STABILIZED GRAMS	19.32	321.17	2211.8	17.28	12.34
HOT TRANSIENT GRAMS	15.83	215.66	1718.9	21.00	15.42
HOT STABILIZED GRAMS	17.79	267.22	2103.3	17.87	13.29

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3161	1.43	13.85	3152	
		MASS	3.70	35.76	518.96	11.28	15.18
LOW CRUISE	33	CONC	3300	1.36	14.14	2015	
		MASS	2.84	24.26	410.89	5.18	19.44
IDLE	0	CONC	5246	5.16	11.66	96	
		MASS	0.89	19.27	79.11	0.15	0.00
COMPOSITE	27	CONC	3555	2.03		1187	
		MASS	1.82	23.96		3.54	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0084
CAR NUMBER: 0024

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	LTD	8	390	2	35676	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.81	78.01	557.9	3.43	12.80
SIMULATED 1972 COLD	5.73	96.21	570.8	3.14	12.03
SIMULATED 1972 HOT	4.11	64.27	546.1	3.64	13.45
COLD TRANSIENT GRAMS	26.53	462.60	1943.0	11.70	11.80
COLD STABILIZED GRAMS	16.44	258.96	2338.4	11.85	12.26
HOT TRANSIENT GRAMS	14.39	223.10	1772.4	15.45	14.99
HOT STABILIZED GRAMS	15.27	221.61	2260.6	13.49	12.90

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ANALYSIS OF KEY-MODE EMISSIONS

SPEED			HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3473	2.24	13.39	2193	
		MASS	4.09	59.91	517.23	8.62	14.26
LOW CRUISE	33	CONC	3202	0.97	14.41	1550	
		MASS	1.91	27.80	417.40	4.32	19.06
IDLE	0	CONC	1776	1.14	14.29	137	
		MASS	0.36	6.11	53.82	0.10	0.00
COMPOSITE	27	CONC	3136	1.79		858	
		MASS	1.50	22.00		2.76	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC82
CAR NUMBER: CC25

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PONT	CATAL	8	400	2	17070	5000	13.4	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.29	67.76	615.4	4.09	12.11
SIMULATED 1972 COLD	5.01	79.78	636.4	3.63	11.45
SIMULATED 1972 HOT	3.75	58.69	599.5	4.45	12.66
COLD TRANSIENT GRAMS	21.10	310.20	2267.7	12.94	11.52
COLD STABILIZED GRAMS	16.46	288.13	2505.1	14.26	11.39
HOT TRANSIENT GRAMS	11.70	152.02	1991.1	19.08	14.34
HOT STABILIZED GRAMS	16.88	274.42	2462.7	14.41	11.63

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1104	0.16	13.19	1527	
		MASS	0.98	3.87	594.10	7.03	14.76
LOW CRUISE	33	CONC	1595	0.84	13.68	1633	
		MASS	1.50	19.70	419.70	4.44	19.55
IDLE	0	CONC	5733	5.01	10.79	109	
		MASS	0.95	18.10	71.14	0.10	0.00
COMPOSITE	27	CONC	1999	1.11		784	
		MASS	1.01	14.70		2.41	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC089
CAR NUMBER: CC25

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	PONT	CATAL	8	400	2	17093	5000	13.4	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.16	61.96	540.9	5.40	13.61
SIMULATED 1972 COLD	5.65	74.50	557.7	5.10	12.86
SIMULATED 1972 HOT	4.80	52.49	527.5	5.63	14.25
COLD TRANSIENT GRAMS	21.43	283.17	2019.3	20.10	12.84
COLD STABILIZED GRAMS	20.93	275.55	2163.5	18.14	12.88
HOT TRANSIENT GRAMS	15.08	118.16	1792.5	24.05	16.05
HOT STABILIZED GRAMS	21.53	261.45	2093.6	19.99	13.33

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1631	0.35	13.03	2734	
		MASS	2.00	3.47	522.18	10.65	16.68
LOW CRUISE	33	CONC	2708	0.92	13.39	2363	
		MASS	2.66	19.14	419.40	6.72	19.45
IDLE	0	CONC	6880	3.88	11.28	196	
		MASS	1.19	14.69	69.92	0.13	0.00
COMPOSITE	27	CONC	2700	1.04		1249	
		MASS	1.54	12.36		3.64	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: ECC83
CAR NUMBER: 0026

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	OLDS	VISTA	8	350	4	50224	4500	12.7	Y	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.29	95.18	517.8	2.22	13.02
SIMULATED 1972 COLD	6.08	106.87	530.9	2.03	12.40
SIMULATED 1972 HOT	4.69	86.37	508.0	2.36	13.52
COLD TRANSIENT GRAMS	27.33	442.33	1849.1	7.55	12.36
COLD STABILIZED GRAMS	18.27	359.20	2132.4	7.68	12.45
HOT TRANSIENT GRAMS	16.92	288.55	1677.5	10.04	14.88
HOT STABILIZED GRAMS	17.26	317.32	2112.1	7.80	12.86

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3404	1.89	13.28	1744	
		MASS	3.64	47.88	478.42	6.23	15.76
LOW CRUISE	33	CONC	4169	2.20	12.78	967	
		MASS	3.57	40.07	383.87	2.50	19.44
IDLE	0	CONC	1109	5.16	9.36	62	
		MASS	0.70	17.91	61.15	0.06	0.00
COMPOSITE	27	CONC	3067	2.42		620	
		MASS	1.75	27.87		1.88	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC088
CAR NUMBER: CC26

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	OLDS	VISTA	8	350	4	50245	4500	12.7	Y	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.04	76.06	507.2	2.85	13.86
SIMULATED 1972 COLD	5.96	92.49	521.4	2.66	12.99
SIMULATED 1972 HOT	4.34	63.68	496.4	2.99	14.60
COLD TRANSIENT GRAMS	27.04	431.24	1805.6	10.20	12.65
COLD STABILIZED GRAMS	17.69	262.41	2105.1	9.73	13.32
HOT TRANSIENT GRAMS	14.85	215.16	1617.8	12.73	16.23
HOT STABILIZED GRAMS	15.84	195.17	2017.9	10.61	14.44

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3578	1.94	13.56	1961	
		MASS	3.70	41.12	464.37	6.62	16.47
LOW CRUISE	33	CONC	4864	1.87	13.36	1357	
		MASS	3.40	35.30	373.20	3.57	20.27
IDLE	0	CONC	3473	2.60	11.92	76	
		MASS	0.32	5.68	39.94	0.04	0.00
COMPOSITE	27	CONC	3695	1.96		774	
		MASS	1.50	17.83		2.14	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC086
CAR NUMBER: 0027

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	MAVER	6	200	1	16209	2750	9.9	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.80	24.19	411.5	5.89	19.43
SIMULATED 1972 COLD	3.14	28.15	425.7	5.92	18.56
SIMULATED 1972 HOT	2.54	21.20	400.7	5.88	20.15
COLD TRANSIENT GRAMS	13.15	116.53	1534.1	23.57	18.48
COLD STABILIZED GRAMS	10.42	94.63	1658.8	20.80	18.63
HOT TRANSIENT GRAMS	8.64	64.38	1346.6	23.28	22.04
HOT STABILIZED GRAMS	10.00	92.84	1617.6	18.50	19.10

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2848	0.27	14.29	4088	
		MASS	2.44	4.53	364.81	10.18	23.46
LOW CRUISE	23	CONC	2465	0.15	14.14	817	
		MASS	1.47	3.56	281.86	1.47	30.49
IDLE	0	CONC	3508	4.14	12.11	55	
		MASS	0.39	11.22	52.82	0.10	0.00
COMPOSITE	20	CONC	2927	0.95		1031	
		MASS	1.04	8.70		2.63	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0099
CAR NUMBER: 0027

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	MAVER	6	200	1	16233	2750	9.9	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.34	19.08	383.0	4.60	21.19
SIMULATED 1972 COLD	2.59	21.27	399.1	4.80	20.21
SIMULATED 1972 HOT	2.15	17.44	370.8	4.46	21.99
COLD TRANSIENT GRAMS	10.67	75.44	1417.0	19.88	20.71
COLD STABILIZED GRAMS	8.77	84.05	1576.1	16.11	19.75
HOT TRANSIENT GRAMS	7.33	46.73	1204.9	17.32	24.98
HOT STABILIZED GRAMS	8.16	71.26	1555.7	14.47	20.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2691	0.19	13.85	4142	
		MASS	2.21	2.21	360.86	9.84	23.98
LOW CRUISE	23	CONC	1908	0.10	14.14	583	
		MASS	1.25	0.70	306.30	1.20	28.60
IDLE	0	CONC	2732	3.57	12.16	102	
		MASS	0.01	9.04	60.20	0.06	0.00
COMPOSITE	20	CONC	2615	0.78		980	
		MASS	0.72	6.41		2.48	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0087
CAR NUMBER: 0028

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV.	NOVA	6	250	1	15482	3500	11.2	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.42	39.50	451.1	3.87	16.99
SIMULATED 1972 COLD	4.60	63.60	451.5	3.52	15.73
SIMULATED 1972 HOT	2.54	21.22	450.8	4.14	18.09
COLD TRANSIENT GRAMS	24.73	390.24	1533.0	13.80	14.61
COLD STABILIZED GRAMS	9.77	66.80	1853.5	12.61	16.97
HOT TRANSIENT GRAMS	9.25	73.11	1527.5	18.42	19.45
HOT STABILIZED GRAMS	9.93	59.35	1758.7	12.45	18.20

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1675	0.15	14.14	2595	
		MASS	1.76	2.56	465.11	8.35	18.76
LOW CRUISE	30	CONC	2889	0.52	14.44	2061	
		MASS	2.16	6.15	332.34	4.42	25.53
IDLE	0	CONC	4864	4.91	11.46	80	
		MASS	0.50	10.15	39.19	0.05	0.00
COMPOSITE	25	CONC	2384	1.05		1089	
		MASS	0.99	7.81		2.68	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0098
CAR NUMBER: 0028

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV	NOVA	6	250	1	15503	3500	11.2	N	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.91	33.19	497.6	3.06	15.93
SIMULATED 1972 COLD	4.07	57.70	504.6	2.77	14.64
SIMULATED 1972 HOT	2.03	14.70	492.3	3.28	17.07
COLD TRANSIENT GRAMS	22.83	375.49	1730.1	10.85	13.59
COLD STABILIZED GRAMS	7.72	57.28	2054.6	9.91	15.81
HOT TRANSIENT GRAMS	7.51	52.96	1637.3	14.73	18.64
HOT STABILIZED GRAMS	5.91	57.84	2029.2	10.12	16.03

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1358	0.24	14.41	1876	
		MASS	1.44	5.71	489.32	6.24	17.71
LOW CRUISE	30	CONC	2861	0.80	14.41	1569	
		MASS	2.03	13.22	333.05	3.26	24.72
IDLE	0	CONC	3682	3.15	12.70	79	
		MASS	0.42	8.17	52.44	0.05	0.00
COMPOSITE	25	CONC	1941	0.82		818	
		MASS	0.84	8.11		2.00	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0090
CAR NUMBER: 0029

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	VOLK	SEDAN	4	97	1	27803	2000	8.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.58	44.36	334.7	2.43	21.59
SIMULATED 1972 COLD	2.95	51.89	337.0	2.39	20.81
SIMULATED 1972 HOT	2.29	38.67	332.9	2.45	22.21
COLD TRANSIENT GRAMS	12.94	255.43	1074.9	9.22	21.43
COLD STABILIZED GRAMS	9.18	133.75	1452.7	8.72	20.26
HOT TRANSIENT GRAMS	8.01	156.30	1044.0	9.66	24.72
HOT STABILIZED GRAMS	10.13	156.25	1525.8	9.50	19.01

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1619	0.88	13.76	3384	
		MASS	1.02	14.08	290.45	6.67	28.20
LOW CRUISE	23	CONC	1497	0.69	14.14	797	
		MASS	0.77	8.25	222.07	1.32	37.50
IDLE	0	CONC	2503	2.50	13.19	73	
		MASS	0.24	5.08	45.38	0.04	0.00
COMPOSITE	20	CONC	1767	1.11		885	
		MASS	0.50	7.69		1.77	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC106
CAR NUMBER: 0029

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	VOLK	SEDAN	4	97	1	27820	2000	8.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.78	38.04	308.5	3.00	23.62
SIMULATED 1972 COLD	3.00	44.72	308.8	3.07	22.92
SIMULATED 1972 HOT	2.62	33.00	308.3	2.95	24.17
COLD TRANSIENT GRAMS	12.16	217.62	992.6	11.37	23.67
COLD STABILIZED GRAMS	10.37	117.77	1323.7	11.66	22.24
HOT TRANSIENT GRAMS	9.26	129.70	988.5	10.48	26.61
HOT STABILIZED GRAMS	11.38	127.06	1492.1	10.46	19.84

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1671	0.98	13.73	4528	
		MASS	1.09	14.93	282.68	8.09	28.76
LOW CRUISE	23	CONC	1619	0.78	13.82	1125	
		MASS	0.80	10.39	217.05	1.60	37.75
IDLE	0	CONC	2854	2.39	12.64	67	
		MASS	0.27	4.78	38.85	0.05	0.00
COMPOSITE	20	CONC	1881	1.16		1187	
		MASS	0.54	7.95		2.19	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0100
CAR NUMBER: 0030

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	TOYO	COROL	4	71	2	28311	2500	9.4	Y	Y	AI	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.27	46.23	264.0	2.12	25.43
SIMULATED 1972 COLD	4.24	49.24	269.5	2.09	24.72
SIMULATED 1972 HOT	4.29	43.97	259.9	2.14	26.00
COLD TRANSIENT GRAMS	14.07	191.73	997.8	7.93	24.94
COLD STABILIZED GRAMS	17.74	177.55	1063.5	7.73	24.51
HOT TRANSIENT GRAMS	14.44	152.20	885.6	8.29	27.77
HOT STABILIZED GRAMS	20.03	171.87	1016.2	8.21	25.40

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2367	0.67	11.36	2401	
		MASS	1.87	12.13	279.72	5.29	29.23
LOW CRUISE	23	CONC	3306	3.84	8.25	161	
		MASS	1.80	44.60	162.00	0.33	37.45
IDLE	0	CONC	10774	2.90	7.66	43	
		MASS	0.46	2.84	13.80	0.01	0.00
COMPOSITE	20	CONC	3997	1.39		512	
		MASS	0.96	9.77		1.27	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC105
CAR NUMBER: 0C30

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	TOYO	COROL	4	71	2	28328	2500	9.4	Y	Y	AI	Y	S-4

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.28	42.77	303.8	3.24	23.35
SIMULATED 1972 COLD		3.43	50.47	307.3	3.11	22.40
SIMULATED 1972 HOT		3.17	36.95	301.1	3.33	24.12
COLD TRANSIENT	GRAMS	13.11	237.18	1033.0	10.22	22.46
COLD STABILIZED	GRAMS	12.99	141.37	1272.1	13.13	22.35
HOT TRANSIENT	GRAMS	11.20	135.76	985.9	11.87	26.33
HOT STABILIZED	GRAMS	12.60	149.07	1297.2	13.87	21.82

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2402	0.41	11.18	3368	
		MASS	1.86	6.92	273.27	7.57	30.71
LOW CRUISE	23	CONC	3306	3.15	7.76	460	
		MASS	2.16	46.74	194.63	0.98	32.40
IDLE	0	CONC	1351	0.40	8.51	69	
		MASS	0.18	1.04	29.20	0.03	0.00
COMPOSITE	20	CONC	2307	0.68		787	
		MASS	0.81	7.54		1.91	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0103
CAR NUMBER: 0031

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMP	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	DODG	DART	8	318	2	24507	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.82	39.06	516.3	1.97	15.10
SIMULATED 1972 COLD	4.16	48.28	528.9	1.80	14.41
SIMULATED 1972 HOT	3.56	32.11	506.7	2.09	15.67
COLD TRANSIENT GRAMS	17.38	241.30	1755.0	6.57	14.85
COLD STABILIZED GRAMS	13.80	120.77	2211.9	6.55	14.02
HOT TRANSIENT GRAMS	12.89	120.07	1588.5	8.75	17.88
HOT STABILIZED GRAMS	13.61	92.16	2111.3	8.39	14.91

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3925	2.98	12.86	730	
		MASS	4.37	75.08	483.31	2.64	14.48
LOW CRUISE	30	CONC	4655	1.17	13.76	1207	
		MASS	3.64	20.33	352.87	3.06	22.47
IDLE	0	CONC	2118	0.69	13.62	210	
		MASS	0.48	2.78	93.82	0.16	0.00
COMPOSITE	25	CONC	3674	2.22		561	
		MASS	1.61	22.86		1.22	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC110
CAR NUMBER: 0031

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	DODG	DART	8	318	2	24530	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		5.23	48.03	514.5	3.00	14.68
SIMULATED 1972 COLD		5.67	59.73	529.0	2.49	13.90
SIMULATED 1972 HOT		4.89	39.20	503.5	3.38	15.34
COLD TRANSIENT	GRAMS	23.60	322.75	1858.1	6.89	13.32
COLD STABILIZED	GRAMS	18.92	125.23	2109.2	11.81	14.49
HOT TRANSIENT	GRAMS	17.76	168.81	1667.3	13.58	16.35
HOT STABILIZED	GRAMS	19.70	100.89	2007.2	14.11	15.39

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	4447	2.39	13.33	1396	
		MASS	4.75	55.58	483.60	5.28	15.20
LOW CRUISE	30	CONC	5281	0.87	13.85	2077	
		MASS	4.44	15.75	380.39	5.76	21.25
IDLE	0	CONC	2848	0.35	13.31	188	
		MASS	0.56	0.63	92.91	0.13	0.00
COMPOSITE	25	CONC	4244	1.73		916	
		MASS	2.03	16.09		2.26	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC104
CAR NUMBER: CC32

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	MERC	MARCU	8	429	2	12956	4500	12.7	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	7.97	65.82	593.3	3.49	12.34
SIMULATED 1972 COLD	10.26	76.42	605.2	3.34	11.75
SIMULATED 1972 HOT	6.23	57.82	584.3	3.61	12.82
COLD TRANSIENT GRAMS	46.60	339.41	2049.9	12.99	11.90
COLD STABILIZED GRAMS	30.37	233.73	2488.9	12.07	11.61
HOT TRANSIENT GRAMS	16.36	199.93	1893.4	15.01	14.39
HOT STABILIZED GRAMS	15.99	209.63	2425.8	12.20	12.22

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3647	1.98	13.65	2193	
		MASS	4.31	46.98	500.02	8.13	15.16
LOW CRUISE	33	CONC	3404	0.92	14.00	1628	
		MASS	3.21	18.85	426.08	4.85	19.12
IDLE	0	CONC	3473	2.90	12.86	113	
		MASS	0.69	12.22	88.30	0.10	0.00
COMPOSITE	27	CONC	3590	1.93		909	
		MASS	1.89	21.67		2.73	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0111
CAR NUMBER: 0032

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	MERC	MARQU	8	429	2	12973	4500	12.7	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.98	39.75	650.8	3.06	12.27
SIMULATED 1972 COLD	4.78	55.59	664.2	2.94	11.62
SIMULATED 1972 HOT	3.37	27.81	640.6	3.15	12.81
COLD TRANSIENT GRAMS	22.61	319.33	2184.8	11.64	11.79
COLD STABILIZED GRAMS	13.21	97.58	2796.5	10.40	11.46
HOT TRANSIENT GRAMS	12.09	110.99	2008.2	13.19	14.64
HOT STABILIZED GRAMS	11.57	69.97	2688.3	10.33	12.10

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3821	1.97	13.62	1922	
		MASS	4.19	46.65	504.87	7.29	15.06
LOW CRUISE	33	CONC	3126	0.83	14.20	1241	
		MASS	2.83	17.03	439.06	3.86	18.76
IDLE	0	CONC	1480	0.49	13.82	239	
		MASS	0.51	2.92	144.48	0.25	0.00
COMPOSITE	27	CONC	3321	1.48		806	
		MASS	1.70	15.45		2.47	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC114
CAR NUMBER: 0033

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	BUIC	SPORT	8	400	4	39637	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.15	72.04	555.9	4.90	12.93
SIMULATED 1972 COLD	6.76	84.65	578.2	4.82	12.16
SIMULATED 1972 HOT	5.69	62.53	539.0	4.96	13.59
COLD TRANSIENT GRAMS	28.08	365.79	2092.0	22.27	11.80
COLD STABILIZED GRAMS	22.58	269.08	2244.4	13.86	12.52
HOT TRANSIENT GRAMS	20.08	199.92	1798.3	23.35	14.94
HOT STABILIZED GRAMS	22.74	274.02	2200.5	15.33	12.68

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2465	0.47	12.89	3732	
		MASS	3.25	13.69	465.38	14.93	17.22
LOW CRUISE	33	CONC	3341	1.14	10.89	1724	
		MASS	3.39	35.17	368.23	5.66	20.51
IDLE	0	CONC	6324	5.46	11.21	74	
		MASS	0.93	17.40	69.11	0.10	0.00
COMPOSITE	27	CONC	3260	1.43		1206	
		MASS	1.77	18.43		4.42	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC119
CAR NUMBER: 0033

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	BUIC	SPORT	8	400	4	39654	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.20	37.43	624.3	5.18	12.79
SIMULATED 1972 COLD	4.60	45.65	653.9	5.46	12.03
SIMULATED 1972 HOT	3.90	31.23	602.1	4.97	13.42
COLD TRANSIENT GRAMS	18.15	207.27	2334.6	27.64	11.96
COLD STABILIZED GRAMS	16.32	135.12	2569.5	13.32	12.10
HOT TRANSIENT GRAMS	12.92	99.13	1946.1	23.97	15.17
HOT STABILIZED GRAMS	15.09	117.45	2234.8	13.24	13.90

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2593	0.61	12.92	3948	
		MASS	2.05	17.50	479.85	15.27	17.33
LOW CRUISE	33	CONC	1995	0.90	12.13	2146	
		MASS	2.02	25.67	371.61	6.77	21.29
IDLE	0	CONC	2002	0.73	12.00	318	
		MASS	0.52	3.98	100.30	0.25	0.00
COMPOSITE	27	CONC	2422	0.63		1470	
		MASS	1.06	9.76		4.78	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC115
CAR NUMBER: 0034

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CADI	DEVIL	8	472	4	5122	5000	13.4	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	1.59	46.66	829.5	2.77	9.81
SIMULATED 1972 COLD	1.85	51.65	881.9	2.89	9.19
SIMULATED 1972 HOT	1.39	42.90	789.9	2.68	10.34
COLD TRANSIENT GRAMS	9.04	237.19	3086.6	13.28	9.32
COLD STABILIZED GRAMS	4.85	150.20	3527.9	8.40	9.07
HOT TRANSIENT GRAMS	5.61	171.52	2396.1	11.70	12.12
HOT STABILIZED GRAMS	5.20	224.39	3278.2	6.38	9.40

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	489	0.57	12.81	1328	
		MASS	0.78	19.90	657.09	7.39	12.89
LOW CRUISE	33	CONC	958	1.29	11.44	454	
		MASS	1.37	49.08	493.68	1.97	15.48
IDLE	0	CONC	1358	2.66	10.50	58	
		MASS	0.51	20.20	130.61	0.09	0.00
COMPOSITE	27	CONC	697	1.00		399	
		MASS	0.66	23.30		2.07	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC120
CAR NUMBER: CC34

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1972	CADI	DEVIL	8	472	4	5139	5000	13.4	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	1.33	53.92	837.2	2.76	9.62
SIMULATED 1972 COLD	1.44	59.26	891.9	2.97	9.00
SIMULATED 1972 HOT	1.25	49.90	796.0	2.60	10.14
COLD TRANSIENT GRAMS	6.94	264.76	3174.8	14.14	9.00
COLD STABILIZED GRAMS	3.97	279.69	3514.1	8.11	9.00
HOT TRANSIENT GRAMS	5.50	194.56	2456.0	11.42	11.70
HOT STABILIZED GRAMS	4.40	236.85	3386.8	5.63	9.09

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	391	0.83	12.97	1212	
		MASS	0.58	37.14	675.41	6.10	12.11
LOW CRUISE	33	CONC	767	2.13	11.92	335	
		MASS	1.12	69.66	546.00	1.44	13.51
IDLE	0	CONC	1393	3.23	10.20	60	
		MASS	0.52	25.94	127.43	0.11	0.00
COMPOSITE	27	CONC	613	1.37		345	
		MASS	0.59	33.56		1.70	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC117
CAR NUMBER: 0035

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	FORD	FAIRL	8	289	2	47255	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.96	27.64	496.7	4.33	16.11
SIMULATED 1972 COLD	4.36	36.55	515.2	4.53	15.18
SIMULATED 1972 HOT	3.65	20.91	482.7	4.17	16.89
COLD TRANSIENT GRAMS	17.51	173.51	1811.6	20.35	15.19
COLD STABILIZED GRAMS	15.22	100.65	2052.8	13.65	15.18
HOT TRANSIENT GRAMS	12.15	56.20	1567.6	17.66	19.19
HOT STABILIZED GRAMS	13.97	83.33	2031.2	10.62	15.54

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3161	0.21	13.53	3500	
		MASS	3.54	5.27	482.86	11.27	17.73
LOW CRUISE	30	CONC	3647	0.21	13.28	2084	
		MASS	2.07	3.04	361.81	5.09	23.87
IDLE	0	CONC	3543	2.95	12.67	144	
		MASS	0.67	11.61	91.19	0.11	0.00
COMPOSITE	25	CONC	3282	0.70		1293	
		MASS	1.57	9.07		3.50	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC128
CAR NUMBER: 0C35

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	FORD	FAIRL	8	289	2	42271	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.41	21.75	508.1	3.52	16.10
SIMULATED 1972 COLD	3.60	28.39	528.5	3.94	15.24
SIMULATED 1972 HOT	3.27	16.75	492.6	3.20	16.83
COLD TRANSIENT GRAMS	15.91	158.57	1910.2	21.51	14.71
COLD STABILIZED GRAMS	11.06	53.94	2053.8	8.05	15.77
HOT TRANSIENT GRAMS	13.43	71.69	1641.0	15.93	18.10
HOT STABILIZED GRAMS	13.64	60.26	2166.0	10.60	14.68

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3219	0.35	14.14	2750	
		MASS	3.60	8.02	485.26	9.43	17.35
LOW CRUISE	30	CONC	3717	0.41	13.85	1396	
		MASS	3.23	9.84	387.12	3.80	21.57
IDLE	0	CONC	3271	2.66	13.11	129	
		MASS	0.64	11.65	89.20	0.11	0.00
COMPOSITE	25	CONC	3282	0.76		956	
		MASS	1.66	10.54		2.86	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC118
CAR NUMBER: 0036

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHEV	MONTE	8	402	4	4662	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	1.70	42.42	680.5	2.89	11.83
SIMULATED 1972 COLD	1.84	43.44	699.6	2.97	11.51
SIMULATED 1972 HOT	1.60	41.65	666.1	2.83	12.09
COLD TRANSIENT GRAMS	8.46	140.97	2270.6	14.72	12.91
COLD STABILIZED GRAMS	5.30	184.84	2976.6	7.53	10.44
HOT TRANSIENT GRAMS	6.68	127.56	2018.8	13.67	14.51
HOT STABILIZED GRAMS	5.10	187.84	2848.9	6.88	10.85

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1042	0.75	11.51	1741	
		MASS	1.46	26.23	541.08	7.96	15.17
LOW CRUISE	33	CONC	1150	1.13	10.72	508	
		MASS	1.45	44.43	456.01	2.03	16.79
IDLE	0	CONC	1584	3.33	10.60	48	
		MASS	0.42	21.42	106.32	0.06	0.00
COMPOSITE	27	CONC	1152	1.22		487	
		MASS	0.79	25.16		2.19	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC130
CAR NUMBER: 0036

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	CHEV	MONTE	8	402	4	4680	4000	12.0	Y	Y	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	1.88	52.14	666.4	1.99	11.81
SIMULATED 1972 COLD	2.18	57.28	688.1	2.00	11.35
SIMULATED 1972 HOT	1.65	48.26	650.1	1.98	12.18
COLD TRANSIENT GRAMS	11.13	221.03	2252.6	9.41	12.34
COLD STABILIZED GRAMS	5.19	208.60	2908.0	5.61	10.54
HOT TRANSIENT GRAMS	7.19	153.31	1967.9	9.25	14.57
HOT STABILIZED GRAMS	4.89	199.91	2901.5	5.11	10.61

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1219	0.90	11.92	1473	
		MASS	1.52	32.65	547.44	6.76	14.76
LOW CRUISE	33	CONC	1080	1.26	11.33	343	
		MASS	1.31	43.14	445.35	1.36	17.22
IDLE	0	CONC	1324	2.82	11.09	56	
		MASS	0.40	18.69	119.37	0.07	0.00
COMPOSITE	27	CONC	1223	1.24		394	
		MASS	0.78	24.88		1.82	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC122
CAR NUMBER: 0037

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	AMMC	AMBAS	8	360	2	26651	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.05	102.95	505.4	3.72	12.96
SIMULATED 1972 COLD	5.78	115.21	516.6	3.52	12.44
SIMULATED 1972 HOT	4.49	93.70	504.1	3.87	13.38
COLD TRANSIENT GRAMS	24.92	436.76	1790.0	14.77	12.72
COLD STABILIZED GRAMS	18.45	427.35	2084.4	11.60	12.18
HOT TRANSIENT GRAMS	15.22	275.41	1656.0	17.40	14.93
HOT STABILIZED GRAMS	17.25	374.98	2105.6	11.85	12.47

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3070	1.04	14.38	3299	
		MASS	3.59	37.99	508.04	10.97	15.38
LOW CRUISE	33	CONC	3682	1.71	13.53	2092	
		MASS	3.41	33.22	393.37	3.34	19.51
IDLE	0	CONC	3543	5.06	10.91	114	
		MASS	0.83	24.28	88.26	0.13	0.00
COMPOSITE	27	CONC	3221	1.79		1244	
		MASS	1.60	28.70		3.14	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC135
CAR NUMBER: CC37

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1970	AMC	AMBAS	8	360	2	26673	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.85	58.70	532.8	3.83	13.91
SIMULATED 1972 COLD	5.11	73.00	538.2	3.51	13.31
SIMULATED 1972 HOT	4.66	47.92	526.7	4.08	14.39
COLD TRANSIENT GRAMS	22.65	349.00	1786.1	13.73	13.51
COLD STABILIZED GRAMS	15.70	198.47	2250.4	12.59	13.13
HOT TRANSIENT GRAMS	19.22	160.93	1714.6	17.59	16.03
HOT STABILIZED GRAMS	15.75	186.67	2179.8	12.08	13.59

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3237	1.11	13.76	2904	
		MASS	3.59	37.47	496.43	10.43	15.72
LOW CRUISE	33	CONC	3821	1.59	13.56	1705	
		MASS	3.37	34.96	387.34	4.76	19.66
IDLE	0	CONC	2784	1.56	13.28	216	
		MASS	0.71	9.54	111.51	0.19	0.00
COMPOSITE	27	CONC	3216	1.19		1108	
		MASS	1.72	19.35		3.29	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC123
CAR NUMBER: CC38

BEFCRE

DYNAMOMETER EMISSICN RESULTS USING
1975 FEDERAL TEST PRCCEDURES

YEAR	MAKE	MCDEL	CYL	CIC	BBL	CCCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	FORD	GALAX	8	390	2	58331	4000	12.C	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CC2	NCX	MPG
1975 CCMPOSITE	3.93	5C.41	685.6	2.98	11.4C
SIMULATEC 1972 CCLC	4.41	59.7C	7C7.4	2.84	1C.93
SIMULATED 1972 HOT	3.58	43.41	676.2	3.C9	11.78
COLD TRANSIENT GRAMS	19.25	277.4C	2384.6	1C.8C	11.28
CCLD STABILIZEC GRAMS	13.82	17C.36	292C.7	1C.5C	1C.61
HOT TRANSIENT GRAMS	13.CC	155.21	215C.5	12.67	13.35
HOT STABILIZED GRAMS	13.83	166.24	2814.5	1C.C3	1C.88

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ANALYSIS CF KEY-MCDE EMISSICNS

	SPEED		HC	CC	CC2	NCX	MPG
HIGH CRUISE	49	CONC	2541	1.C5	14.14	1682	
		MASS	3.23	34.35	589.9C	6.63	13.61
LCW CRUISE	33	CCNC	2698	1.7C	13.85	777	
		MASS	2.78	44.89	491.1C	2.45	15.61
IDLE	0	CONC	1741	0.35	14.2C	153	
		MASS	0.15	1.52	114.22	C.16	C.CC
CCMPCSITE	27	CONC	2412	0.94		596	
		MASS	1.22	14.53		2.C2	

AUTCMCTIVE TESTING LABCRATCRIES, INC.
19900 E. CCLFAX, AURCRA, CCLC. 80C11

TEST NUMBER: EC134
CAR NUMBER: 0038

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	FORD	GALAX	8	390	2	58355	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.15	39.80	614.7	3.07	12.90
SIMULATED 1972 COLD	4.19	43.88	637.6	3.07	12.37
SIMULATED 1972 HOT	4.12	36.71	597.4	3.07	13.33
COLD TRANSIENT GRAMS	17.69	202.48	2170.5	12.92	12.77
COLD STABILIZED GRAMS	13.73	126.65	2611.7	10.10	12.01
HOT TRANSIENT GRAMS	17.16	148.71	1868.8	12.94	15.07
HOT STABILIZED GRAMS	13.63	140.94	2503.4	9.17	12.39

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3028	1.35	13.91	1937	
		MASS	3.75	48.33	551.12	7.49	13.94
LOW CRUISE	33	CONC	3202	1.87	13.62	904	
		MASS	3.24	47.33	447.90	2.93	16.72
IDLE	0	CONC	2367	0.20	14.00	145	
		MASS	0.56	1.04	116.96	0.24	0.00
COMPOSITE	27	CONC	2926	1.13		675	
		MASS	1.65	18.00		2.35	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC139
CAR NUMBER: 0039

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	DODG	POLAR	8	318	2	58220	4000	12.0	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.04	75.15	481.1	2.60	14.48
SIMULATED 1972 COLD	6.72	100.06	480.1	2.20	13.52
SIMULATED 1972 HOT	3.78	56.36	481.8	2.91	15.29
COLD TRANSIENT GRAMS	35.38	556.64	1543.8	5.41	12.85
COLD STABILIZED GRAMS	15.05	193.82	2057.0	11.12	14.23
HOT TRANSIENT GRAMS	13.28	228.90	1556.6	10.67	16.60
HOT STABILIZED GRAMS	13.82	153.72	2015.8	11.22	14.90

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3306	3.08	13.03	1511	
		MASS	3.62	71.79	454.09	5.32	15.40
LOW CRUISE	33	CONC	3717	2.16	13.28	1646	
		MASS	3.01	41.27	355.19	4.44	20.73
IDLE	0	CONC	2245	0.55	13.56	146	
		MASS	0.43	2.09	84.16	0.10	0.00
COMPOSITE	27	CONC	3157	2.37		801	
		MASS	1.52	23.90		2.02	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC147
CAR NUMBER: CC39

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	DODG	POLAR	8	318	2	58238	4000	12.0	N	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		5.37	64.67	474.8	3.26	15.01
SIMULATED 1972 COLD		6.96	74.16	475.2	2.85	14.51
SIMULATED 1972 HOT		4.17	57.52	474.4	3.57	15.41
COLD TRANSIENT	GRAMS	35.54	373.46	1550.7	6.63	14.45
COLD STABILIZED	GRAMS	16.65	182.71	2013.4	14.78	14.57
HOT TRANSIENT	GRAMS	14.63	248.67	1544.6	12.00	16.40
HOT STABILIZED	GRAMS	14.39	152.00	1981.1	13.96	15.13

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3647	3.44	12.89	1569	
		MASS	3.85	76.71	456.39	5.58	15.12
LOW CRUISE	33	CONC	3891	1.87	13.36	1976	
		MASS	3.15	36.44	362.41	5.08	20.73
IDLE	0	CONC	2465	0.31	13.33	151	
		MASS	0.45	2.09	77.74	0.10	0.00
COMPOSITE	27	CONC	3458	2.53		905	
		MASS	1.61	24.60		2.19	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC133
CAR NUMBER: CC40

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	FORD	LTD	8	400	2	6450	4000	12.0	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.33	38.44	651.3	4.18	12.33
SIMULATED 1972 COLD	3.61	46.06	673.9	4.19	11.75
SIMULATED 1972 HOT	3.12	32.69	634.2	4.17	12.81
COLD TRANSIENT GRAMS	16.64	224.49	2345.6	17.90	11.82
COLD STABILIZED GRAMS	10.42	120.98	2708.8	13.52	11.69
HOT TRANSIENT GRAMS	12.97	124.21	2047.5	17.76	14.23
HOT STABILIZED GRAMS	10.85	153.61	2560.0	12.10	12.09

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2228	0.87	13.94	2904	
		MASS	2.76	30.55	563.64	11.64	13.91
LOW CRUISE	33	CONC	1873	0.51	14.11	1356	
		MASS	1.88	12.35	461.51	4.44	18.29
IDLE	0	CONC	2819	2.90	12.45	102	
		MASS	0.65	17.03	99.67	0.10	0.00
COMPOSITE	27	CONC	2298	1.16		973	
		MASS	1.33	19.91		3.46	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0148
CAR NUMBER: 0040

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1972	FORD	LTD	8	400	2	6472	4000	12.0	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.14	35.94	661.7	4.17	12.23
SIMULATED 1972 COLD	3.54	46.55	680.8	4.06	11.64
SIMULATED 1972 HOT	2.84	27.93	647.3	4.26	12.72
COLD TRANSIENT GRAMS	16.53	254.83	2283.9	17.13	11.88
COLD STABILIZED GRAMS	10.04	94.26	2822.4	13.32	11.42
HOT TRANSIENT GRAMS	11.26	115.25	2032.6	18.60	14.45
HOT STABILIZED GRAMS	9.99	92.24	2723.1	12.35	11.82

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2332	1.06	13.94	2479	
		MASS	2.84	38.24	563.35	9.72	14.08
LOW CRUISE	33	CONC	2019	0.76	14.14	1261	
		MASS	2.01	18.69	461.57	4.13	17.91
IDLE	0	CONC	1671	0.76	13.65	192	
		MASS	0.50	6.49	141.49	0.20	0.00
COMPOSITE	27	CONC	2179	0.92		855	
		MASS	1.26	15.80		3.04	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0143
CAR NUMBER: 0041

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	OLDS	TORON	8	455	4	29035	5000	13.4	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.94	56.64	672.0	3.65	11.51
SIMULATED 1972 COLD	4.28	64.88	700.5	3.65	10.91
SIMULATED 1972 HOT	3.69	50.42	650.4	3.65	12.01
COLD TRANSIENT GRAMS	16.81	291.94	2567.0	15.09	10.56
COLD STABILIZED GRAMS	15.26	194.65	2687.0	12.25	11.27
HOT TRANSIENT GRAMS	12.39	183.51	2191.1	15.12	12.91
HOT STABILIZED GRAMS	15.12	193.82	2713.9	11.20	11.18

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1428	0.31	14.35	1859	
		MASS	1.89	9.42	631.45	6.78	13.65
LOW CRUISE	33	CONC	2854	1.44	13.65	1019	
		MASS	3.00	39.61	499.21	3.80	15.60
IDLE	0	CONC	2426	1.03	12.19	60	
		MASS	0.49	5.95	86.81	0.06	0.00
COMPOSITE	27	CONC	1761	0.55		655	
		MASS	1.09	10.52		2.68	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC155
CAR NUMBER: 0041

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	OLDS	TORON	8	455	4	29035	5000	13.4	Y	Y	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.83	56.76	744.6	3.02	10.53
SIMULATED 1972 COLD		4.24	65.35	767.0	2.97	10.08
SIMULATED 1972 HOT		3.52	50.28	727.6	3.06	10.89
COLD TRANSIENT	GRAMS	16.65	305.31	2658.1	11.69	10.19
COLD STABILIZED	GRAMS	15.18	184.85	3094.6	10.58	9.99
HOT TRANSIENT	GRAMS	11.19	192.29	2362.6	12.35	12.04
HOT STABILIZED	GRAMS	12.65	119.36	2996.9	10.01	10.63

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	523	0.21	14.08	1029	
		MASS	0.70	6.43	747.02	5.74	11.73
LOW CRUISE	33	CONC	2645	1.03	13.56	913	
		MASS	2.99	37.10	517.34	3.38	15.22
IDLE	0	CONC	2228	1.01	12.45	82	
		MASS	0.53	6.61	105.63	0.08	0.00
COMPOSITE	27	CONC	1059	0.43		480	
		MASS	0.79	9.92		1.93	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC144
CAR NUMBER: 0042

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	PLYM	FURY2	8	318	2	56018	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	7.63	121.41	495.5	2.88	12.54
SIMULATED 1972 COLD	8.90	134.07	509.5	2.84	11.90
SIMULATED 1972 HOT	6.66	111.87	484.9	2.91	13.06
COLD TRANSIENT GRAMS	38.43	538.55	1754.8	10.61	11.94
COLD STABILIZED GRAMS	28.35	466.97	2066.7	10.68	11.86
HOT TRANSIENT GRAMS	21.62	372.03	1565.9	11.11	14.62
HOT STABILIZED GRAMS	20.47	235.96	2076.8	16.17	13.65

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3195	1.79	13.68	2347	
		MASS	3.56	49.59	498.75	8.82	15.15
LOW CRUISE	33	CONC	3508	1.20	13.82	2061	
		MASS	3.23	24.17	412.83	6.15	19.32
IDLE	0	CONC	2562	0.99	13.56	110	
		MASS	0.64	3.82	82.66	0.09	0.00
COMPOSITE	27	CONC	3113	1.49		1056	
		MASS	1.66	17.54		3.10	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EO157
CAR NUMBER: CC42

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1968	PLYM	FURY2	8	318	2	56064	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.50	99.92	508.3	3.60	12.98
SIMULATED 1972 COLD	7.94	128.38	518.4	2.97	11.95
SIMULATED 1972 HOT	5.41	78.45	500.7	4.08	13.89
COLD TRANSIENT GRAMS	35.15	527.25	1783.2	11.15	11.94
COLD STABILIZED GRAMS	24.39	435.57	2105.1	11.11	11.96
HOT TRANSIENT GRAMS	16.16	152.78	1650.0	19.45	16.75
HOT STABILIZED GRAMS	16.68	125.88	2010.7	16.40	15.16

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3161	1.63	13.42	2479	
		MASS	3.46	44.55	515.94	9.39	14.92
LOW CRUISE	33	CONC	3369	0.80	13.53	2278	
		MASS	3.04	18.53	421.99	6.58	15.33
IDLE	0	CONC	2489	0.65	12.86	87	
		MASS	0.38	1.61	67.19	0.05	0.00
COMPOSITE	27	CONC	3060	1.28		1130	
		MASS	1.44	14.25		3.28	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC150
CAR NUMBER: 0043

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	IART	RCMP	A/C	EVP	EXH	PCV	TRANS
1971	DATS	510	4	97	2	13199	2750	9.9	N	Y	AI	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.76	37.88	306.6	2.83	23.74
SIMULATED 1972 COLD	3.51	53.13	313.1	2.56	21.85
SIMULATED 1972 HOT	2.19	26.38	302.1	3.03	25.41
COLD TRANSIENT GRAMS	16.94	273.95	1082.8	10.05	20.75
COLD STABILIZED GRAMS	9.38	124.51	1265.2	9.12	23.00
HOT TRANSIENT GRAMS	7.04	73.33	1000.9	13.59	28.55
HOT STABILIZED GRAMS	8.96	123.84	1191.1	8.42	24.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	927	0.33	10.60	1560	
		MASS	0.95	6.34	361.00	5.05	23.81
LOW CRUISE	23	CONC	1497	0.94	8.85	605	
		MASS	1.02	16.79	225.64	1.38	34.89
IDLE	0	CONC	1007	0.86	8.07	46	
		MASS	0.09	1.28	24.08	0.04	0.00
COMPOSITE	20	CONC	1002	0.48		478	
		MASS	0.41	4.26		1.41	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0160
CAR NUMBER: 0043

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	DATS	510	4	97	2	13219	2750	9.9	N	Y	AI	Y	S-4

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		5.58	36.24	314.9	3.50	22.86
SIMULATED 1972 COLD		10.01	53.20	316.7	3.35	20.62
SIMULATED 1972 HOT		2.23	23.45	313.6	3.62	24.91
COLD TRANSIENT	GRAMS	65.56	281.90	1064.7	13.52	18.95
COLD STABILIZED	GRAMS	9.54	117.09	1310.3	11.59	22.49
HOT TRANSIENT	GRAMS	7.21	58.82	1041.9	15.54	28.09
HOT STABILIZED	GRAMS	9.03	105.95	1308.0	11.53	22.81

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2019	0.57	10.91	2262	
		MASS	1.76	9.33	294.03	5.55	28.34
LOW CRUISE	23	CONC	1480	0.94	9.14	517	
		MASS	1.18	17.01	236.95	1.22	33.30
IDLE	0	CONC	976	0.37	7.70	58	
		MASS	0.15	0.56	28.56	0.03	0.00
COMPOSITE	20	CONC	1772	0.55		591	
		MASS	0.67	4.57		1.49	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0151
CAR NUMBER: 0044

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1972	VOLV	142S	4	121	2	6185	2750	9.9	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.03	28.98	324.2	2.60	23.28
SIMULATED 1972 COLD	4.71	33.41	326.1	2.59	22.63
SIMULATED 1972 HOT	3.53	25.64	322.8	2.61	23.79
COLD TRANSIENT GRAMS	20.90	138.66	1149.7	10.69	22.67
COLD STABILIZED GRAMS	14.40	111.89	1299.7	8.77	22.60
HOT TRANSIENT GRAMS	12.06	80.41	1125.4	10.79	25.20
HOT STABILIZED GRAMS	15.03	111.23	1302.9	8.03	22.49

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2586	0.79	13.97	2092	
		MASS	1.89	14.09	361.11	5.05	22.88
LOW CRUISE	23	CONC	2437	1.00	12.86	469	
		MASS	1.35	16.35	244.13	0.84	32.49
IDLE	0	CONC	3473	2.82	10.43	59	
		MASS	0.46	5.51	28.90	0.03	0.00
COMPOSITE	20	CONC	2732	1.15		547	
		MASS	0.93	8.85		1.31	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC159
CAR NUMBER: 0044

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	VOLV	142S	4	121	2	6206	2750	9.9	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	8.69	89.95	309.0	2.20	18.64
SIMULATED 1972 COLD	13.45	116.62	303.0	1.76	16.84
SIMULATED 1972 HOT	5.10	65.83	313.5	2.53	20.27
COLD TRANSIENT GRAMS	78.96	554.56	938.1	4.43	15.78
COLD STABILIZED GRAMS	21.88	320.12	1334.3	8.74	17.58
HOT TRANSIENT GRAMS	16.34	203.60	1016.8	10.25	23.41
HOT STABILIZED GRAMS	22.23	295.84	1397.0	8.88	17.74

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	3508	2.74	12.72	1744	
		MASS	2.16	37.65	273.14	2.67	26.26
LOW CRUISE	23	CONC	4238	4.81	10.58	279	
		MASS	2.08	57.05	202.18	0.49	29.84
IDLE	0	CONC	8758	6.59	7.70	45	
		MASS	0.81	16.47	29.28	0.02	0.00
COMPOSITE	20	CONC	4541	3.60		423	
		MASS	1.28	26.25		0.71	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EO221
CAR NUMBER: 0045

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	VOLK	1600	4	97	C	48183	2500	5.4	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.41	22.61	346.6	2.86	22.85
SIMULATED 1972 COLD	3.00	29.86	349.0	3.05	21.97
SIMULATED 1972 HOT	1.96	17.13	344.8	2.72	23.56
COLD TRANSIENT GRAMS	14.16	174.02	1195.0	13.25	21.48
COLD STABILIZED GRAMS	8.36	49.91	1422.5	9.65	22.45
HOT TRANSIENT GRAMS	6.35	78.61	1163.5	10.73	24.87
HOT STABILIZED GRAMS	7.95	69.14	1494.8	10.42	21.09

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1254	0.19	15.05	3368	
		MASS	0.91	2.88	361.04	8.27	24.17
LOW CRUISE	23	CONC	1045	0.10	13.71	624	
		MASS	0.66	0.83	270.04	1.27	32.97
IDLE	0	CONC	2419	0.21	13.22	61	
		MASS	0.27	0.16	53.48	0.09	0.00
COMPOSITE	20	CONC	1444	0.17		829	
		MASS	0.48	0.92		2.15	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC234
CAR NUMBER: 0045

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	VOLK.	1600	4	97	0	48204	2500	9.4	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.43	24.85	359.4	3.01	21.93
SIMULATED 1972 COLD	2.98	31.05	365.0	2.87	21.04
SIMULATED 1972 HOT	2.01	20.18	355.1	3.12	22.65
COLD TRANSIENT GRAMS	14.10	173.85	1235.4	11.16	20.93
COLD STABILIZED GRAMS	8.29	58.99	1502.3	10.35	21.15
HOT TRANSIENT GRAMS	6.77	92.35	1161.1	13.03	24.49
HOT STABILIZED GRAMS	7.90	63.03	1499.9	10.67	21.11

ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	941	0.19	14.14	2726	
		MASS	0.77	2.58	320.46	6.11	27.24
LOW CRUISE	23	CONC	868	0.10	13.17	635	
		MASS	1.09	1.23	257.35	1.69	33.90
IDLE	0	CONC	1685	0.21	12.64	67	
		MASS	0.26	0.39	49.84	0.05	0.00
COMPOSITE	20	CONC	1069	0.17		714	
		MASS	0.47	1.03		1.71	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NLMBER: EC222
CAR NLMEER: CC46

BEFCRE

DYNAMOMETER EMISSION RESLLTS LSING
1975 FEDERAL TEST FRCCEDLRES

YEAR	MAKE	MCDEL	CYL	CID	BBL	CDCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	DATS	51C	4	71	2	24774	2250	8.8	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CC	CC2	NCX	MPG
1975 CCMPOSITE	2.41	27.C7	262.3	1.65	28.5C
SIMULATED 1972 CCLD	2.71	29.18	268.7	1.63	27.56
SIMULATED 1972 HOT	2.19	25.48	257.4	1.66	29.26
CCLD TRANSIENT GRAMS	11.98	127.19	941.3	6.54	27.57
COLD STABILIZED GRAMS	8.37	91.68	1C73.6	5.69	27.56
HOT TRANSIENT GRAMS	8.C4	99.43	857.1	6.8C	31.29
HOT STABILIZED GRAMS	8.57	1C1.27	1C42.1	5.2C	27.91

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ANALYSIS CF KEY-MCDE EMISSICNS

	SPEED		HC	CC	CC2	NCX	MPG
HIGH CRUISE	37	CCNC	3334	C.65	12.86	2C92	
		MASS	1.69	9.C9	3C2.84	4.15	27.62
LOW CRUISE	23	CCNC	33C6	1.55	14.74	6C9	
		MASS	1.32	15.C7	199.83	C.83	39.11
IDLE	0	CCNC	3376	1.13	14.14	81	
		MASS	0.24	2.92	24.5C	C.C2	0.CC
CCMPCSITE	20	CCNC	3339	C.81		594	
		MASS	C.73	5.81		1.10	

AUTOMOTIVE TESTING LABCRATCRIES, INC.
1990C E. COLFAX, AURORA, CCLC. 8CC11

TEST NUMBER: EC233
CAR NUMBER: CC46

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	DATS	510	4	71	2	24797	2250	8.8	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.20	28.59	254.4	1.75	29.08
SIMULATED 1972 COLD	2.72	32.11	264.1	1.58	27.59
SIMULATED 1972 HOT	1.81	25.93	247.0	1.87	30.34
COLD TRANSIENT GRAMS	11.13	138.89	948.1	5.32	27.05
COLD STABILIZED GRAMS	9.29	101.92	1033.0	6.53	28.05
HOT TRANSIENT GRAMS	4.26	92.57	819.7	7.52	33.22
HOT STABILIZED GRAMS	9.35	93.38	1054.8	6.77	27.85

ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2871	0.85	14.41	2634	
		MASS	1.78	14.25	286.45	5.72	28.32
LOW CRUISE	23	CONC	3473	2.20	13.28	777	
		MASS	1.45	18.20	196.36	0.91	38.79
IDLE	0	CONC	3473	1.49	12.59	78	
		MASS	0.25	2.65	27.65	0.05	0.00
COMPOSITE	20	CONC	3045	1.07		741	
		MASS	0.77	7.27		1.48	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC232
CAR NUMBER: CC47

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	MERC	COMET	8	302	2	24514	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.34	37.26	510.8	4.74	15.19
SIMULATED 1972 COLD	5.32	42.99	529.3	4.70	14.51
SIMULATED 1972 HOT	5.35	32.95	496.9	4.77	15.75
COLD TRANSIENT GRAMS	21.25	197.91	1884.1	19.10	14.37
COLD STABILIZED GRAMS	18.68	124.90	2089.8	16.17	14.65
HOT TRANSIENT GRAMS	21.43	122.60	1640.9	19.63	17.10
HOT STABILIZED GRAMS	17.59	100.00	1874.3	14.58	16.43

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3647	0.58	15.14	3221	
		MASS	4.26	17.61	498.61	11.13	16.50
LOW CRUISE	30	CONC	4447	0.55	14.56	2324	
		MASS	3.93	9.81	394.18	6.19	21.10
IDLE	0	CONC	4864	0.21	11.79	105	
		MASS	1.01	0.88	64.21	0.07	0.00
COMPOSITE	25	CONC	3953	0.48		1290	
		MASS	2.15	6.06		3.63	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC239
CAR NUMBER: CC47

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	MERC	COMET	8	302	2	24541	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.37	42.61	490.5	4.89	15.50
SIMULATED 1972 COLD	5.96	44.26	504.7	4.91	15.01
SIMULATED 1972 HOT	4.92	41.37	479.8	4.87	15.89
COLD TRANSIENT GRAMS	24.44	153.26	1794.8	19.95	15.38
COLD STABILIZED GRAMS	20.27	178.67	1990.8	16.91	14.68
HOT TRANSIENT GRAMS	16.62	131.61	1607.5	19.61	17.41
HOT STABILIZED GRAMS	19.37	128.27	1968.7	17.12	15.36

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3786	0.83	14.44	3507	
		MASS	4.22	22.22	492.99	12.14	16.45
LOW CRUISE	30	CONC	4273	0.61	14.06	2943	
		MASS	2.74	13.10	387.44	7.80	21.37
IDLE	0	CONC	2645	0.18	13.39	149	
		MASS	0.48	0.40	70.29	0.12	0.00
COMPOSITE	25	CONC	3630	0.64		1533	
		MASS	1.69	7.27		4.16	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC240
CAR NUMBER: 0048

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	MERC	COMET	6	200	1	35986	3500	11.2	N	N	AI	Y	S-3

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.33	87.74	378.3	1.46	16.81
SIMULATED 1972 COLD	4.88	96.50	391.3	1.44	15.95
SIMULATED 1972 HOT	3.92	81.14	368.5	1.48	17.52
COLD TRANSIENT GRAMS	20.66	378.58	1328.2	6.37	16.35
COLD STABILIZED GRAMS	15.94	345.15	1606.2	4.45	15.59
HOT TRANSIENT GRAMS	13.44	263.39	1157.8	6.67	20.14
HOT STABILIZED GRAMS	14.77	314.45	1592.5	4.41	16.07

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3925	3.06	11.72	1492	
		MASS	3.47	63.40	342.78	4.35	19.64
LOW CRUISE	30	CONC	3821	3.49	8.35	525	
		MASS	3.11	61.96	234.48	1.29	26.06
IDLE	0	CONC	1393	2.24	9.78	56	
		MASS	0.24	15.85	108.54	0.04	0.00
COMPOSITE	25	CONC	3453	2.81		448	
		MASS	1.36	32.85		1.24	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC245
CAR NUMBER: CC48

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	MERC	COMET	6	200	1	35957	3500	11.2	N	N	AI	Y	S-3

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.03	74.97	366.5	2.30	17.80
SIMULATED 1972 COLD	5.71	87.73	379.8	2.15	16.62
SIMULATED 1972 HOT	4.52	65.34	356.4	2.41	18.81
COLD TRANSIENT GRAMS	24.42	385.07	1356.0	9.14	15.95
COLD STABILIZED GRAMS	18.43	272.88	1492.5	7.00	17.32
HOT TRANSIENT GRAMS	15.45	217.17	1180.4	11.06	20.70
HOT STABILIZED GRAMS	16.38	255.45	1534.9	7.58	17.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	4030	2.90	11.51	1627	
		MASS	2.81	48.20	346.27	2.95	20.67
LOW CRUISE	30	CONC	4169	3.31	8.37	689	
		MASS	3.57	58.29	247.75	1.85	25.40
IDLE	0	CONC	3237	0.41	6.76	240	
		MASS	0.82	14.24	110.19	1.02	0.00
COMPOSITE	25	CONC	3900	2.35		599	
		MASS	1.60	27.61		1.60	

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC241
CAR NUMBER: 0049

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHRY	NEWYO	8	383	4	38455	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.74	79.76	564.6	3.50	12.18
SIMULATED 1972 COLD	8.21	82.04	597.0	3.21	11.84
SIMULATED 1972 HOT	5.63	78.03	575.3	3.72	12.44
COLD TRANSIENT GRAMS	39.01	334.53	2037.6	9.84	12.10
COLD STABILIZED GRAMS	22.59	280.80	2439.8	14.22	11.61
HOT TRANSIENT GRAMS	19.66	304.44	1874.9	13.66	13.46
HOT STABILIZED GRAMS	21.73	262.22	2372.5	13.01	12.02

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3891	2.90	13.28	1627	
		MASS	4.84	78.24	535.57	6.73	13.22
LOW CRUISE	33	CONC	4064	2.01	13.51	1452	
		MASS	4.17	46.76	435.67	4.98	17.05
IDLE	0	CONC	4238	3.40	11.54	51	
		MASS	0.90	15.76	85.21	0.07	0.00
COMPOSITE	27	CONC	3972	2.75		738	
		MASS	2.25	34.85		2.42	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC246
CAR NUMBER: CC49

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHRY	NEWYC	8	383	4	38471	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.51	94.50	601.8	3.15	11.55
SIMULATED 1972 COLD	7.71	112.15	610.0	2.87	10.99
SIMULATED 1972 HOT	5.60	81.18	595.6	3.36	12.02
COLD TRANSIENT GRAMS	35.38	546.14	2049.3	8.16	10.77
COLD STABILIZED GRAMS	22.42	295.02	2526.0	13.40	11.20
HOT TRANSIENT GRAMS	19.61	313.84	1940.8	11.81	13.02
HOT STABILIZED GRAMS	22.43	320.55	2428.2	11.55	11.42

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3925	3.31	12.89	1125	
		MASS	4.77	90.88	519.61	4.70	13.14
LOW CRUISE	33	CONC	3960	2.66	13.05	1010	
		MASS	4.19	69.64	426.78	3.04	16.21
IDLE	0	CONC	4169	4.06	11.16	67	
		MASS	1.01	21.73	93.42	0.09	0.00
COMPOSITE	27	CONC	3973	3.21		518	
		MASS	2.30	44.35		1.64	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0242
CAR NUMBER: 0050

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	PINTO	4	98	1	32609	2250	8.8	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.60	22.47	293.9	2.36	25.91
SIMULATED 1972 COLD	4.92	32.10	301.1	2.28	24.26
SIMULATED 1972 HOT	4.35	15.20	288.5	2.42	27.31
COLD TRANSIENT GRAMS	16.02	194.42	1032.0	8.27	23.42
COLD STABILIZED GRAMS	20.90	46.32	1226.2	8.81	25.11
HOT TRANSIENT GRAMS	11.70	67.68	937.4	9.31	30.08
HOT STABILIZED GRAMS	20.30	53.06	1660.8	8.30	18.96

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2645	0.78	13.91	2866	
		MASS	1.79	12.29	295.75	5.99	27.77
LOW CRUISE	23	CONC	2437	0.52	13.76	593	
		MASS	1.24	6.28	215.89	0.91	38.78
IDLE	0	CONC	4343	0.16	11.16	94	
		MASS	0.71	0.56	37.58	0.05	0.00
COMPOSITE	20	CONC	2932	0.60		741	
		MASS	1.05	4.13		1.55	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC252
CAR NUMBER: CC50

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	PINTO	4	94	1	32625	2250	8.8	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.50	25.29	310.5	3.08	24.86
SIMULATED 1972 COLD	2.79	31.68	316.0	3.06	23.77
SIMULATED 1972 HOT	2.28	20.48	306.4	3.09	25.76
COLD TRANSIENT GRAMS	11.79	149.01	1035.4	11.52	24.87
COLD STABILIZED GRAMS	9.15	88.60	1334.9	11.44	22.81
HOT TRANSIENT GRAMS	7.95	64.98	962.8	11.72	29.82
HOT STABILIZED GRAMS	8.80	151.80	1355.5	11.30	21.14

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2784	0.67	14.11	3036	
		MASS	1.96	10.57	256.79	7.88	27.86
LOW CRUISE	23	CONC	3202	1.07	13.33	595	
		MASS	1.33	14.57	199.23	0.86	39.35
IDLE	0	CONC	2670	1.42	13.05	116	
		MASS	0.23	3.58	41.97	0.05	0.00
COMPOSITE	20	CONC	2808	0.82		783	
		MASS	0.79	6.54		1.97	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC243
CAR NUMBER: 0051

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	OPEL	KADET	4	91	2	46438	2250	8.8	N	N	NO	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	16.52	86.74	299.0	3.49	18.26
SIMULATED 1972 COLD	16.64	93.49	285.4	3.53	18.36
SIMULATED 1972 HOT	16.43	81.65	309.2	3.46	18.19
COLD TRANSIENT GRAMS	45.01	335.14	1004.0	14.46	19.43
COLD STABILIZED GRAMS	79.82	366.07	1136.2	11.98	17.45
HOT TRANSIENT GRAMS	43.43	246.27	1183.0	13.95	19.04
HOT STABILIZED GRAMS	82.39	368.75	1350.6	11.64	15.65

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	3786	4.03	12.16	2169	
		MASS	2.86	74.47	322.19	5.82	19.87
LOW CRUISE	23	CONC	10426	3.93	10.08	1396	
		MASS	6.33	57.50	212.20	2.40	27.61
IDLE	0	CONC	29965	8.47	3.92	22	
		MASS	8.41	22.41	14.70	0.02	0.00
COMPOSITE	20	CONC	9255	4.63		800	
		MASS	6.73	39.34		1.75	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC253
CAR NUMBER: 0051

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	OPEL	KADET	4	91	2	46459	2250	8.8	N	N	NO	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	17.02	98.52	295.4	2.97	17.67
SIMULATED 1972 COLD	17.55	109.15	282.0	2.92	17.49
SIMULATED 1972 HOT	16.62	90.51	305.4	3.01	17.80
COLD TRANSIENT GRAMS	52.68	366.21	1025.2	12.43	18.39
COLD STABILIZED GRAMS	79.98	452.38	1089.8	9.47	16.72
HOT TRANSIENT GRAMS	45.70	226.43	1200.9	13.12	19.10
HOT STABILIZED GRAMS	86.82	433.33	1393.8	10.35	14.59

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	4169	4.42	11.92	1899	
		MASS	3.35	74.16	321.86	4.91	19.83
LOW CRUISE	23	CONC	10079	6.52	9.30	682	
		MASS	4.88	87.04	192.89	1.23	25.81
IDLE	0	CONC	25862	8.47	4.92	44	
		MASS	7.33	36.50	25.79	0.03	0.00
COMPOSITE	20	CONC	8743	5.17		562	
		MASS	6.04	51.51		1.35	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC244
CAR NUMBER: CC52

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODMR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1968	FORD	FAIRL	8	289	2	42332	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		5.57	36.61	511.7	3.68	15.17
SIMULATED 1972 COLD		6.30	51.92	519.5	3.49	14.34
SIMULATED 1972 HOT		5.02	25.07	505.8	3.83	15.87
COLD TRANSIENT	GRAMS	27.33	298.58	1782.2	13.66	13.90
COLD STABILIZED	GRAMS	19.93	90.82	2114.0	12.51	14.78
HOT TRANSIENT	GRAMS	17.72	97.17	1679.6	16.19	17.21
HOT STABILIZED	GRAMS	19.40	89.22	2132.1	12.80	14.69

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	4516	0.83	13.76	2324	
		MASS	5.01	26.38	481.64	8.47	16.52
LOW CRUISE	30	CONC	2889	0.35	13.28	1415	
		MASS	2.62	8.44	364.79	3.92	23.05
IDLE	0	CONC	1497	0.43	13.53	163	
		MASS	0.45	1.19	86.58	0.11	0.00
COMPOSITE	25	CONC	3794	0.66		896	
		MASS	1.87	8.31		2.66	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC251
CAR NUMBER: CC52

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	FORD	FAIRL	8	289	2	42320	3500	11.2	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.27	33.61	503.6	3.60	15.54
SIMULATED 1972 COLD	5.67	39.09	520.2	3.69	14.85
SIMULATED 1972 HOT	4.98	29.48	491.0	3.53	16.10
COLD TRANSIENT GRAMS	22.84	186.61	1865.1	15.97	14.57
COLD STABILIZED GRAMS	19.66	106.57	2036.5	11.70	15.13
HOT TRANSIENT GRAMS	17.67	114.55	1646.0	14.77	17.27
HOT STABILIZED GRAMS	19.82	117.76	2082.2	10.82	14.72

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	4899	0.94	13.76	2324	
		MASS	5.24	30.78	477.99	7.93	16.40
LOW CRUISE	30	CONC	5212	0.87	13.19	1463	
		MASS	4.36	20.12	364.57	3.68	21.72
IDLE	0	CONC	3126	1.61	13.33	136	
		MASS	0.56	7.12	84.31	0.11	0.00
COMPOSITE	25	CONC	4609	1.01		898	
		MASS	2.16	14.49		2.90	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC254
CAR NUMBER: 0053

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	VOLVO	142S	4	121	2	19175	2750	9.9	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	8.28	87.56	283.9	1.23	19.89
SIMULATED 1972 COLD	8.44	89.14	293.5	1.34	19.35
SIMULATED 1972 HOT	8.16	86.36	276.6	1.14	20.33
COLD TRANSIENT GRAMS	26.81	279.33	1085.0	6.61	20.21
COLD STABILIZED GRAMS	36.48	389.20	1116.3	3.42	18.60
HOT TRANSIENT GRAMS	24.69	258.51	958.1	5.15	22.54
HOT STABILIZED GRAMS	36.05	383.61	1204.4	3.62	17.84

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	4343	3.66	12.19	1149	
		MASS	3.19	66.37	308.23	2.77	21.07
LOW CRUISE	23	CONC	5803	6.24	10.13	208	
		MASS	3.09	82.75	191.61	0.36	26.87
IDLE	0	CONC	23637	8.47	6.92	44	
		MASS	3.49	19.69	26.83	0.03	0.00
COMPOSITE	20	CONC	8009	4.64		291	
		MASS	3.37	38.34		0.71	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC262
CAR NUMBER: CO53

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	VOLVO	142S	4	121	2	19195	2750	9.5	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.73	66.86	307.4	1.53	20.83
SIMULATED 1972 COLD	4.93	67.50	318.3	1.67	20.24
SIMULATED 1972 HOT	4.59	66.37	299.2	1.42	21.30
COLD TRANSIENT GRAMS	16.99	209.55	1141.8	8.02	21.32
COLD STABILIZED GRAMS	19.98	296.68	1245.5	4.50	19.32
HOT TRANSIENT GRAMS	14.42	201.11	998.8	6.14	23.90
HOT STABILIZED GRAMS	19.87	288.73	1173.1	4.23	20.29

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	3752	2.78	12.81	1444	
		MASS	2.75	49.56	325.29	3.51	21.62
LOW CRUISE	23	CONC	4516	4.77	11.36	224	
		MASS	2.41	60.37	220.29	0.37	27.59
IDLE	0	CONC	5212	6.17	10.04	63	
		MASS	0.53	15.13	37.57	0.03	0.00
COMPOSITE	20	CONC	4098	3.47		359	
		MASS	1.30	28.75		0.88	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC255
CAR NUMBER: 0054

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INPT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	MERC	MONTE	8	400	2	5939	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.01	58.13	554.9	3.49	12.74
SIMULATED 1972 COLD	4.45	69.37	616.0	2.38	12.05
SIMULATED 1972 HOT	3.67	49.65	578.9	4.33	13.32
COLD TRANSIENT GRAMS	19.06	291.03	2216.2	2.13	11.89
COLD STABILIZED GRAMS	14.34	229.22	2404.1	15.74	12.20
HOT TRANSIENT GRAMS	13.18	143.17	1937.7	16.72	14.75
HOT STABILIZED GRAMS	13.36	204.10	2341.9	13.55	12.68

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2075	0.65	14.53	3175	
		MASS	2.39	19.17	538.95	11.84	15.44
LOW CRUISE	33	CONC	2245	0.90	13.85	1685	
		MASS	1.79	25.87	414.25	4.83	19.34
IDLE	0	CONC	2750	1.91	13.42	100	
		MASS	0.32	7.47	77.78	0.11	0.00
COMPOSITE	27	CONC	2216	0.87		1103	
		MASS	1.01	12.43		3.58	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC261
CAR NUMBER: 0054

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	MERC	MONTR	8	400	2	9557	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.47	46.83	634.0	4.27	12.39
SIMULATED 1972 COLD	3.80	57.68	652.1	4.23	11.80
SIMULATED 1972 HOT	3.23	38.65	620.3	4.31	12.88
COLD TRANSIENT GRAMS	15.68	265.02	2210.3	18.66	12.15
COLD STABILIZED GRAMS	12.83	167.59	2680.4	13.05	11.49
HOT TRANSIENT GRAMS	11.37	122.26	1571.7	15.24	14.78
HOT STABILIZED GRAMS	11.54	162.25	2573.2	14.89	11.57

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1915	0.52	14.53	2904	
		MASS	2.43	13.73	565.85	11.21	14.86
LOW CRUISE	33	CONC	2002	0.61	14.08	1760	
		MASS	2.61	13.30	434.54	5.43	19.21
IDLE	0	CONC	2054	0.92	14.14	184	
		MASS	0.59	6.45	111.40	0.15	0.00
COMPOSITE	27	CONC	1949	0.58		1109	
		MASS	1.26	9.03		3.57	

AUTOMOTIVE TESTING LABORATORIES, INC.
15900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC258
CAR NUMBER: CC55

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	PONT	SAFAR	8	400	4	10868	5000	13.4	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.14	35.43	701.2	6.60	11.57
SIMULATED 1972 COLD	4.46	42.86	720.8	6.65	11.10
SIMULATED 1972 HOT	3.91	29.83	686.5	6.55	11.94
COLD TRANSIENT GRAMS	17.41	197.83	2506.9	29.65	11.32
COLD STABILIZED GRAMS	16.02	123.59	2899.3	20.25	10.90
HOT TRANSIENT GRAMS	13.28	100.15	2249.3	28.90	13.28
HOT STABILIZED GRAMS	16.59	117.20	2920.1	20.10	10.86

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2663	0.32	14.65	3794	
		MASS	3.52	10.75	623.77	16.18	13.66
LOW CRUISE	33	CONC	3341	0.76	14.14	1937	
		MASS	3.28	19.15	499.25	7.03	16.62
IDLE	0	CONC	3508	3.10	12.67	103	
		MASS	0.84	13.01	107.60	0.11	0.00
COMPOSITE	27	CONC	2888	0.86		1289	
		MASS	1.78	13.12		4.95	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC267
CAR NUMBER: 0055

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	PONT	SAFAR	8	400	4	10887	5000	13.4	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.85	35.62	705.3	5.51	11.91
SIMULATED 1972 COLD	4.35	47.14	718.8	4.78	11.04
SIMULATED 1972 HOT	3.47	26.93	695.0	6.05	11.90
COLD TRANSIENT GRAMS	18.20	240.94	2440.2	18.42	11.30
COLD STABILIZED GRAMS	14.41	112.64	2951.0	17.41	10.80
HOT TRANSIENT GRAMS	11.62	89.34	2261.7	28.00	13.33
HOT STABILIZED GRAMS	14.63	113.05	2903.9	17.35	10.96

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2141	0.22	13.91	3446	
		MASS	2.96	6.86	607.74	14.59	14.18
LOW CRUISE	33	CONC	2576	0.36	13.85	1837	
		MASS	2.81	10.03	478.97	6.41	17.68
IDLE	0	CONC	2958	1.94	12.83	97	
		MASS	0.80	11.59	114.82	0.11	0.00
COMPOSITE	27	CONC	2336	0.54		1194	
		MASS	1.56	10.23		4.48	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NLMBER: EC259
CAR NLMBER: CC56

BEFCRE

DYNAMOMETER EMISSICN RESLLTS USING
1975 FEDERAL TEST PRCCECLRES

YEAR	MAKE	MODEL	CYL	CID	BBL	CCCMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	BUIC	SPECI	8	350	2	23493	35CC	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CC	CC2	NCX	MPG
1975 CCMPOSITE	3.82	78.82	485.7	2.20	14.33
SIMULATEC 1972 COLD	4.41	93.92	497.8	1.98	13.51
SIMULATEC 1972 HCT	3.36	67.44	476.6	2.36	15.C1
COLD TRANSIENT GRAMS	18.62	373.31	1666.6	7.82	13.94
CCLD STABILIZEC GRAMS	14.49	331.C7	2C46.4	7.C5	13.12
HOT TRANSIENT GRAMS	10.73	174.73	1527.9	1C.67	17.7C
HOT STABILIZEC GRAMS	13.64	306.79	1993.6	6.88	13.61

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ANALYSIS CF KEY-MODE EMISSICNS

	SPEED		HC	CC	CC2	NCX	MPG
HIGH CRUISE	45	CONC	2054	0.71	14.14	2169	
		MASS	2.19	17.C4	486.CC	7.40	17.14
LCW CRUISE	30	CCNC	2629	1.52	13.42	585	
		MASS	2.36	28.42	375.54	1.78	20.82
IDLE	0	CONC	4273	5.68	9.12	61	
		MASS	0.65	19.97	55.16	C.C4	C.CC
CCMPOSITE	25	CCNC	2519	1.67		594	
		MASS	1.22	2C.16		2.C1	

AUTCMOTIVE TESTING LABCRATCRIES, INC.
1990C E. COLFAX, AURORA, CCLC. 8CO11

TEST NUMBER: EC266
CAR NUMBER: 0056

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	IART	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	BUIC	SPECI	8	350	2	23510	3500	11.2	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.90	44.03	530.7	2.45	14.62
SIMULATED 1972 COLD	3.50	65.35	540.9	2.18	13.60
SIMULATED 1972 HOT	2.44	27.94	523.0	2.66	15.50
COLD TRANSIENT GRAMS	16.54	369.06	1762.8	8.25	13.57
COLD STABILIZED GRAMS	9.75	121.07	2293.6	8.10	13.63
HOT TRANSIENT GRAMS	8.56	88.50	1628.8	11.86	18.11
HOT STABILIZED GRAMS	8.67	103.72	2215.8	8.52	14.25

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1984	0.76	14.14	2169	
		MASS	2.14	18.83	462.96	7.37	17.84
LOW CRUISE	30	CONC	1870	0.53	13.33	566	
		MASS	1.63	11.21	365.50	2.12	22.94
IDLE	0	CONC	1532	0.51	12.19	120	
		MASS	0.38	2.26	83.44	0.09	0.00
COMPOSITE	25	CONC	1890	0.65		614	
		MASS	0.96	7.41		2.10	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC260
CAR NUMBER: 0057

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	IMPAL	8	350	4	35953	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.07	90.05	450.3	2.56	14.65
SIMULATED 1972 COLD	5.94	102.50	455.0	2.58	14.03
SIMULATED 1972 HOT	4.41	80.65	446.7	3.25	15.16
COLD TRANSIENT GRAMS	24.98	384.09	1521.9	9.58	14.75
COLD STABILIZED GRAMS	19.59	384.68	1890.8	5.77	13.41
HOT TRANSIENT GRAMS	13.46	220.23	1455.8	14.58	17.59
HOT STABILIZED GRAMS	18.35	342.25	1661.9	10.84	13.95

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2854	1.17	14.35	2788	
		MASS	2.87	26.49	456.38	8.99	17.56
LOW CRUISE	33	CONC	3341	1.04	14.14	1744	
		MASS	2.60	23.81	341.01	3.99	23.03
IDLE	0	CONC	5559	7.13	9.92	82	
		MASS	0.90	27.09	56.89	0.05	0.00
COMPOSITE	27	CONC	3398	2.18		1039	
		MASS	1.58	26.58		2.76	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC265
CAR NUMBER: 0057

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMTR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	IMPAL	8	350	4	35975	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.72	40.17	516.2	2.62	15.07
SIMULATED 1972 COLD		4.53	59.30	517.2	2.22	14.25
SIMULATED 1972 HOT		3.10	25.73	515.5	2.93	15.74
COLD TRANSIENT	GRAMS	21.17	332.75	1678.7	7.64	14.33
COLD STABILIZED	GRAMS	12.84	112.02	2200.2	9.02	14.19
HOT TRANSIENT	GRAMS	10.40	80.95	1665.7	12.95	17.80
HOT STABILIZED	GRAMS	11.02	72.26	2210.4	9.69	14.54

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2548	0.56	14.59	2556	
		MASS	2.67	12.36	458.53	8.02	18.31
LOW CRUISE	33	CONC	3167	0.90	14.14	1453	
		MASS	2.66	18.35	359.92	3.56	22.42
IDLE	0	CONC	1727	0.11	14.26	195	
		MASS	0.48	0.64	96.91	0.16	0.00
COMPOSITE	27	CONC	2464	0.49		964	
		MASS	1.26	5.53		2.53	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC263
CAR NUMBER: CC58

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	OLDS	DELTA	8	455	2	11323	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.53	125.89	557.1	2.46	11.53
SIMULATED 1972 COLD	6.33	129.12	575.6	2.42	11.15
SIMULATED 1972 HOT	4.92	123.44	543.2	2.48	11.83
COLD TRANSIENT GRAMS	26.31	406.44	2008.7	10.70	11.90
COLD STABILIZED GRAMS	21.17	561.96	2308.1	7.48	10.52
HOT TRANSIENT GRAMS	15.73	363.87	1765.8	11.13	13.62
HOT STABILIZED GRAMS	20.41	552.55	2225.9	7.22	10.85

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2802	2.67	13.19	1659	
		MASS	3.36	72.87	530.46	7.95	13.58
LOW CRUISE	33	CONC	3202	2.87	12.92	884	
		MASS	3.10	62.16	425.34	2.75	16.71
IDLE	0	CONC	4343	6.07	9.92	72	
		MASS	0.97	32.95	84.11	0.07	0.00
COMPOSITE	27	CONC	3125	3.18		586	
		MASS	1.80	46.18		2.32	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC276
CAR NUMBER: OC58

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	OLDS	DELTA	8	455	2	11347	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.42	104.98	559.9	2.93	12.05
SIMULATED 1972 COLD	5.08	112.53	589.3	2.90	11.38
SIMULATED 1972 HOT	3.92	99.29	537.7	2.95	12.61
COLD TRANSIENT GRAMS	21.13	400.12	1983.3	12.46	12.13
COLD STABILIZED GRAMS	16.99	443.88	2436.7	9.32	10.76
HOT TRANSIENT GRAMS	12.39	300.76	1596.1	12.80	15.42
HOT STABILIZED GRAMS	16.54	412.84	2444.9	9.72	10.90

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2732	2.66	13.28	1821	
		MASS	3.26	61.20	520.87	7.06	14.20
LOW CRUISE	33	CONC	3167	2.82	12.81	990	
		MASS	2.83	62.45	403.90	2.92	17.43
IDLE	0	CONC	2437	2.67	12.45	117	
		MASS	0.58	16.99	118.98	0.12	0.00
COMPOSITE	27	CONC	2725	2.55		665	
		MASS	1.50	33.09		2.17	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC264
CAR NUMBER: 0059

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	PONT	TEMPE	8	350	2	77968	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.74	86.48	520.7	1.69	13.14
SIMULATED 1972 COLD	9.28	84.44	533.9	1.65	12.79
SIMULATED 1972 HOT	4.81	88.03	510.8	1.72	13.40
COLD TRANSIENT GRAMS	51.06	310.40	1761.9	6.02	13.48
COLD STABILIZED GRAMS	18.58	322.87	2242.6	6.35	12.21
HOT TRANSIENT GRAMS	17.54	337.34	1588.4	6.58	14.95
HOT STABILIZED GRAMS	16.80	247.74	2164.6	6.68	13.15

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3508	2.78	12.92	1316	
		MASS	4.17	74.23	483.65	4.76	14.52
LOW CRUISE	33	CONC	3063	0.90	13.33	1125	
		MASS	2.71	20.91	399.51	3.00	20.38
IDLE	0	CONC	2952	0.48	11.66	121	
		MASS	0.79	1.61	76.90	0.08	0.00
COMPOSITE	27	CONC	3360	2.02		609	
		MASS	1.87	21.96		1.64	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0275
CAR NUMBER: 0C59

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	PONT	TEMPE	8	350	2	77980	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.34	86.66	560.5	1.95	12.48
SIMULATED 1972 COLD	6.64	90.82	573.6	1.82	12.08
SIMULATED 1972 HOT	4.36	83.53	550.6	2.04	12.80
COLD TRANSIENT GRAMS	32.37	373.27	1846.1	6.46	12.82
COLD STABILIZED GRAMS	17.40	307.84	2456.1	7.20	11.45
HOT TRANSIENT GRAMS	15.33	318.65	1673.4	8.12	14.63
HOT STABILIZED GRAMS	15.88	255.06	2416.0	7.41	11.96

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3439	2.98	12.81	1280	
		MASS	4.26	84.86	455.43	1.70	14.79
LOW CRUISE	33	CONC	2680	0.88	13.42	1087	
		MASS	2.55	20.68	394.36	3.05	20.48
IDLE	0	CONC	2297	0.61	13.33	214	
		MASS	0.70	4.16	108.96	0.17	0.00
COMPOSITE	27	CONC	3151	2.17		633	
		MASS	1.82	26.23		1.00	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC272
CAR NUMBER: 0060

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	DODG	DART	6	225	1	21739	3000	10.3	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.08	52.24	405.7	4.55	17.79
SIMULATED 1972 COLD	5.53	70.16	407.9	4.02	16.63
SIMULATED 1972 HOT	2.99	38.71	404.0	4.95	16.77
COLD TRANSIENT GRAMS	29.41	404.66	1335.0	10.28	15.75
COLD STABILIZED GRAMS	12.07	121.53	1724.2	19.87	17.55
HOT TRANSIENT GRAMS	10.37	168.82	1306.2	17.25	20.26
HOT STABILIZED GRAMS	11.28	90.99	1599.1	19.61	19.29

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2819	2.43	13.56	2401	
		MASS	2.75	57.66	420.26	7.78	17.14
LOW CRUISE	30	CONC	3063	0.90	14.23	2788	
		MASS	2.13	17.49	328.37	6.33	24.56
IDLE	0	CONC	3126	0.98	13.56	232	
		MASS	0.52	3.24	50.49	0.14	0.00
COMPOSITE	25	CONC	2901	1.87		1320	
		MASS	1.26	18.47		2.92	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC284
CAR NUMBER: 0060

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	DODG	DART	6	225	1	21757	3000	10.3	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.73	37.34	401.0	4.40	19.02
SIMULATED 1972 COLD	2.97	42.34	416.6	4.43	18.08
SIMULATED 1972 HOT	2.54	33.57	389.2	4.37	19.79
COLD TRANSIENT GRAMS	13.07	263.08	1462.5	14.34	16.96
COLD STABILIZED GRAMS	9.24	54.48	1662.4	18.90	19.29
HOT TRANSIENT GRAMS	5.84	197.30	1256.8	13.87	20.34
HOT STABILIZED GRAMS	9.26	63.24	1646.8	17.27	19.31

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2732	2.62	13.39	2440	
		MASS	2.67	53.73	407.28	7.29	17.81
LOW CRUISE	30	CONC	3132	1.50	13.71	2092	
		MASS	2.30	26.81	315.45	4.68	24.41
IDLE	0	CONC	1821	0.09	12.72	200	
		MASS	0.31	0.63	50.17	0.10	0.00
COMPOSITE	25	CONC	2609	1.91		1121	
		MASS	1.12	16.84		2.51	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC273
CAR NUMBER: 0061

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	BUIC	ELECT	8	455	4	38759	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.51	82.45	565.7	2.33	12.43
SIMULATED 1972 COLD	6.21	97.28	574.8	2.09	11.92
SIMULATED 1972 HOT	4.98	71.26	565.5	2.50	12.84
COLD TRANSIENT GRAMS	27.64	372.28	1840.5	8.39	12.94
COLD STABILIZED GRAMS	18.95	357.33	2470.2	7.32	11.09
HOT TRANSIENT GRAMS	18.42	177.08	1774.0	11.44	15.40
HOT STABILIZED GRAMS	19.53	354.88	2394.5	6.96	11.38

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3439	1.59	13.14	1992	
		MASS	4.09	61.96	486.34	7.54	14.93
LOW CRUISE	33	CONC	4308	3.44	12.19	624	
		MASS	4.21	70.77	371.12	1.82	17.97
IDLE	0	CONC	2152	0.13	12.51	111	
		MASS	0.55	1.04	100.68	0.11	0.00
COMPOSITE	27	CONC	3297	1.45		593	
		MASS	1.82	24.00		2.09	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC283
CAR NUMBER: 0061

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	FCV	TRANS
1970	BUIC	ELECT	8	455	4	38763	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.18	86.85	604.5	2.73	11.76
SIMULATED 1972 COLD	5.68	97.69	620.2	2.63	11.25
SIMULATED 1972 HOT	4.80	78.67	592.5	2.80	12.18
COLD TRANSIENT GRAMS	22.29	400.49	2021.9	11.74	11.94
COLD STABILIZED GRAMS	20.31	332.16	2629.9	8.00	10.66
HOT TRANSIENT GRAMS	15.66	257.89	1814.1	12.97	14.33
HOT STABILIZED GRAMS	20.16	333.29	2547.7	7.97	10.94

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3126	1.64	13.76	2634	
		MASS	3.76	52.97	508.40	8.58	14.76
LOW CRUISE	33	CONC	4169	2.87	12.97	855	
		MASS	3.95	58.34	364.26	2.75	18.23
IDLE	0	CONC	2402	0.66	13.11	157	
		MASS	0.71	3.49	113.05	0.16	0.00
COMPOSITE	27	CONC	3105	1.52		797	
		MASS	1.82	21.94		2.52	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC274
CAR NUMBER: 0062

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV	IMPAL	8	400	2	13300	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.54	43.96	661.1	3.39	11.65
SIMULATED 1972 COLD	4.12	64.13	702.5	3.08	10.91
SIMULATED 1972 HOT	4.86	28.74	665.1	3.62	12.27
COLD TRANSIENT GRAMS	20.20	386.99	2274.5	10.78	11.03
COLD STABILIZED GRAMS	10.69	94.01	2993.9	12.29	10.80
HOT TRANSIENT GRAMS	25.78	121.52	1994.0	14.87	14.34
HOT STABILIZED GRAMS	35.99	73.93	2701.5	11.16	11.70

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ANALYSIS OF KEY-MODE EMISSIONS

SPEED			HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	1950	2.09	13.56	1125	
		MASS	2.49	68.66	614.71	5.23	12.19
LOW CRUISE	33	CONC	1202	0.74	13.97	624	
		MASS	1.15	24.38	573.49	2.52	14.47
IDLE	0	CONC	1463	0.12	12.19	807	
		MASS	0.35	1.77	123.06	0.32	0.00
COMPOSITE	27	CONC	1782	1.48		735	
		MASS	1.90	21.04		1.83	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC282
CAR NUMBER: 0062

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CDCMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	CHEV	IMPAL	8	400	2	13318	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.99	44.56	678.9	3.29	11.74
SIMULATED 1972 COLD	3.20	50.45	680.0	2.97	11.58
SIMULATED 1972 HOT	2.83	40.12	678.1	3.54	11.87
COLD TRANSIENT GRAMS	13.83	266.57	2101.1	9.80	12.68
COLD STABILIZED GRAMS	10.19	111.79	2998.7	12.46	10.69
HOT TRANSIENT GRAMS	11.07	189.12	2087.3	14.11	13.44
HOT STABILIZED GRAMS	9.20	83.49	2725.0	11.18	11.88

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2224	1.77	14.14	1899	
		MASS	3.00	59.91	612.02	7.41	12.44
LOW CRUISE	33	CONC	1602	0.25	13.91	1569	
		MASS	1.99	5.44	517.68	5.28	16.72
IDLE	0	CONC	2141	0.41	13.91	315	
		MASS	0.67	1.44	97.59	0.24	0.00
COMPOSITE	27	CONC	2143	1.27		926	
		MASS	1.42	16.56		2.73	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC299
CAR NUMBER: 0063

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	CHRY	300	8	383	4	34481	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.66	110.35	507.6	1.44	12.68
SIMULATED 1972 COLD	8.17	108.39	518.5	1.35	12.46
SIMULATED 1972 HOT	5.52	111.83	499.5	1.50	12.86
COLD TRANSIENT GRAMS	38.39	337.74	1746.4	4.50	13.55
COLD STABILIZED GRAMS	22.85	475.16	2142.1	5.62	11.56
HOT TRANSIENT GRAMS	18.57	363.57	1603.8	5.65	14.55
HOT STABILIZED GRAMS	20.78	422.23	2133.8	5.59	11.58

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4204	5.31	11.41	630	
		MASS	5.58	104.89	445.62	2.48	14.18
LOW CRUISE	33	CONC	4134	3.88	12.27	875	
		MASS	5.62	79.63	383.64	2.71	16.91
IDLE	0	CONC	3752	3.70	12.16	75	
		MASS	1.65	17.94	87.15	0.06	0.00
COMPOSITE	27	CONC	4114	4.60		392	
		MASS	3.06	46.55		1.06	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC301
CAR NUMBER: CC63

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RLHP	A/C	EVP	EXH	PCV	TRANS
1969	CHRY	300	8	383	4	34497	4500	12.7	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.73	87.17	544.4	1.94	12.67
SIMULATED 1972 COLD	8.69	94.28	547.9	1.86	12.31
SIMULATED 1972 HOT	5.25	81.81	541.9	2.00	12.96
COLD TRANSIENT GRAMS	44.65	319.54	1807.6	6.34	13.26
COLD STABILIZED GRAMS	20.53	387.55	2301.5	7.60	11.52
HOT TRANSIENT GRAMS	18.84	225.99	1762.4	7.41	14.93
HOT STABILIZED GRAMS	19.54	326.47	2281.2	7.69	12.01

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4134	5.01	11.92	778	
		MASS	4.76	124.65	449.85	2.85	13.48
LOW CRUISE	33	CONC	4586	4.53	12.05	701	
		MASS	4.13	89.36	367.89	2.11	17.08
IDLE	0	CONC	3126	1.62	13.42	88	
		MASS	0.41	9.00	93.69	0.15	0.00
COMPOSITE	27	CONC	3998	4.09		378	
		MASS	1.91	46.87		1.10	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC300
CAR NUMBER: CC64

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	FORD	MAVER	6	250	1	29780	2750	9.9	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	2.96	26.07	395.9	3.67	19.96
SIMULATED 1972 COLD	3.16	33.57	408.1	3.82	18.91
SIMULATED 1972 HOT	2.81	20.41	386.7	3.56	20.82
COLD TRANSIENT GRAMS	12.37	193.54	1440.8	16.19	18.22
COLD STABILIZED GRAMS	11.34	58.25	1620.1	12.49	19.62
HOT TRANSIENT GRAMS	9.75	94.81	1280.0	14.19	22.27
HOT STABILIZED GRAMS	11.03	61.92	1577.0	11.59	20.06

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2917	1.55	13.73	2672	
		MASS	2.45	34.79	365.78	6.96	20.80
LOW CRUISE	23	CONC	2193	0.51	14.26	533	
		MASS	1.56	6.36	291.90	1.13	29.02
IDLE	0	CONC	1828	0.08	13.19	108	
		MASS	0.29	0.39	51.14	0.05	0.00
COMPOSITE	20	CONC	2642	1.09		694	
		MASS	0.98	9.68		1.81	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC302
CAR NUMBER: 0064

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	FORD	MAVER	6	250	1	29802	2750	9.9	N	N	EM	Y	A

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		3.08	27.41	382.7	4.17	20.45
SIMULATED 1972 COLD		3.22	33.61	394.9	4.32	19.45
SIMULATED 1972 HOT		2.97	22.73	373.5	4.06	21.27
COLD TRANSIENT	GRAMS	12.31	181.18	1439.0	17.78	18.44
COLD STABILIZED	GRAMS	11.86	70.92	1523.1	14.60	20.51
HOT TRANSIENT	GRAMS	10.40	99.56	1278.2	15.85	22.15
HOT STABILIZED	GRAMS	11.81	66.69	1491.1	12.99	20.99

ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2871	1.70	13.76	1760	
		MASS	2.30	30.42	359.04	7.05	21.51
LOW CRUISE	23	CONC	2837	0.53	14.08	1183	
		MASS	1.69	5.88	276.76	2.18	30.57
IDLE	0	CONC	3125	0.18	13.39	478	
		MASS	0.27	0.63	56.31	0.18	0.00
COMPOSITE	20	CONC	2914	1.21		864	
		MASS	0.94	8.69		2.08	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC303
CAR NUMBER: 0065

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	VOLV	144S	4	121	2	17054	3000	10.3	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.72	57.89	350.2	3.36	19.53
SIMULATED 1972 COLD	6.56	71.34	363.7	3.61	17.93
SIMULATED 1972 HOT	3.33	47.74	340.0	3.17	20.93
COLD TRANSIENT GRAMS	35.61	329.98	1302.6	16.67	16.81
COLD STABILIZED GRAMS	13.55	205.09	1425.5	10.44	19.15
HOT TRANSIENT GRAMS	11.44	152.94	1124.2	13.33	23.21
HOT STABILIZED GRAMS	10.27	163.39	1379.5	9.00	20.54

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2917	2.13	13.68	2502	
		MASS	2.91	41.92	376.06	6.73	19.80
LOW CRUISE	30	CONC	2332	0.61	14.44	1608	
		MASS	1.46	9.99	297.14	2.98	28.05
IDLE	0	CONC	3960	3.57	12.89	111	
		MASS	0.43	8.15	42.30	0.05	0.00
COMPOSITE	25	CONC	3045	2.12		960	
		MASS	1.08	16.83		2.07	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC313
CAR NUMBER: 0065

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	VOLV	144S	4	121	2	17078	3000	10.3	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.51	42.02	372.4	3.47	19.81
SIMULATED 1972 COLD	4.72	47.32	390.9	4.07	18.55
SIMULATED 1972 HOT	2.59	38.03	358.4	3.02	20.89
COLD TRANSIENT GRAMS	24.71	202.86	1398.8	19.44	18.10
COLD STABILIZED GRAMS	10.71	152.01	1532.6	11.07	18.99
HOT TRANSIENT GRAMS	8.74	133.20	1155.1	11.62	23.35
HOT STABILIZED GRAMS	10.34	158.83	1473.5	9.10	19.53

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2987	1.98	13.85	2842	
		MASS	2.10	41.25	373.16	7.40	20.03
LOW CRUISE	30	CONC	2454	0.58	14.44	1685	
		MASS	1.18	8.51	291.80	2.98	28.83
IDLE	0	CONC	3995	3.40	13.00	125	
		MASS	0.20	6.54	42.08	0.06	0.00
COMPOSITE	25	CONC	3114	1.99		1051	
		MASS	0.80	15.47		2.23	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0304
CAR NUMBER: 0066

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PLYM	FURY	8	440	4	27056	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.58	75.42	501.0	2.42	14.05
SIMULATED 1972 COLD	5.43	86.80	514.9	2.38	13.32
SIMULATED 1972 HOT	3.94	66.82	490.5	2.45	14.65
COLD TRANSIENT GRAMS	22.95	340.06	1829.5	10.65	13.34
COLD STABILIZED GRAMS	17.79	310.98	2032.5	7.24	13.30
HOT TRANSIENT GRAMS	11.75	190.20	1646.1	11.16	16.40
HOT STABILIZED GRAMS	15.95	293.27	2046.8	7.48	13.40

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2778	2.58	12.32	1396	
		MASS	3.42	70.91	485.85	5.53	14.64
LOW CRUISE	33	CONC	2367	0.90	11.77	1453	
		MASS	2.50	26.51	402.23	4.74	19.71
IDLE	0	CONC	2784	3.42	8.49	64	
		MASS	0.70	19.43	78.45	0.06	0.00
COMPOSITE	27	CONC	2736	2.42		690	
		MASS	1.59	33.13		2.10	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC312
CAR NUMBER: 0066

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	PLYM	FURY	8	440	4	27071	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.56	61.45	524.0	4.56	14.02
SIMULATED 1972 COLD	5.28	75.25	537.9	4.29	13.24
SIMULATED 1972 HOT	4.02	51.11	513.9	4.77	14.67
COLD TRANSIENT GRAMS	22.44	344.79	1874.1	15.70	13.07
COLD STABILIZED GRAMS	17.15	219.62	2157.2	16.49	13.41
HOT TRANSIENT GRAMS	12.97	163.72	1656.7	15.27	16.29
HOT STABILIZED GRAMS	12.73	183.56	2174.3	17.23	13.70

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	3098	2.09	12.64	1976	
		MASS	5.48	65.49	475.55	6.61	14.95
LOW CRUISE	33	CONC	2645	0.70	11.69	2440	
		MASS	2.77	16.45	409.41	6.93	20.06
IDLE	0	CONC	2750	2.09	8.62	62	
		MASS	0.68	11.41	71.05	0.05	0.00
COMPOSITE	27	CONC	2986	1.83		1070	
		MASS	2.16	25.54		2.71	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC310
CAR NUMBER: CC67

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	ROHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	LTD	8	351	2	21739	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	6.27	144.04	478.5	1.67	12.28
SIMULATED 1972 COLD	7.49	160.65	488.6	1.62	11.64
SIMULATED 1972 HOT	5.36	131.48	471.6	1.71	12.81
COLD TRANSIENT GRAMS	34.24	631.80	1645.3	4.91	11.82
COLD STABILIZED GRAMS	21.90	573.38	2015.5	7.23	11.48
HOT TRANSIENT GRAMS	18.30	412.69	1521.4	5.61	14.59
HOT STABILIZED GRAMS	20.11	555.28	1999.4	6.38	11.68

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4412	6.08	11.11	751	
		MASS	4.77	121.58	428.72	2.81	14.03
LOW CRUISE	33	CONC	3752	2.75	13.19	1183	
		MASS	3.04	55.77	366.90	3.38	19.19
IDLE	0	CONC	5038	6.79	10.31	78	
		MASS	1.12	31.44	75.20	0.06	0.00
COMPOSITE	27	CONC	4456	5.54		901	
		MASS	2.27	56.74		1.25	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0314
CAR NUMBER: CC67

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	FORD	LTD	8	351	2	21761	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.71	130.32	543.5	1.49	11.62
SIMULATED 1972 COLD	7.55	148.49	546.2	1.40	11.06
SIMULATED 1972 HOT	4.33	116.61	539.9	1.55	12.09
COLD TRANSIENT GRAMS	39.34	616.90	1635.6	4.91	11.10
COLD STABILIZED GRAMS	17.29	496.81	2275.7	5.60	11.02
HOT TRANSIENT GRAMS	15.18	377.73	1773.6	6.04	13.46
HOT STABILIZED GRAMS	15.70	455.08	2251.7	5.60	11.22

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4099	5.36	11.28	547	
		MASS	4.36	106.95	444.95	2.06	14.21
LOW CRUISE	33	CONC	3091	1.94	13.56	636	
		MASS	2.94	39.19	393.01	2.27	19.20
IDLE	0	CONC	2778	2.94	13.05	98	
		MASS	0.63	11.77	87.26	0.06	0.00
COMPOSITE	27	CONC	3752	4.28		376	
		MASS	1.84	38.67		0.89	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC315
CAR NUMBER: CC68

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CAMER	8	307	2	25707	3500	11.2	Y	N	EM	Y	S-3

GRAMS PER MILE		HC	CO	CO2	NOX	MPG
1975 COMPOSITE		12.02	105.84	449.7	3.09	13.48
SIMULATED 1972 COLD		12.15	121.48	468.6	2.93	12.76
SIMULATED 1972 HOT		11.93	101.07	435.5	3.21	14.09
COLD TRANSIENT	GRAMS	37.96	447.20	1670.2	13.63	13.04
COLD STABILIZED	GRAMS	53.13	463.88	1844.2	8.37	12.51
HOT TRANSIENT	GRAMS	36.31	294.11	1422.0	15.69	16.26
HOT STABILIZED	GRAMS	54.16	468.31	1769.7	8.51	12.81

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3647	1.59	14.03	2904	
		MASS	4.07	35.60	425.97	8.87	18.00
LOW CRUISE	30	CONC	4690	1.81	12.43	1471	
		MASS	3.99	31.01	337.19	3.47	22.34
IDLE	0	CONC	22594	8.47	6.56	42	
		MASS	4.85	40.00	41.03	0.07	0.00
COMPOSITE	25	CONC	7206	2.79		967	
		MASS	4.57	37.91		2.65	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC318
CAR NUMBER: 0068

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1970	CHEV	CAMAR	8	307	2	25728	3500	11.2	Y	N	EM	Y	S-3

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	11.82	86.07	429.0	3.90	14.80
SIMULATED 1972 COLD	12.18	94.70	440.2	3.59	14.19
SIMULATED 1972 HOT	11.56	79.56	420.6	4.14	15.30
COLD TRANSIENT GRAMS	39.46	353.48	1587.8	15.32	14.33
COLD STABILIZED GRAMS	51.88	356.80	1714.1	11.59	14.06
HOT TRANSIENT GRAMS	34.79	239.88	1440.4	19.44	16.86
HOT STABILIZED GRAMS	54.00	379.57	1673.7	11.17	14.04

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	3647	1.17	14.47	3268	
		MASS	4.07	28.97	458.62	10.99	17.22
LOW CRUISE	30	CONC	4794	1.46	14.14	1899	
		MASS	3.86	26.38	340.88	4.27	22.57
IDLE	0	CONC	24054	8.47	6.92	38	
		MASS	4.74	34.63	26.57	0.04	0.00
COMPOSITE	25	CONC	7483	2.47		1152	
		MASS	4.48	32.30		3.25	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC316
CAR NUMBER: 0069

BEFORE

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	VOLK	CAMPM	4	97	1	48310	3000	10.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	5.97	84.93	323.4	3.02	18.72
SIMULATED 1972 COLD	8.21	91.70	327.5	3.02	17.90
SIMULATED 1972 HOT	4.29	79.82	320.4	3.01	19.39
COLD TRANSIENT GRAMS	41.51	369.79	1106.8	10.99	17.87
COLD STABILIZED GRAMS	20.08	317.99	1349.7	11.68	17.92
HOT TRANSIENT GRAMS	12.06	280.64	1053.0	10.92	21.22
HOT STABILIZED GRAMS	17.38	290.14	1405.5	12.16	17.89

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2315	1.11	14.14	3446	
		MASS	1.26	17.23	230.16	5.72	34.09
LOW CRUISE	30	CONC	2889	2.43	13.28	1106	
		MASS	1.18	21.60	183.59	1.51	40.25
IDLE	0	CONC	4099	4.29	10.82	74	
		MASS	0.49	10.45	39.69	0.05	0.00
COMPOSITE	25	CONC	2700	1.77		982	
		MASS	0.76	13.38		1.59	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC317
CAR NUMBER: 0069

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	VOLK	CAMPM	4	97	1	48332	3000	10.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.03	68.27	303.3	2.72	21.04
SIMULATED 1972 COLD	4.33	69.15	308.9	3.17	20.65
SIMULATED 1972 HOT	3.80	67.61	299.1	2.39	21.33
COLD TRANSIENT GRAMS	15.79	252.81	1097.4	13.15	21.05
COLD STABILIZED GRAMS	16.68	265.79	1219.1	10.60	20.29
HOT TRANSIENT GRAMS	11.85	241.28	1024.4	7.31	22.56
HOT STABILIZED GRAMS	16.87	256.55	1266.1	10.30	19.64

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	2360	1.07	14.03	3600	
		MASS	1.29	15.58	215.20	5.43	36.53
LOW CRUISE	30	CONC	2524	2.01	11.54	1048	
		MASS	1.44	20.55	165.63	1.41	43.99
IDLE	0	CONC	2124	2.26	12.03	49	
		MASS	0.46	7.92	32.09	0.04	0.00
COMPOSITE	25	CONC	2334	1.34		984	
		MASS	0.77	11.23		1.50	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0319
CAR NUMBER: 0070

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1971	DODG	COLT	4	97	2	17247	2250	8.8	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.69	42.74	291.0	1.82	24.08
SIMULATED 1972 COLD	4.49	46.08	313.1	1.65	22.28
SIMULATED 1972 HOT	3.09	40.22	274.4	1.94	25.64
COLD TRANSIENT GRAMS	20.26	161.39	1238.6	6.50	20.89
COLD STABILIZED GRAMS	13.42	184.21	1109.8	5.89	23.78
HOT TRANSIENT GRAMS	9.78	117.44	947.9	8.69	27.94
HOT STABILIZED GRAMS	13.07	201.79	1158.3	5.92	22.61

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1845	2.35	14.68	2479	
		MASS	1.26	11.86	329.36	4.64	25.30
LOW CRUISE	23	CONC	2593	2.61	14.00	327	
		MASS	1.51	28.86	233.11	0.59	31.44
IDLE	0	CONC	11330	7.39	10.50	60	
		MASS	0.68	9.75	20.36	0.03	0.00
COMPOSITE	20	CONC	3651	3.18		580	
		MASS	0.91	12.38		1.17	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC328
CAR NUMBER: 0070

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1971	DODG	COLT	4	97	2	17259	2250	8.8	N	Y	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	3.03	47.54	288.1	1.71	23.91
SIMULATED 1972 COLD	3.49	58.10	293.6	1.60	22.49
SIMULATED 1972 HOT	2.69	39.57	283.9	1.78	25.11
COLD TRANSIENT GRAMS	14.82	261.71	1025.0	6.55	21.92
COLD STABILIZED GRAMS	11.36	174.07	1177.0	5.48	23.07
HOT TRANSIENT GRAMS	8.83	122.73	952.4	7.88	27.71
HOT STABILIZED GRAMS	9.94	166.18	1148.4	5.57	23.79

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1967	3.23	15.30	2479	
		MASS	1.56	14.02	327.09	5.43	25.19
LOW CRUISE	23	CONC	2506	2.53	14.29	386	
		MASS	1.42	25.94	227.13	0.51	32.69
IDLE	0	CONC	5177	5.69	11.92	53	
		MASS	0.35	7.70	26.74	0.04	0.00
COMPOSITE	20	CONC	2608	3.44		593	
		MASS	0.77	11.29		1.35	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC320
CAR NUMBER: CC71

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	IMPAL	8	307	2	63396	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	15.56	194.24	434.8	1.30	11.28
SIMULATED 1972 COLD	21.02	269.44	428.4	0.73	9.70
SIMULATED 1972 HOT	11.45	137.51	439.6	1.72	12.87
COLD TRANSIENT GRAMS	100.08	1396.80	1480.2	2.42	8.14
COLD STABILIZED GRAMS	57.54	624.02	1732.5	3.07	11.84
HOT TRANSIENT GRAMS	28.34	407.29	1564.8	9.83	14.17
HOT STABILIZED GRAMS	30.02	439.85	1967.9	11.74	12.45

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4934	5.26	12.19	1309	
		MASS	6.15	104.50	472.68	5.26	13.57
LOW CRUISE	33	CONC	5490	4.57	12.51	1010	
		MASS	5.09	84.15	372.51	2.96	17.10
IDLE	0	CONC	7680	5.50	11.54	151	
		MASS	1.23	19.37	56.22	0.08	0.00
COMPOSITE	27	CONC	5492	4.97		589	
		MASS	2.90	47.86		1.75	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC327
CAR NUMBER: 0071

AFTER

DYNAMOMETER EMISSION RESULTS USING 1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	IMPAL	8	307	2	63417	4000	12.0	Y	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	12.40	197.00	459.6	1.54	11.02
SIMULATED 1972 COLD	16.68	252.64	457.6	1.09	9.81
SIMULATED 1972 HOT	9.18	155.02	461.1	1.88	12.14
COLD TRANSIENT GRAMS	80.93	1206.09	1539.9	3.04	8.81
COLD STABILIZED GRAMS	44.15	688.71	1891.9	5.14	11.01
HOT TRANSIENT GRAMS	24.69	473.94	1566.3	6.93	13.61
HOT STABILIZED GRAMS	26.18	405.86	2019.5	10.68	12.51

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4794	5.41	12.19	1212	
		MASS	6.03	106.26	461.92	4.80	13.74
LOW CRUISE	33	CONC	4934	4.57	12.51	942	
		MASS	5.01	83.88	371.94	2.93	17.14
IDLE	0	CONC	6081	3.02	13.31	438	
		MASS	1.22	13.11	79.16	0.24	0.00
COMPOSITE	27	CONC	5043	4.61		678	
		MASS	2.65	44.26		1.74	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0321
CAR NUMBER: 0072

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	CHEVE	8	396	4	40423	3500	11.2	Y	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	30.14	81.72	491.7	3.69	12.44
SIMULATED 1972 COLD	34.52	97.64	515.3	3.70	11.45
SIMULATED 1972 HOT	26.84	69.71	473.9	3.68	13.32
COLD TRANSIENT GRAMS	147.48	396.12	1906.3	17.51	10.85
COLD STABILIZED GRAMS	111.40	336.15	1958.1	10.29	12.07
HOT TRANSIENT GRAMS	89.92	186.65	1595.9	17.36	14.95
HOT STABILIZED GRAMS	109.27	339.02	1868.1	8.98	12.48

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	13208	0.64	10.65	2750	
		MASS	23.54	21.76	507.27	12.55	14.45
LOW CRUISE	30	CONC	13903	1.07	9.65	1097	
		MASS	19.91	39.85	401.00	4.21	16.91
IDLE	0	CONC	17588	4.96	6.78	48	
		MASS	4.82	24.79	53.84	0.09	0.00
COMPOSITE	25	CONC	14079	1.44		838	
		MASS	11.20	29.68		3.61	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC326
CAR NUMBER: CC72

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1969	CHEV	CHEVE	8	396	4	40445	3500	11.2	Y	N	AI	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.28	69.94	562.5	2.57	12.98
SIMULATED 1972 COLD	5.75	89.71	583.3	2.47	11.99
SIMULATED 1972 HOT	3.17	55.02	546.8	2.64	13.84
COLD TRANSIENT GRAMS	29.48	400.99	2081.1	11.77	11.59
COLD STABILIZED GRAMS	13.64	271.91	2293.8	6.79	12.40
HOT TRANSIENT GRAMS	10.18	140.77	1807.3	12.99	15.77
HOT STABILIZED GRAMS	13.40	260.24	2164.1	6.38	13.11

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	45	CONC	1590	0.86	12.78	1845	
		MASS	1.25	27.73	535.10	7.96	15.29
LOW CRUISE	30	CONC	1132	1.39	11.74	583	
		MASS	1.34	35.68	422.45	1.99	18.45
IDLE	0	CONC	3132	3.10	10.24	40	
		MASS	0.53	15.69	83.66	0.07	0.00
COMPOSITE	25	CONC	1793	1.28		523	
		MASS	0.80	20.91		2.20	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0324
CAR NUMBER: 0073

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RCHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	BELAI	8	307	2	72571	4000	12.0	N	N	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	7.92	67.89	479.1	5.26	14.58
SIMULATED 1972 COLD	8.72	75.80	494.5	5.17	13.89
SIMULATED 1972 HOT	7.32	61.93	467.6	5.34	15.14
COLD TRANSIENT GRAMS	34.86	340.05	1774.4	19.62	13.44
COLD STABILIZED GRAMS	30.51	228.43	1934.2	19.14	14.35
HOT TRANSIENT GRAMS	24.37	236.04	1572.7	20.88	16.09
HOT STABILIZED GRAMS	27.96	208.22	1954.4	21.20	14.47

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	4586	1.55	14.44	3012	
		MASS	5.44	46.96	504.46	11.01	14.95
LOW CRUISE	33	CONC	4377	1.06	14.20	2649	
		MASS	4.27	28.18	392.75	7.55	19.77
IDLE	0	CONC	10774	5.02	13.85	69	
		MASS	0.68	10.73	34.61	0.06	0.00
COMPOSITE	27	CONC	5690	2.05		1325	
		MASS	2.28	21.74		3.82	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC330
CAR NUMBER: CC73

AFTER

DYNAMCMETER EMISSICN RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	CODMP	INRT	REHP	A/C	EVP	EXH	PCV	TRANS
1968	CHEV	BELAI	8	307	2	72595	4CCC	12.C	N	N	EM	Y	A

GRAMS PER MILE	HC	CC	CC2	NCX	MPG
1975 COMPOSITE	6.27	59.63	5C4.2	4.28	14.42
SIMULATED 1972 COLD	6.84	68.89	524.8	4.32	13.6C
SIMULATED 1972 HCT	5.84	52.65	488.7	4.26	15.1C
COLD TRANSIENT GRAMS	29.1C	344.05	1875.4	16.78	12.94
COLD STABILIZED GRAMS	22.18	172.63	2C56.4	15.61	14.3C
HOT TRANSIENT GRAMS	21.59	222.25	16C9.1	16.33	16.C4
HOT STABILIZED GRAMS	21.C3	12C.55	2CCC.2	16.26	15.2C

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ANALYSIS CF KEY-MODE EMISSICNS

SPEED			HC	CC	CC2	NCX	MPG
HIGH CRUISE	49	CCNC	4829	2.2C	14.38	2417	
		MASS	5.59	52.97	493.37	8.65	14.99
LCW CRUISE	33	CCNC	4655	2.13	14.CC	2193	
		MASS	4.42	26.59	38C.2C	5.94	2C.43
IDLE	C	CONC	4725	C.17	13.11	279	
		MASS	1.33	4.68	97.27	C.7C	C.CC
CCMPCSITE	27	CCNC	4792	1.71		1179	
		MASS	2.75	19.21		3.4C	

AUTOMOTIVE TESTING LABORATORIES, INC.
1990C E. COLFAX, AURORA, COLO. 8CC11

TEST NUMBER: EC325
CAR NUMBER: CC74

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	VOLK	SEDAN	4	97	1	33994	2000	8.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.42	73.32	299.1	2.81	20.79
SIMULATED 1972 COLD	4.79	78.57	303.5	2.91	20.14
SIMULATED 1972 HOT	4.15	69.35	295.8	2.75	21.31
COLD TRANSIENT GRAMS	17.63	298.06	1058.0	12.39	20.55
COLD STABILIZED GRAMS	18.27	291.22	1218.0	9.42	19.78
HOT TRANSIENT GRAMS	12.85	228.93	1000.5	11.17	23.20
HOT STABILIZED GRAMS	18.72	280.16	1132.1	8.16	21.01

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	2089	1.70	14.71	3678	
		MASS	1.59	28.93	346.19	8.73	22.45
LOW CRUISE	23	CONC	2353	2.46	14.14	1473	
		MASS	1.35	23.46	210.26	2.29	35.42
IDLE	0	CONC	7819	7.07	10.74	21	
		MASS	0.48	9.60	23.32	0.04	0.00
COMPOSITE	20	CONC	3160	2.67		1103	
		MASS	0.85	15.98		2.40	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC329
CAR NUMBER: 0074

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1969	VOLK	SEDAN	4	97	1	34015	2000	8.3	N	N	EM	Y	S-4

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.29	66.76	297.7	2.02	21.40
SIMULATED 1972 COLD	4.57	71.22	303.8	2.20	20.70
SIMULATED 1972 HOT	4.08	63.40	293.1	1.87	21.95
COLD TRANSIENT GRAMS	16.71	274.01	1094.2	10.17	20.61
COLD STABILIZED GRAMS	17.57	260.16	1184.4	6.36	20.79
HOT TRANSIENT GRAMS	13.06	215.32	1014.0	7.70	23.32
HOT STABILIZED GRAMS	17.84	259.24	1153.8	5.54	21.20

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	37	CONC	1950	1.81	14.59	2711	
		MASS	1.44	28.32	328.29	8.12	23.60
LOW CRUISE	23	CONC	1741	2.07	14.29	1183	
		MASS	1.33	20.52	217.59	1.53	35.05
IDLE	0	CONC	3612	3.23	13.28	77	
		MASS	0.37	4.51	33.57	0.04	0.00
COMPOSITE	20	CONC	2230	2.00		667	
		MASS	0.74	12.29		2.13	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: E0338
CAR NUMBER: 0075

BEFORE

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	COMPR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	BUIC	LESAB	8	350	4	10125	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.60	103.57	594.7	2.46	11.54
SIMULATED 1972 COLD	5.03	106.31	612.9	2.47	11.19
SIMULATED 1972 HOT	4.27	101.50	580.9	2.45	11.81
COLD TRANSIENT GRAMS	19.64	356.46	2145.5	11.67	11.74
COLD STABILIZED GRAMS	18.09	440.89	2451.5	6.84	10.71
HOT TRANSIENT GRAMS	13.96	320.36	1905.5	11.51	13.25
HOT STABILIZED GRAMS	18.03	416.77	2476.6	6.08	10.75

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2384	1.00	15.14	2169	
		MASS	2.92	33.70	551.16	8.82	14.52
LOW CRUISE	33	CONC	3473	2.68	13.56	933	
		MASS	3.40	63.11	414.06	2.92	17.00
IDLE	0	CONC	3202	3.15	13.19	125	
		MASS	0.80	16.96	98.48	0.10	0.00
COMPOSITE	27	CONC	2649	1.53		717	
		MASS	1.60	26.24		2.57	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

TEST NUMBER: EC342
CAR NUMBER: 0075

AFTER

DYNAMOMETER EMISSION RESULTS USING
1975 FEDERAL TEST PROCEDURES

YEAR	MAKE	MODEL	CYL	CID	BBL	ODOMR	INRT	RDHP	A/C	EVP	EXH	PCV	TRANS
1972	BUIC	LESAB	8	350	4	10144	4500	12.7	Y	Y	EM	Y	A

GRAMS PER MILE	HC	CO	CO2	NOX	MPG
1975 COMPOSITE	4.35	83.09	625.9	2.71	11.56
SIMULATED 1972 COLD	4.68	90.96	646.6	2.80	11.07
SIMULATED 1972 HOT	4.11	77.16	610.2	2.64	11.96
COLD TRANSIENT GRAMS	17.55	311.93	2259.4	13.50	11.59
COLD STABILIZED GRAMS	17.56	370.27	2590.4	7.49	10.62
HOT TRANSIENT GRAMS	13.24	208.42	1966.1	12.28	13.80
HOT STABILIZED GRAMS	15.65	294.81	2644.4	7.29	10.66

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ANALYSIS OF KEY-MODE EMISSIONS

	SPEED		HC	CO	CO2	NOX	MPG
HIGH CRUISE	49	CONC	2903	1.32	14.74	2015	
		MASS	3.35	41.82	547.47	7.51	14.26
LOW CRUISE	33	CONC	3766	2.49	13.76	902	
		MASS	3.46	52.30	399.63	2.63	18.07
IDLE	0	CONC	2778	1.49	14.14	164	
		MASS	0.71	8.25	106.66	0.14	0.00
COMPOSITE	27	CONC	2974	1.41		657	
		MASS	1.67	21.52		2.24	

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX, AURORA, COLO. 80011

APPENDIX E

PREDICTED 1955 THROUGH 1972 MODEL PASSENGER CARS IN COLORADO

Predicted passenger car registration data is presented on the following pages. Predictions are based on methods described elsewhere in the study. It should be noted that data tends to be less reliable for each subsequent year.

It is possible to predict data for model years 1973, 1974 and 1975 using registration data presented in this section. However, predicted data for new model years would probably be unreliable. It can be seen from the data presented, that there is a great deal of scatter in registration data by make and model year, and a good fit would be difficult to establish.

PASSENGER CARS IN OPERATION AS OF JULY 1, 1972 (PREDICTED)

Make	Model Year																	
	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	2099	4239	2145	3092	2343	2528	3036	3374	3633	3900	1149	1822	2002	1042	372	132	10	2
BUICK	1934	3402	4204	4394	5529	4694	4646	4555	4227	3644	3132	2011	1168	623	15	23	73	8
CADIL	907	1498	1760	1567	2063	1908	1715	1629	1559	1486	1444	1049	1080	671	353	300	22	2
CHEVR	10709	19137	16475	18535	21594	17305	20407	20576	20438	15552	4523	8538	8205	4855	3114	2149	2412	2322
CHRYS	942	1840	1459	2121	2983	2596	3017	2120	1545	1332	898	596	341	205	106	2	11	0
DODGE	3295	5575	4832	5855	5940	4211	5406	5027	4091	2732	673	1221	1085	484	5	4	9	0
FORD	14147	24480	21935	18569	15612	18742	21476	21447	14681	13532	4664	7721	5144	3428	350	1070	1016	737
IMPER	91	128	179	229	239	293	184	212	265	158	125	87	75	50	23	0	0	0
LINCO	481	720	581	765	499	564	565	425	386	295	313	260	126	30	13	16	17	1
MERCU	2540	4330	3323	4018	4117	5184	3568	3383	2792	2308	2516	1960	1152	89	151	122	160	114
OLDSM	2311	4194	4429	4882	5012	5486	5468	4918	4668	3494	3376	1755	1178	803	19	106	150	155
PLYMO	4789	8098	6279	6969	7281	6039	6676	6649	4325	3470	665	1659	1285	610	1	3	18	0
PONTI	2450	4389	4945	6801	9057	8070	7269	6963	6178	4700	3538	1397	1957	971	91	144	138	154
IMPOR	13678	32909	16994	18334	17592	13419	10423	8175	7229	6353	4752	4674	4497	3887	2371	1086	507	201

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1973 (PREDICTED)

Make	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
	Model Year																	
AMMOT	4239	4389	2218	3193	2417	2606	2920	3146	3433	3448	160	1215	1332	554	209	64	2	0
BUICK	3402	3530	4356	4548	5716	4676	4599	4449	4025	3316	2267	1774	872	350	0	1	8	0
CADIL	1498	1569	1840	1635	2150	1984	1702	1607	1523	1484	1364	948	993	499	213	181	1	0
CHEVR	19137	19651	16907	19009	21476	17080	19863	19567	19561	10603	537	6471	6119	3072	1852	615	1181	1212
CHRYS	1840	1878	1489	2163	3040	2591	2998	2086	1489	1233	328	486	245	124	56	0	0	0
DODGE	5575	5767	4992	6043	5936	4198	5357	4908	3867	2182	139	918	713	310	0	0	0	0
FORD	24480	25200	22561	19085	15457	18331	20569	19870	12943	11633	1001	6156	3461	2001	63	414	502	362
IMPER	128	132	184	236	246	301	180	202	244	137	99	55	44	30	8	0	0	0
LINCO	720	754	608	798	520	556	549	404	357	263	264	254	104	10	3	3	4	0
MERCU	4330	4403	3378	4083	4184	5037	3389	3108	2450	1904	1894	1644	802	12	77	50	79	56
OLDSM	4194	4353	4591	5054	6113	5447	5366	4710	4266	2059	2582	1072	522	402	0	25	45	45
PLYMO	8098	8312	6441	7144	7269	6008	6581	6428	4026	3017	89	1246	794	330	0	0	1	0
PONTI	4389	4536	5106	7015	9334	7959	7074	6630	5692	4409	2945	702	1404	562	16	33	39	51
IMPOR	32909	34791	17913	19274	18450	14043	10313	8037	7047	6124	4492	4363	4107	3459	2046	904	405	117

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1974 (PREDICTED)

Make	Model Year '72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	4389	4538	2291	3295	2492	2506	2722	2799	3157	2885	2	697	783	240	104	26	0	0
BUICK	3530	3658	4509	4702	5695	4629	4493	4236	3663	2798	1139	1505	602	168	0	0	0	0
CADIL	1569	1641	1920	1703	2236	1969	1678	1569	1467	1483	1256	828	895	343	110	98	0	0
CHEVR	19651	20166	17338	18904	21197	16625	18889	17942	18424	5328	7	4512	4229	1728	981	92	471	543
CHRYS	1878	1916	1518	2205	3034	2575	2950	2010	1378	1062	22	375	156	64	25	0	0	0
DODGE	5767	5958	5153	6038	5918	4160	5230	4638	3427	1066	6	635	421	179	0	0	0	0
FORD	25200	25920	23188	18895	15118	17557	19057	17518	10634	9001	45	4638	2100	1023	6	126	218	159
IMPER	132	136	190	243	253	295	172	186	212	109	70	26	20	15	2	0	0	0
LINCO	754	788	634	831	512	540	523	374	317	221	208	248	84	2	0	0	1	0
MERCU	4403	4476	3433	4149	4064	4783	3114	2727	2022	1451	1145	1323	508	0	35	17	35	25
OLDSM	4353	4513	4753	5227	6070	5345	5138	4304	3589	437	1601	493	142	160	0	4	10	10
PLYM	8312	8525	6602	7133	7231	5923	6363	5984	3500	2336	1	866	424	156	0	0	0	0
PONTI	4536	4683	5266	7229	9206	7745	6735	6109	5001	4076	2301	231	902	279	1	4	7	13
IMPOR	34791	36673	18832	20215	19309	13895	10139	7834	6792	5818	4217	3985	3655	2985	1703	721	308	56

PASSENGER CARS IN OPERATION IN COLORADO AS OF JULY 1, 1975 (PREDICTED)

	Model Year																	
Make	'72	'71	'70	'69	'68	'67	'66	'65	'64	'63	'62	'61	'60	'59	'58	'57	'56	'55
AMMOT	4538	4687	2364	3397	2397	2337	2422	2327	2800	2249	0	332	397	82	46	9	0	0
BUICK	3658	3787	4662	4684	5637	4522	4278	3855	3090	2092	288	1218	377	67	0	0	0	0
CADIL	1641	1712	2000	1771	2218	1941	1639	1512	1386	1482	1117	695	789	213	47	46	0	0
CHEVR	20166	20681	17243	18659	20633	15810	17321	15586	17019	1649	0	2848	2677	848	455	6	147	204
CHRYS	1916	1954	1548	2201	3015	2534	2843	1861	1186	807	0	271	87	27	9	0	0	0
DODGE	5958	6149	5149	6021	5865	4062	4943	4111	2699	136	0	399	219	92	0	0	0	0
FORD	25920	26639	22957	18480	14479	16265	16801	14392	7930	5945	0	3277	1130	448	0	29	81	61
IMPER	136	140	195	249	247	281	158	162	168	77	41	8	7	7	0	0	0	0
LINCO	788	822	660	819	497	514	484	333	268	174	150	243	67	0	0	0	0	0
MERCU	4476	4549	3488	4031	3860	4395	2732	2250	1540	999	490	1017	288	0	13	5	14	10
OLDSM	4513	4672	4915	5190	5957	5118	4695	3621	2632	7	711	152	19	48	0	0	1	1
PLYMO	8525	8739	6592	7096	7129	5727	5924	5203	2710	1499	0	549	190	63	0	0	0	0
PONTI	4683	4830	5427	7130	8958	7375	6205	5368	4115	3707	1665	41	507	116	0	0	1	2
IMPOR	36673	38554	19751	21156	19104	13661	9883	7551	6453	5431	3932	3546	3154	2484	1360	549	222	22

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	AMMOT	GREML	2750	232	A	1	0	229	463	480	496
72	AMMOT	GREML	2750	232	S3	1	0	258	522	541	559
72	AMMOT	HORNE	3000	232	A	1	0	289	585	606	626
72	AMMOT	HORNE	3000	232	S3	1	0	125	254	263	272
72	AMMOT	HORNE	3500	360	A	2	0	25	51	53	55
72	AMMOT	HORNE	3500	360	S3	2	0	11	22	23	23
72	AMMOT	MATAD	3500	232	A	1	0	117	237	246	254
72	AMMOT	MATAD	3500	232	S3	1	0	6	13	14	14
72	AMMOT	MATAD	4000	304	A	1	0	250	505	523	541
72	AMMOT	MATAD	4000	304	S3	1	0	14	29	30	31
72	AMMOT	AMBAS	3500	258	A	1	0	5	10	10	11
72	AMMOT	AMBAS	4000	304	A	2	0	368	744	771	797
72	AMMOT	JAVEL	3000	232	A	1	0	26	52	54	56
72	AMMOT	JAVEL	3000	232	S3	1	0	3	6	6	6
72	AMMOT	JAVEL	3000	232	S4	1	0	1	3	3	3
72	AMMOT	JAVEL	3500	360	A	2	0	150	304	314	325
72	AMMOT	JAVEL	3500	360	S3	2	0	17	36	37	38
72	AMMOT	JAVEL	3500	360	S4	2	0	9	18	19	19
72	BUICK	SKYLA	3500	350	A	2	0	550	969	1005	1042
72	BUICK	SKYLA	3500	350	S4	2	0	5	9	10	10
72	BUICK	LESAB	4500	350	A	2	0	479	843	875	906
72	BUICK	CENTU	4500	455	A	4	0	200	352	366	379
72	BUICK	ELECT	5000	455	A	4	0	396	696	723	749
72	BUICK	RIVIE	4500	455	A	4	0	116	204	212	220
72	BUICK	STAWA	0	0	0	0	0	106	187	194	201
72	CADIL	CALAI	5000	472	A	4	0	65	108	113	118
72	CADIL	DEVIL	5000	472	A	4	0	647	1069	1120	1171
72	CADIL	FLEET	5000	472	A	4	0	69	113	119	124
72	CADIL	ELDOR	5000	500	A	4	0	124	206	216	225
72	CHEVR	VEGA	2500	140	A	1	0	691	1236	1269	1302
72	CHEVR	VEGA	2500	140	S3	1	0	382	682	701	719
72	CHEVR	VEGA	2500	140	S4	1	0	531	949	975	1000
72	CHEVR	NOVA	3500	250	A	1	0	507	906	930	955
72	CHEVR	NOVA	3500	250	S3	1	0	101	180	185	190
72	CHEVR	NOVA	3500	250	S4	1	0	12	22	22	23
72	CHEVR	NOVA	3500	307	A	2	0	534	954	980	1006
72	CHEVR	NOVA	3500	307	S3	2	0	106	190	195	200
72	CHEVR	NOVA	3500	307	S4	2	0	13	23	24	24
72	CHEVR	CHEVE	3500	250	A	1	0	120	214	220	226
72	CHEVR	CHEVE	3500	250	S3	1	0	3	7	7	7
72	CHEVR	CHEVE	3500	250	S4	1	0	4	7	7	7
72	CHEVR	CHEVE	3500	307	A	2	0	1701	3040	3122	3204
72	CHEVR	CHEVE	3500	307	S3	2	0	56	100	103	106
72	CHEVR	CHEVE	3500	307	S4	2	0	58	103	106	109
72	CHEVR	CHEVR	4000	250	A	1	0	59	106	109	112

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	CHEVR	CHEVR	4000	250	S3	1	0	0	0	0	0
72	CHEVR	CHEVR	4000	350	A	2	0	1992	3561	3656	3752
72	CHEVR	CHEVR	4000	400	S3	2	0	15	27	28	29
72	CHEVR	CAMER	3500	250	A	1	0	53	94	97	99
72	CHEVR	CAMER	3500	250	S3	1	0	7	13	13	14
72	CHEVR	CAMER	3500	250	S4	1	0	6	11	11	11
72	CHEVR	CAMER	3500	307	A	2	0	488	873	896	920
72	CHEVR	CAMER	3500	307	S3	2	0	69	124	127	130
72	CHEVR	CAMER	3500	307	S4	2	0	57	102	105	107
72	CHEVR	CORVE	3500	350	A	4	0	59	106	108	111
72	CHEVR	CORVE	3500	350	S4	4	0	69	124	127	130
72	CHEVR	STAWA	0	0	C	0	0	1051	1879	1929	1960
72	CHRYS	NEWPO	4500	360	A	2	0	540	1055	1077	1098
72	CHRYS	NEWPO	4500	360	S3	2	0	7	13	14	14
72	CHRYS	300	4500	400	A	4	0	125	244	249	255
72	CHRYS	NEWYO	4500	400	A	4	0	180	352	359	366
72	CHRYS	STAWA	0	0	C	0	0	88	173	176	180
72	DODGE	DART	3000	198	A	1	0	625	1058	1094	1131
72	DODGE	DART	3000	198	S3	1	0	54	91	94	98
72	DODGE	DART	3000	198	S4	1	0	6	11	12	12
72	DODGE	DART	3500	318	A	2	0	285	482	498	515
72	DODGE	DART	3500	318	S3	4	0	24	41	43	44
72	DODGE	DART	3500	318	S4	4	0	3	5	5	5
72	DODGE	CHALL	3500	198	A	1	0	5	9	10	10
72	DODGE	CHALL	3500	198	S3	1	0	0	0	0	0
72	DODGE	CHALL	3500	198	S4	1	0	0	0	0	0
72	DODGE	CHALL	3500	225	A	1	0	7	12	13	13
72	DODGE	CHALL	3500	225	S3	1	0	0	0	0	0
72	DODGE	CHALL	3500	225	S4	1	0	0	0	0	0
72	DODGE	CHALL	3500	318	A	2	0	179	303	313	324
72	DODGE	CHALL	3500	318	S3	2	0	11	20	20	21
72	DODGE	CHALL	3500	318	S4	2	0	10	18	18	19
72	DODGE	CORON	3500	225	A	1	0	42	72	74	77
72	DODGE	CORON	3500	225	S3	1	0	1	2	2	2
72	DODGE	CORON	3500	225	S4	1	0	0	0	0	0
72	DODGE	CORON	3500	318	A	2	0	727	1230	1272	1315
72	DODGE	CORON	3500	318	S3	2	0	25	42	43	45
72	DODGE	CORON	3500	318	S4	2	0	9	15	15	16
72	DODGE	CORON	3500	440	A	4	0	37	64	66	68
72	DODGE	CORON	3500	440	S3	4	0	1	2	2	2
72	DODGE	CORON	3500	440	S4	4	0	0	0	0	0
72	DODGE	CHARG	3500	225	A	1	0	6	11	12	12
72	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0
72	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
72	DODGE	CHARG	3500	318	A	2	0	118	195	206	213

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	DODGE	CHARG	3500	318	S3	2	0	4	6	7	7
72	DODGE	CHARG	3500	318	S4	2	0	1	2	2	2
72	DODGE	CHARG	3500	440	A	4	0	13	22	22	23
72	DODGE	CHARG	3500	440	S3	4	0	0	0	0	0
72	DODGE	CHARG	3500	440	S4	4	0	0	0	0	0
72	DODGE	POLAR	4000	225	A	1	0	1	2	2	2
72	DODGE	POLAR	4000	225	S3	1	0	0	0	0	0
72	DODGE	POLAR	4000	318	A	2	0	425	720	745	769
72	DODGE	POLAR	4000	318	S3	2	0	1	2	2	2
72	DODGE	MONAC	4500	360	A	2	0	148	250	259	267
72	DODGE	MONAC	4500	440	A	4	0	148	250	259	267
72	DODGE	STAWA	0	0	0	0	0	370	626	647	669
72	FORD	PINTO	2250	98	A	1	0	957	1656	1705	1754
72	FORD	PINTO	2250	98	S4	1	0	1101	1906	1962	2018
72	FORD	MAVER	3000	170	A	1	0	810	1403	1444	1485
72	FORD	MAVER	3000	170	S3	1	0	227	393	405	416
72	FORD	MAVER	3000	302	A	2	0	102	176	182	187
72	FORD	MAVER	3000	302	S3	2	0	28	49	51	52
72	FORD	TORIN	3500	250	A	1	0	222	384	395	407
72	FORD	TORIN	3500	250	S3	1	0	9	15	16	16
72	FORD	TORIN	3500	250	S4	1	0	2	4	4	4
72	FORD	TORIN	3500	302	A	2	0	1873	3241	3337	3432
72	FORD	TORIN	3500	302	S3	2	0	76	133	136	140
72	FORD	TORIN	3500	302	S4	2	0	21	37	38	39
72	FORD	TORIN	3500	351	A	4	0	402	695	716	736
72	FORD	TORIN	3500	351	S3	4	0	16	28	29	30
72	FORD	TORIN	3500	351	S4	4	0	4	8	8	8
72	FORD	FORD	4000	240	A	1	0	32	56	58	59
72	FORD	FORD	4000	240	S3	1	0	0	0	0	0
72	FORD	FORD	4000	302	A	2	0	3247	5620	5785	5950
72	FORD	FORD	4000	400	A	2	0	3280	5677	5844	6010
72	FORD	MUSTA	3000	250	A	1	0	106	183	188	194
72	FORD	MUSTA	3000	250	S3	1	0	12	22	22	23
72	FORD	MUSTA	3000	250	S4	1	0	6	10	11	11
72	FORD	MUSTA	3000	302	A	2	0	976	1689	1739	1788
72	FORD	MUSTA	3000	302	S3	2	0	117	202	208	214
72	FORD	MUSTA	3000	302	S4	2	0	57	99	102	105
72	FORD	TBIRD	4500	429	A	4	0	290	503	518	532
72	FORD	STAWA	0	0	0	0	0	232	402	414	426
72	IMPER	LEBAR	5000	440	A	4	0	90	128	132	136
72	LINCO	CONTI	5000	460	A	4	0	270	405	424	443
72	LINCO	MARK4	5000	460	A	4	0	210	314	329	344
72	MERCU	MONTE	3500	250	A	1	0	44	75	76	78
72	MERCU	MONTE	3500	302	A	2	0	476	812	826	840
72	MERCU	MONTR	4500	351	A	2	0	105	179	182	186

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	MERCU	MARCU	4500	429	A	4	0	131	224	228	232
72	MERCU	COUGA	3500	351	A	2	0	573	978	994	1011
72	MERCU	COMET	3000	170	A	1	0	366	625	635	646
72	MERCU	COMET	3000	170	S3	1	0	102	175	178	181
72	MERCU	COMET	3000	302	A	2	0	225	384	391	397
72	MERCU	COMET	3000	302	S3	2	0	63	107	109	111
72	MERCU	STAWA	0	0	0	0	0	448	764	777	790
72	OLDSM	F-85	3500	350	A	2	0	1131	2052	2130	2208
72	OLDSM	F-85	3500	350	S3	2	0	9	16	17	17
72	OLDSM	F-85	3500	350	S4	2	0	206	375	389	404
72	OLDSM	DELTA	4500	350	A	2	0	465	844	876	908
72	OLDSM	DELTA	4500	455	A	4	0	372	676	702	728
72	OLDSM	98	4500	455	A	4	0	376	682	708	734
72	OLDSM	TORON	5000	455	A	4	0	130	237	246	255
72	OLDSM	STAWA	0	0	0	0	0	175	318	330	342
72	PLYMO	VALIA	3000	198	A	1	0	989	1672	1717	1761
72	PLYMO	VALIA	3000	198	S3	1	0	194	328	336	345
72	PLYMO	VALIA	3000	198	S4	1	0	13	22	22	23
72	PLYMO	VALIA	3500	340	A	2	0	345	584	600	615
72	PLYMO	VALIA	3500	340	S3	2	0	67	114	117	120
72	PLYMO	VALIA	3500	340	S4	2	0	4	7	7	8
72	PLYMO	SATEL	3500	225	A	1	0	52	89	91	94
72	PLYMO	SATEL	3500	225	S3	1	0	2	4	4	4
72	PLYMO	SATEL	3500	225	S4	1	0	10	17	17	18
72	PLYMO	SATEL	3500	318	A	2	0	616	1042	1070	1098
72	PLYMO	SATEL	3500	400	S3	2	0	11	19	19	20
72	PLYMO	SATEL	3500	400	S4	2	0	7	13	13	13
72	PLYMO	FURY	4000	225	A	1	0	77	130	133	137
72	PLYMO	FURY	4000	318	S3	1	0	17	30	30	31
72	PLYMO	FURY	4000	383	A	2	0	1464	2476	2541	2607
72	PLYMO	FURY	4000	383	S3	2	0	339	573	588	603
72	PLYMO	BARRA	3500	198	A	1	0	18	31	32	33
72	PLYMO	BARRA	3500	198	S3	1	0	2	3	3	3
72	PLYMO	BARRA	3500	318	S4	1	0	2	4	5	5
72	PLYMO	BARRA	3500	340	A	2	0	51	87	90	92
72	PLYMO	BARRA	3500	340	S3	2	0	5	9	9	9
72	PLYMO	BARRA	3500	340	S4	2	0	7	13	13	14
72	PLYMO	BARRA	4000	383	A	4	0	33	55	57	58
72	PLYMO	BARRA	4000	340	S3	4	0	3	5	6	6
72	PLYMO	BARRA	4000	340	S4	4	0	5	8	8	8
72	PLYMO	STAWA	0	0	0	0	0	423	715	734	753
72	PONTI	LEMAN	3500	250	A	1	0	26	47	48	50
72	PONTI	LEMAN	3500	250	S3	1	0	0	0	0	0
72	PONTI	LEMAN	4000	400	A	2	0	520	932	963	994
72	PONTI	LEMAN	4000	400	S3	2	0	7	13	13	14

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
72	PONTI	CATAL	4500	350	A	2	0	462	828	855	883
72	PONTI	CATAL	4500	400	A	4	0	15	27	28	29
72	PONTI	BONNE	4500	455	A	4	0	280	502	519	536
72	PONTI	GRANV	4500	455	A	4	0	117	209	216	223
72	PONTI	GRANP	4000	400	A	4	0	249	447	462	477
72	PONTI	FIREB	3500	250	A	1	0	11	20	20	21
72	PONTI	FIREB	3500	250	S3	1	0	0	1	1	1
72	PONTI	FIREB	3500	350	S4	1	0	0	1	1	1
72	PONTI	FIREB	3500	400	A	2	0	189	338	350	361
72	PONTI	FIREB	3500	400	S3	2	0	13	23	24	25
72	PONTI	FIREB	3500	400	S4	2	0	12	23	23	24
72	PONTI	STAWA	0	0	0	0	0	252	452	467	483
72	IMPOR	VOLKS	2250	0	0	0	0	6323	15213	16083	16953
72	IMPOR	TOYOT	2500	0	0	0	0	2054	4942	5225	5508
72	IMPOR	DATSU	2250	0	0	0	0	1117	2688	2842	2996
72	IMPOR	OPEL	2250	0	0	0	0	924	2224	2351	2479
72	IMPOR	VOLVO	3000	0	0	0	0	496	1194	1262	1331
72	IMPOR	OTHER	2250	0	0	0	0	2761	6644	7024	7404

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	AMMOT	GREML	2750	232	A	1	229	463	480	496	512
71	AMMOT	GREML	2750	232	S3	1	258	522	541	559	578
71	AMMOT	HORNE	3000	232	A	1	289	585	606	626	647
71	AMMOT	HORNE	3000	232	S3	1	125	254	263	272	280
71	AMMOT	HORNE	3500	360	A	2	25	51	53	55	56
71	AMMOT	HORNE	3500	360	S3	2	11	22	23	23	24
71	AMMOT	MATAD	3500	232	A	1	117	237	246	254	262
71	AMMOT	MATAD	3500	232	S3	1	6	13	14	14	15
71	AMMOT	MATAD	4000	304	A	1	250	505	523	541	559
71	AMMOT	MATAD	4000	304	S3	1	14	29	30	31	32
71	AMMOT	AMBAS	3500	258	A	1	5	10	10	11	11
71	AMMOT	AMBAS	4000	304	A	2	368	744	771	797	823
71	AMMOT	JAVEL	3000	232	A	1	26	52	54	56	58
71	AMMOT	JAVEL	3000	232	S3	1	3	6	6	6	6
71	AMMOT	JAVEL	3000	232	S4	1	1	3	3	3	3
71	AMMOT	JAVEL	3500	360	A	2	150	304	314	325	336
71	AMMOT	JAVEL	3500	360	S3	2	17	36	37	38	39
71	AMMOT	JAVEL	3500	360	S4	2	9	18	19	19	20
71	BUICK	SKYLA	3500	250	A	1	12	22	23	24	25
71	BUICK	SKYLA	3500	250	S4	1	0	0	0	0	0
71	BUICK	SKYLA	3500	350	A	2	550	969	1005	1042	1078
71	BUICK	SKYLA	3500	350	S4	2	5	9	10	10	10
71	BUICK	LESAB	4500	350	A	2	479	843	875	906	938
71	BUICK	CENTU	4500	455	A	4	200	352	366	379	392
71	BUICK	ELECT	5000	455	A	4	396	696	723	749	775
71	BUICK	RIVIE	4500	455	A	4	116	204	212	220	227
71	BUICK	STAWA	0	0	C	0	106	187	194	201	208
71	CADIL	CALAI	5000	472	A	4	7	11	12	12	13
71	CADIL	DEVIL	5000	472	A	4	652	1143	1198	1252	1307
71	CADIL	FLEET	5000	472	A	4	73	121	127	133	139
71	CADIL	ELDOR	5000	500	A	4	133	220	231	241	252
71	CHEVR	VEGA	2500	140	A	1	691	1236	1269	1302	1336
71	CHEVR	VEGA	2500	140	S3	1	382	682	701	719	737
71	CHEVR	VEGA	2500	140	S4	1	531	949	975	1000	1026
71	CHEVR	NOVA	3500	250	A	1	507	906	930	955	979
71	CHEVR	NOVA	3500	250	S3	1	101	180	185	190	195
71	CHEVR	NOVA	3500	250	S4	1	12	22	22	23	23
71	CHEVR	NOVA	3500	307	A	2	534	954	980	1006	1031
71	CHEVR	NOVA	3500	307	S3	2	106	190	195	200	205
71	CHEVR	NOVA	3500	307	S4	2	13	23	24	24	25
71	CHEVR	CHEVE	3500	250	A	1	120	214	220	226	232
71	CHEVR	CHEVE	3500	250	S3	1	3	7	7	7	7
71	CHEVR	CHEVE	3500	250	S4	1	4	7	7	7	7
71	CHEVR	CHEVE	3500	307	A	2	1701	3040	3122	3204	3286
71	CHEVR	CHEVE	3500	307	S3	2	56	100	103	106	108

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	CHEVR	CHEVE	3500	307	S4	2	58	103	106	109	112
71	CHEVR	CHEVR	4000	250	A	1	59	106	109	112	115
71	CHEVR	CHEVR	4000	250	S3	1	0	0	0	0	0
71	CHEVR	CHEVR	4000	350	A	2	1992	3561	3656	3752	3848
71	CHEVR	CHEVR	4000	400	S3	2	15	27	28	29	30
71	CHEVR	CAMER	3500	250	A	1	53	94	97	99	102
71	CHEVR	CAMER	3500	250	S3	1	7	13	13	14	14
71	CHEVR	CAMER	3500	250	S4	1	6	11	11	11	12
71	CHEVR	CAMER	3500	307	A	2	488	873	896	920	943
71	CHEVR	CAMER	3500	307	S3	2	69	124	127	130	134
71	CHEVR	CAMER	3500	307	S4	2	57	102	105	107	110
71	CHEVR	CORVE	3500	350	A	4	59	106	108	111	114
71	CHEVR	CORVE	3500	350	S4	4	69	124	127	130	134
71	CHEVR	STAWA	0	0	0	0	1051	1879	1929	1980	2030
71	CHRYS	NEWPO	4500	383	A	2	540	1055	1077	1098	1120
71	CHRYS	NEWPO	4500	383	S3	2	7	13	14	14	14
71	CHRYS	300	4500	440	A	4	125	244	249	255	260
71	CHRYS	NEWYO	4500	400	A	4	180	352	359	366	374
71	CHRYS	STAWA	0	0	0	0	88	173	176	180	183
71	DODGE	DART	3000	198	A	1	625	1058	1094	1131	1167
71	DODGE	DART	3000	198	S3	1	54	91	94	98	101
71	DODGE	DART	3000	198	S4	1	6	11	12	12	12
71	DODGE	DART	3500	340	A	2	285	482	498	515	531
71	DODGE	DART	3500	340	S3	4	24	41	43	44	46
71	DODGE	DART	3500	340	S4	4	3	5	5	5	5
71	DODGE	CHALL	3500	198	A	1	5	9	10	10	10
71	DODGE	CHALL	3500	198	S3	1	0	0	0	0	0
71	DODGE	CHALL	3500	198	S4	1	0	0	0	0	0
71	DODGE	CHALL	3500	225	A	1	7	12	13	13	14
71	DODGE	CHALL	3500	225	S3	1	0	0	0	0	0
71	DODGE	CHALL	3500	225	S4	1	0	0	0	0	0
71	DODGE	CHALL	3500	383	A	2	179	303	313	324	334
71	DODGE	CHALL	3500	383	S3	2	11	20	20	21	22
71	DODGE	CHALL	3500	383	S4	2	10	18	18	19	19
71	DODGE	CORON	3500	225	A	1	42	72	74	77	79
71	DODGE	CORON	3500	225	S3	1	1	2	2	2	2
71	DODGE	CORON	3500	225	S4	1	0	0	0	0	1
71	DODGE	CORON	3500	318	A	2	727	1230	1272	1315	1357
71	DODGE	CORON	3500	318	S3	2	25	42	43	45	46
71	DODGE	CORON	3500	318	S4	2	9	15	15	16	17
71	DODGE	CORON	3500	440	A	4	37	64	66	68	70
71	DODGE	CORON	3500	440	S3	4	1	2	2	2	2
71	DODGE	CORON	3500	440	S4	4	0	0	0	0	0
71	DODGE	CHARG	3500	225	A	1	6	11	12	12	12
71	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0

AUTOMOTIVE TESTING LABORATORIES, INC.
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ATL – Denver report

High Altitude Inspection

75 – 1968 – 1972 model yr. vehicles

HC & CO emissions higher at altitude, NO_x is lower

emission reduction : CO – 10 %
(for engine maintenance) HC – 15 %
NO_x – —

at cost of $12.00 / car

1. Key mode has greater correlation to FTP
2. Reduction of emissions is more cost effective by idle test at 10, 20, 30, 40, & 50 percent rejection

4% of U.S. population lives at 3,000 ft. or higher

Phase I

Selection of vehicle test sample

Phase II

Exhaust emission tests on selected vehicles
FTP used as the standard
KEY MODE – mass & conc.
Idle Test – " "

Phase III

Analysis of data:

1. ability of Key Mode & Idle Inspections to identify emissions
2. determine effectiveness ~~of~~ & costs of engine tune-up & maint.

75 car sample

1968 - 15

1969 - 17

1970 - 18

1971 - 15

1972 - 10

Emission test

1. FTP (ALL 75)
2. KEY MODE TEST (ALL 75) load & speed by wt. catego[illegible]
   a) conc. - 2 min.
   b) CVS - mass

*** Study didn't evaluate relative diagnostic powers of the tests. → extensive diagnosis was made on each car to determine malfunctions

* The idle test information was taken from the idle cycle of the Key mode Test

Choke settings are adjusted to give a lean mixture - prevents flooding in cold weather start up
This wasn't altered

Ordinary choke settings are to rich for this attitude
Ignition timing is advanced 3-6 degrees for similar reasons.
This was altered to fit manufactors specs

Idle test doesn't accurately measure ~~correct~~ emission reduction. => indicates bigger reductions than are actually obtained

Data from tests before & after was combined to determine correl. coeff.

CKMC inspection has greated ability to identify high emitters than does IC

Emission Reduction by Rejection Rate

Reductions were calculated assuming vehicles identified were repaired & those not identified were left as the were.

It was found that rejection by IC was more effective than by KMC

1972 model yr. cars

ATL No - 5, 12, 13, 20, 34, 36, 40, 44, 53, 75

COLORADO SURVEY

EMISSION LEVELS AFTER CORRECTIVE MAINTENANCE FOR 1972 VEHICLES

TEST NO.	HC	EXCESS	CO	EXCESS
5	4.61 *	+ 1.21	49.5 *	+ 10.5
12	3.28		54.2 *	+ 15.2
13	2.86		60.1 *	+ 21.1
20	5.46 *	+ 2.06	127.4 *	+ 88.4
34	1.33		53.9 *	+ 14.9
36	1.88		52.1 *	+ 13.1
40	3.14		35.9	
44	8.69 *	+ 5.29	90.0 *	+ 51.0
53	4.73 *	+ 1.33	66.9 *	+ 30.9
75	4.35 *	+ 0.95	83.1 *	+ 44.1
MEAN	4.03	+ .63	67.31	+ 28.3

HC MEAN IS 19 % OVER STANDARD

CO MEAN IS 72 % OVER STANDARD

* VEHICLES OVER 1972 STANDARDS
50 % FOR HC
90 % FOR CO

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
71	DODGE	CHARG	3500	318	A	2	118	199	206	213	220
71	DODGE	CHARG	3500	318	S3	2	4	6	7	7	7
71	DODGE	CHARG	3500	318	S4	2	1	2	2	2	2
71	DODGE	CHARG	3500	440	A	4	13	22	22	23	24
71	DODGE	CHARG	3500	440	S3	4	0	0	0	0	0
71	DODGE	CHARG	3500	440	S4	4	0	0	0	0	0
71	DODGE	POLAR	4000	225	A	1	1	2	2	2	2
71	DODGE	POLAR	4000	225	S3	1	0	0	0	0	0
71	DODGE	POLAR	4000	383	A	2	425	720	745	769	794
71	DODGE	POLAR	4000	383	S3	2	1	2	2	2	2
71	DODGE	MONAC	4500	383	A	2	148	250	259	267	276
71	DODGE	MONAC	4500	383	A	4	148	250	259	267	276
71	DODGE	STAWA	0	0	0	0	370	626	647	669	690
71	FORD	PINTO	2250	98	A	1	957	1656	1705	1754	1803
71	FORD	PINTO	2250	98	S4	1	1101	1906	1962	2018	2074
71	FORD	MAVER	3000	170	A	1	810	1403	1444	1485	1526
71	FORD	MAVER	3000	170	S3	1	227	393	405	416	428
71	FORD	MAVER	3000	302	A	2	102	176	182	187	192
71	FORD	MAVER	3000	302	S3	2	28	49	51	52	54
71	FORD	TORIN	3500	250	A	1	222	384	395	407	418
71	FORD	TORIN	3500	250	S3	1	9	15	16	16	17
71	FORD	TORIN	3500	250	S4	1	2	4	4	4	4
71	FORD	TORIN	3500	351	A	2	1873	3241	3337	3432	3527
71	FORD	TORIN	3500	351	S3	2	76	133	136	140	144
71	FORD	TORIN	3500	351	S4	2	21	37	38	39	40
71	FORD	TORIN	3500	351	A	4	402	695	716	736	757
71	FORD	TORIN	3500	351	S3	4	16	28	29	30	31
71	FORD	TORIN	3500	351	S4	4	4	8	8	8	8
71	FORD	FORD	4000	240	A	1	32	56	58	59	61
71	FORD	FORD	4000	240	S3	1	0	0	0	0	0
71	FORD	FORD	4000	351	A	2	3247	5620	5785	5950	6116
71	FORD	FORD	4000	400	A	2	3280	5677	5844	6010	6177
71	FORD	MUSTA	3000	250	A	1	106	183	188	194	199
71	FORD	MUSTA	3000	250	S3	1	12	22	22	23	23
71	FORD	MUSTA	3000	250	S4	1	6	10	11	11	11
71	FORD	MUSTA	3000	302	A	2	976	1689	1739	1788	1838
71	FORD	MUSTA	3000	302	S3	2	117	202	208	214	220
71	FORD	MUSTA	3000	302	S4	2	57	99	102	105	108
71	FORD	TBIRD	4500	429	A	4	290	503	518	532	547
71	FORD	STAWA	0	0	0	0	232	402	414	426	438
71	IMPER	LEBAR	5000	440	A	4	90	128	132	136	140
71	LINCO	CONTI	5000	460	A	4	270	405	424	443	463
71	LINCO	MARK3	5000	460	A	4	210	314	329	344	359
71	MERCU	MONTE	3500	250	A	1	44	75	76	78	79

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	MERCU	MONTE	3500	351	A	2	476	812	826	840	854
71	MERCU	MONTR	4500	400	A	2	105	179	182	186	189
71	MERCU	MARCU	4500	429	A	4	131	224	228	232	236
71	MERCU	COUGA	3500	351	A	2	573	978	994	1011	1027
71	MERCU	COMET	3000	170	A	1	366	625	635	646	656
71	MERCU	COMET	3000	170	S3	1	102	175	178	181	184
71	MERCU	COMET	3000	302	A	2	225	384	391	397	404
71	MERCU	COMET	3000	302	S3	2	63	107	109	111	113
71	MERCU	STAWA	0	0	0	0	448	764	777	790	803
71	OLDSM	F-85	3500	250	A	1	13	24	25	26	27
71	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
71	OLDSM	F-85	3500	250	S4	1	0	0	0	0	0
71	OLDSM	F-85	3500	350	A	2	1131	2052	2130	2208	2286
71	OLDSM	F-85	3500	350	S3	2	9	16	17	17	18
71	OLDSM	F-85	3500	350	S4	2	9	16	17	17	18
71	OLDSM	DELTA	4500	350	A	2	465	844	876	908	940
71	OLDSM	DELTA	4500	455	A	4	372	676	702	728	754
71	OLDSM	98	4500	455	A	4	376	682	708	734	760
71	OLDSM	TORON	5000	455	A	4	130	237	246	255	264
71	OLDSM	STAWA	0	0	0	0	175	318	330	342	354
71	PLYMO	VALIA	3000	198	A	1	969	1672	1717	1761	1805
71	PLYMO	VALIA	3000	198	S3	1	194	328	336	345	354
71	PLYMO	VALIA	3000	198	S4	1	13	22	22	23	24
71	PLYMO	VALIA	3500	318	A	2	345	584	600	615	631
71	PLYMO	VALIA	3500	318	S3	2	67	114	117	120	123
71	PLYMO	VALIA	3500	318	S4	2	4	7	7	8	8
71	PLYMO	SATEL	3500	225	A	1	52	89	91	94	96
71	PLYMO	SATEL	3500	225	S3	1	2	4	4	4	4
71	PLYMO	SATEL	3500	225	S4	1	10	17	17	18	18
71	PLYMO	SATEL	3500	383	A	2	616	1042	1070	1098	1125
71	PLYMO	SATEL	3500	383	S3	2	26	44	46	47	48
71	PLYMO	SATEL	3500	383	S4	2	17	30	31	31	32
71	PLYMO	FURY	4000	225	A	1	77	130	133	137	140
71	PLYMO	FURY	4000	225	S3	1	17	30	30	31	32
71	PLYMO	FURY	4000	383	A	2	1464	2476	2541	2607	2672
71	PLYMO	FURY	4000	383	S3	2	339	573	588	603	618
71	PLYMO	BARRA	3500	198	A	1	18	31	32	33	34
71	PLYMO	BARRA	3500	198	S3	1	2	3	3	3	3
71	PLYMO	BARRA	3500	198	S4	1	2	4	5	5	5
71	PLYMO	BARRA	3500	340	A	2	51	87	90	92	94
71	PLYMO	BARRA	3500	340	S3	2	5	9	9	9	10
71	PLYMO	BARRA	3500	340	S4	2	7	13	13	14	14
71	PLYMO	BARRA	4000	383	A	4	33	55	57	58	60
71	PLYMO	BARRA	4000	383	S3	4	3	5	6	6	6
71	PLYMO	BARRA	4000	383	S4	4	5	8	8	8	9

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
71	PLYMO	STAWA	0	0	0	0	423	715	734	753	771
71	PONTI	LEMAN	3500	250	A	1	26	47	48	50	52
71	PONTI	LEMAN	3500	250	S3	1	0	0	0	0	0
71	PONTI	LEMAN	4000	400	A	2	659	1181	1221	1260	1300
71	PONTI	LEMAN	4000	400	S3	2	9	16	17	17	18
71	PONTI	CATAL	4500	350	A	2	462	828	855	883	911
71	PONTI	CATAL	4500	400	A	4	154	276	285	294	303
71	PONTI	BONNE	4500	455	A	4	280	502	519	536	552
71	PONTI	GRANV	4500	455	A	4	117	209	216	223	230
71	PONTI	GRANP	4000	400	A	4	249	447	462	477	492
71	PONTI	FIREB	3500	250	A	1	11	20	20	21	22
71	PONTI	FIREB	3500	250	S3	1	0	1	1	1	1
71	PONTI	FIREB	3500	250	S4	1	0	1	1	1	1
71	PONTI	FIREB	3500	400	A	2	189	338	350	361	373
71	PONTI	FIREB	3500	400	S3	2	13	23	24	25	25
71	PONTI	FIREB	3500	400	S4	2	12	23	23	24	25
71	PONTI	STAWA	0	0	0	0	252	452	467	483	498
71	IMPOR	VOLKS	2250	0	0	0	6323	15213	16083	16953	17823
71	IMPOR	TOYOT	2500	0	0	0	2054	4942	5225	5508	5790
71	IMPOR	DATSU	2250	0	0	0	1117	2688	2842	2996	3149
71	IMPOR	OPEL	2250	0	0	0	924	2224	2351	2479	2606
71	IMPOR	VOLVO	3000	0	0	0	496	1194	1262	1331	1399
71	IMPOR	OTHER	2250	0	0	0	2761	6644	7024	7404	7784

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	AMMCT	HORNE	3000	199	A	1	234	213	221	228	235
70	AMMCT	HORNE	3000	199	S3	1	113	103	107	111	114
70	AMMCT	HORNE	3000	232	A	1	214	195	202	209	215
70	AMMCT	HORNE	3000	232	S3	1	72	66	68	70	72
70	AMMCT	HORNE	3000	304	A	2	87	79	82	85	87
70	AMMCT	HORNE	3000	304	S3	2	29	26	27	28	29
70	AMMOT	REBEL	3500	232	A	1	213	195	202	208	215
70	AMMCT	REBEL	3500	232	S3	1	40	37	38	39	40
70	AMMCT	REBEL	3500	232	S4	1	7	6	6	6	7
70	AMMOT	REBEL	3500	304	A	1	222	203	210	217	224
70	AMMOT	REBEL	3500	304	S3	2	42	38	39	41	42
70	AMMCT	REBEL	3500	304	S4	2	7	6	6	7	7
70	AMMCT	AMBAS	3500	232	A	1	46	42	43	45	46
70	AMMCT	AMBAS	3500	232	S3	1	2	2	2	2	2
70	AMMCT	AMBAS	4000	304	A	2	571	521	539	557	575
70	AMMCT	AMBAS	4000	304	S3	2	28	26	27	28	28
70	AMMCT	JAVEL	3000	232	A	1	39	36	37	38	40
70	AMMCT	JAVEL	3000	232	S3	1	10	9	9	10	10
70	AMMCT	JAVEL	3000	232	S4	1	4	4	4	4	4
70	AMMCT	JAVEL	3500	304	A	2	198	181	187	193	199
70	AMMCT	JAVEL	3500	304	S3	2	52	47	49	50	52
70	AMMCT	JAVEL	3500	304	S4	2	22	20	21	22	23
70	AMMCT	AMX	3500	360	A	4	16	15	15	16	16
70	AMMCT	AMX	3500	360	S3	4	24	22	23	24	24
70	BUICK	SKYLA	3500	250	A	1	44	41	43	44	46
70	BUICK	SKYLA	3500	250	S3	1	0	0	0	0	0
70	BUICK	SKYLA	3500	250	S4	1	0	0	0	0	0
70	BUICK	SKYLA	3500	350	A	2	1487	1356	1447	1497	1548
70	BUICK	SKYLA	3500	350	S3	2	18	17	17	18	19
70	BUICK	SKYLA	3500	350	S4	2	16	15	16	16	17
70	BUICK	LESAB	4500	350	A	2	868	815	844	874	903
70	BUICK	LESAB	4500	455	A	4	289	271	281	291	301
70	BUICK	WILDC	4500	455	A	4	426	400	414	429	443
70	BUICK	ELECT	4500	455	A	4	842	790	819	847	876
70	BUICK	RIVIE	4500	455	A	4	257	242	250	259	268
70	BUICK	STAWA	0	0	0	0	226	212	220	227	235
70	CADIL	CALAI	5000	472	A	4	130	132	138	144	150
70	CADIL	DEVIL	5000	472	A	4	1282	1301	1360	1420	1479
70	CADIL	FLEET	5000	472	A	4	137	139	145	152	158
70	CADIL	ELDOR	5000	500	A	4	183	185	194	202	211
70	CHEVR	NOVA	3000	153	A	1	14	13	13	14	14
70	CHEVR	NOVA	3000	153	S3	1	3	3	3	3	3
70	CHEVR	NOVA	3000	153	S4	1	1	0	0	0	0
70	CHEVR	NOVA	3500	230	A	1	1155	1059	1087	1115	1106
70	CHEVR	NOVA	3500	230	S3	1	301	276	283	291	289

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	CHEVR	NOVA	3500	230	S4	1	81	74	76	78	78
70	CHEVR	NOVA	3500	350	A	2	926	849	872	894	889
70	CHEVR	NOVA	3500	350	S3	2	241	221	227	233	232
70	CHEVR	NOVA	3500	350	S4	2	65	59	61	63	62
70	CHEVR	CHEVE	3500	230	A	1	193	177	181	186	185
70	CHEVR	CHEVE	3500	230	S3	1	10	9	9	9	9
70	CHEVR	CHEVE	3500	230	S4	1	22	20	21	21	21
70	CHEVR	CHEVE	3500	350	A	2	2781	2550	2617	2684	2669
70	CHEVR	CHEVE	3500	350	S3	2	146	134	137	141	140
70	CHEVR	CHEVE	3500	350	S4	2	321	294	302	310	308
70	CHEVR	BISCA	4000	250	A	1	15	14	14	15	15
70	CHEVR	BISCA	4000	250	S3	1	0	0	0	0	0
70	CHEVR	BISCA	4000	350	A	2	620	568	583	598	595
70	CHEVR	BISCA	4000	350	S3	2	13	12	12	12	12
70	CHEVR	BELAI	4000	250	A	1	30	27	28	29	28
70	CHEVR	BELAI	4000	250	S3	1	0	0	0	0	0
70	CHEVR	BELAI	4000	350	A	2	1176	1078	1106	1134	1128
70	CHEVR	BELAI	4000	350	S3	2	25	23	23	24	24
70	CHEVR	IMPAL	4000	250	A	1	145	133	136	140	139
70	CHEVR	IMPAL	4000	250	S3	1	3	2	2	3	2
70	CHEVR	IMPAL	4000	350	A	2	5669	5198	5335	5471	5441
70	CHEVR	IMPAL	4000	350	S3	2	121	111	114	117	116
70	CHEVR	CAPRI	4000	350	A	4	977	896	919	943	938
70	CHEVR	CAMER	3500	230	A	1	81	74	76	78	78
70	CHEVR	CAMER	3500	230	S3	1	13	12	12	12	12
70	CHEVR	CAMER	3500	230	S4	1	16	15	15	16	16
70	CHEVR	CAMER	3500	350	A	2	726	665	683	700	696
70	CHEVR	CAMER	3500	350	S3	2	118	108	111	114	113
70	CHEVR	CAMER	3500	350	S4	2	149	136	140	143	142
70	CHEVR	CORVE	3500	350	A	4	45	41	42	43	43
70	CHEVR	CORVE	3500	350	S4	4	108	99	102	104	104
70	CHEVR	STAWA	0	0	0	0	1640	1504	1543	1583	1574
70	CHRYS	NEWPO	4500	383	A	2	960	848	865	882	899
70	CHRYS	300	4500	440	A	4	219	194	198	202	206
70	CHRYS	NEWYO	4500	440	A	4	316	279	285	290	296
70	CHRYS	STAWA	0	0	0	0	155	137	140	142	145
70	DODGE	DART	3000	198	A	1	243	235	243	251	251
70	DODGE	DART	3000	198	S3	1	45	43	45	46	46
70	DODGE	DART	3000	198	S4	1	7	7	7	7	7
70	DODGE	DART	3500	340	A	2	105	102	105	108	108
70	DODGE	DART	3500	340	S3	2	19	19	19	20	20
70	DODGE	DART	3500	340	S4	2	3	3	3	3	3
70	DODGE	CHALL	3500	225	A	1	93	90	93	96	96
70	DODGE	CHALL	3500	225	S3	1	21	21	21	22	22
70	DODGE	CHALL	3500	225	S4	1	16	15	16	16	16

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	DCDGE	CHALL	35CC	383	A	4	576	559	577	596	595
70	DODGE	CHALL	35CO	383	A	4	135	131	136	140	140
70	DCDGE	CHALL	35CC	383	A	4	1CC	97	1C1	1C4	1C4
70	DCDGE	CORCN	35CC	225	A	1	124	120	124	128	128
70	CCDGE	CCRCN	35C0	225	S3	1	3	3	3	3	3
7C	CCDGE	CCRCN	35CC	225	S4	1	7	7	7	8	8
70	CODGE	CORCN	35CC	318	A	2	765	742	766	791	790
7C	DCDGE	CORCN	35C0	318	S3	2	21	21	21	22	22
70	CCDGE	CCRCN	35C0	318	S4	2	47	46	47	49	49
7C	DCDGE	CCPCN	3500	383	A	4	254	246	254	262	262
70	CCDGE	CCRCN	3500	383	S3	4	7	6	7	7	7
7C	CCDGE	CCRCN	35C0	383	S4	4	15	15	15	16	16
70	CCDGE	CCRCN	35CC	44C	A	4	127	123	127	131	131
70	DCDGE	CORCN	3500	440	S3	4	3	3	3	3	3
70	CCDGE	CORCN	35CC	44C	S4	4	7	7	7	8	8
7C	CCDGE	CHARG	35CC	225	A	1	2	2	2	2	2
70	DCDGE	CHARG	35C0	225	S3	1	C	0	0	0	0
7C	DCDGE	CHARG	35CC	225	S4	1	C	0	0	C	C
70	DCDGE	CHARG	35C0	44C	A	4	52C	5C4	521	537	537
70	DCDGE	CHARG	35C0	440	S3	4	7	7	7	7	7
7C	CCDGE	CHARG	35CC	44C	S4	4	41	4C	41	42	42
7C	DCDGE	PCLAR	45C0	318	A	2	699	678	7C1	723	723
70	DCDGE	PCLAR	45CC	318	S3	2	2	2	2	2	2
7C	DODGE	MCNAC	45C0	383	A	2	345	335	346	357	357
7C	CCDGE	STAWA	0	0	C	C	6C6	588	607	627	626
7C	FCRD	MAVER	275C	17C	A	1	2C66	2C21	2C79	2136	2115
70	FORD	MAVER	275C	17C	S3	1	579	566	583	599	593
70	FORD	FALCC	30CC	200	A	1	372	364	375	385	381
7C	FCRD	FALCC	3CCC	20C	S3	1	82	81	83	85	84
70	FORC	FALCC	3CCC	3C2	A	2	86	84	86	89	88
7C	FCRD	FALCC	3CC0	302	S3	2	19	18	19	19	19
70	FORD	FAIRL	35CC	25C	A	1	471	460	473	487	482
70	FCRD	FAIRL	35C0	25C	S3	1	47	46	48	49	49
70	FORD	FAIRL	35CC	25C	S4	1	25	24	25	25	25
7C	FCRD	FAIRL	4CCC	302	A	2	3097	3020	3116	32C3	3171
70	FORD	FAIRL	4CCC	302	S3	2	314	3C7	316	325	322
70	FCRD	FAIRL	4CCC	302	S4	2	164	160	165	17C	168
70	FORD	CUSTC	4CCC	24C	A	1	13	12	13	13	13
70	FCRD	CUSTC	4CCC	240	S3	1	C	0	C	C	C
7C	FCRD	CUSTC	4CCC	3C2	A	2	1305	1277	1313	135C	1337
70	FCRD	CUSTC	4000	302	S3	2	13	12	13	13	13
7C	FCRD	GALAX	4CCC	240	A	1	92	90	92	95	94
70	FCRC	GALAX	4000	24C	S3	1	1	1	1	1	1
7C	FCRD	GALAX	4CC0	302	A	2	4757	4654	4787	4920	4871
7C	FCRC	GALAX	4CCC	3C2	S3	2	97	94	97	10C	99

AUTCMCTIVE TESTING LABCRATCRIES, INC.
19900 E. CCLFAX AVENUE, AURCRA, CCLC.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	FORD	LTD	4000	351	A	2	1949	1906	1961	2015	1995
70	FORD	LTD	4000	351	S3	2	39	38	40	41	40
70	FORD	MUSTA	3000	200	A	1	271	265	272	280	277
70	FORD	MUSTA	3000	200	S3	1	52	51	52	54	53
70	FORD	MUSTA	3000	200	S4	1	39	38	39	40	40
70	FORD	MUSTA	3000	302	A	2	888	869	894	918	909
70	FORD	MUSTA	3000	302	S3	2	171	168	173	177	176
70	FORD	MUSTA	3000	302	S4	2	130	127	130	134	133
70	FORD	MUSTA	3500	351	A	4	618	605	622	639	633
70	FORD	MUSTA	3500	351	S3	4	119	117	120	123	122
70	FORD	MUSTA	3500	351	S4	4	90	88	91	93	92
70	FORD	TBIRD	4500	429	A	4	628	614	632	649	643
70	FORD	STAWA	0	0	0	0	3806	3724	3830	3936	3857
70	IMPER	CROWN	5000	440	A	4	96	103	106	109	112
70	IMPER	LEBAR	5000	440	A	4	7	7	7	8	8
70	LINCO	CONTI	5000	460	A	4	388	363	379	396	412
70	LINCO	MARK3	5000	460	A	4	233	218	227	237	247
70	MERCU	MONTE	3500	250	A	1	160	166	169	171	174
70	MERCU	MONTE	3500	250	S3	1	8	8	8	8	8
70	MERCU	MONTE	3500	250	S4	1	5	5	5	5	5
70	MERCU	MONTE	3500	302	A	2	1204	1114	1132	1151	1169
70	MERCU	MONTE	3500	302	S3	2	56	54	55	55	56
70	MERCU	MONTE	3500	302	S4	2	37	34	35	36	36
70	MERCU	MONTR	4000	390	A	2	171	158	161	163	166
70	MERCU	MONTR	4000	390	S3	2	0	0	0	0	0
70	MERCU	MARQU	4500	390	A	2	171	158	161	163	166
70	MERCU	MARQU	4500	390	S3	2	0	0	0	0	0
70	MERCU	MARQU	4500	429	A	4	215	198	202	205	208
70	MERCU	COUGA	3500	302	A	2	565	522	531	540	548
70	MERCU	COUGA	3500	302	S3	2	30	28	28	29	29
70	MERCU	COUGA	3500	302	S4	2	17	15	16	16	16
70	MERCU	COUGA	3500	351	A	4	377	348	354	360	365
70	MERCU	COUGA	3500	351	S3	4	20	18	19	19	19
70	MERCU	COUGA	3500	351	S4	4	11	10	10	10	11
70	MERCU	STAWA	0	0	0	0	731	676	687	698	710
70	OLDSM	F-85	3500	250	A	1	51	45	47	48	50
70	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
70	OLDSM	F-85	3500	250	S4	1	1	1	1	1	1
70	OLDSM	F-85	4000	350	A	2	2397	2142	2221	2299	2378
70	OLDSM	F-85	4000	350	S3	2	24	22	23	23	24
70	OLDSM	F-85	4000	350	S4	2	74	66	69	71	74
70	OLDSM	F-85	4000	455	A	4	102	91	94	97	101
70	OLDSM	F-85	4000	455	S3	4	1	0	0	1	1
70	OLDSM	F-85	4000	455	S4	4	3	2	2	3	3
70	OLDSM	DEL88	4500	350	A	2	950	849	880	911	943

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	OLDSM	DEL88	4500	455	A	4	761	680	705	730	755
70	OLDSM	98	4500	455	A	4	768	686	711	737	762
70	OLDSM	TORON	4500	455	A	4	221	197	205	212	219
70	OLDSM	STAWA	0	0	0	0	358	320	331	343	355
70	PLYMO	VALIA	3000	198	A	1	1129	1057	1084	1111	1110
70	PLYMO	VALIA	3000	198	S3	1	312	292	300	307	307
70	PLYMO	VALIA	3000	198	S4	1	46	43	44	45	45
70	PLYMO	VALIA	3500	318	A	2	311	291	299	306	306
70	PLYMO	VALIA	3500	318	S3	2	86	80	82	84	84
70	PLYMO	VALIA	3500	318	S4	2	12	11	12	12	12
70	PLYMO	VALIA	3500	340	A	4	116	109	112	115	114
70	PLYMO	VALIA	3500	340	S3	4	32	30	31	31	31
70	PLYMO	VALIA	3500	340	S4	4	4	4	4	4	4
70	PLYMO	BELVE	3500	225	A	1	106	99	101	104	104
70	PLYMO	BELVE	3500	225	S3	1	6	6	6	6	6
70	PLYMO	BELVE	3500	225	S4	1	15	14	14	15	15
70	PLYMO	BELVE	3500	318	A	2	909	852	873	895	894
70	PLYMO	BELVE	3500	318	S3	2	55	52	53	55	55
70	PLYMO	BELVE	3500	318	S4	2	131	123	126	129	129
70	PLYMO	BELVE	3500	383	A	4	112	105	108	111	110
70	PLYMO	BELVE	3500	383	S3	4	6	6	6	6	6
70	PLYMO	BELVE	3500	383	S4	4	16	15	15	16	16
70	PLYMO	FURY	4000	225	A	1	113	105	108	111	111
70	PLYMO	FURY	4000	225	S3	1	0	0	0	0	0
70	PLYMO	FURY	4000	318	A	2	2124	1989	2040	2091	2088
70	PLYMO	FURY	4000	318	S3	2	17	16	16	16	16
70	PLYMO	FURY	4000	440	A	4	22	21	21	22	22
70	PLYMO	FURY	4000	440	S3	4	0	0	0	0	0
70	PLYMO	BARRA	3500	225	A	1	40	38	38	39	39
70	PLYMO	BARRA	3500	225	S3	1	3	3	3	3	3
70	PLYMO	BARRA	3500	225	S4	1	11	10	11	11	11
70	PLYMO	BARRA	3500	383	A	2	300	281	288	295	295
70	PLYMO	BARRA	3500	383	S3	2	28	26	27	27	27
70	PLYMO	BARRA	3500	383	S4	2	86	80	82	85	84
70	PLYMO	STAWA	0	0	0	0	542	507	520	533	532
70	PONTI	TEMPE	3500	250	A	1	131	117	121	125	129
70	PONTI	TEMPE	3500	250	S3	1	6	5	6	6	6
70	PONTI	TEMPE	3500	250	S4	1	10	9	9	9	9
70	PONTI	TEMPE	4000	400	A	4	1299	1162	1199	1237	1275
70	PONTI	TEMPE	4000	400	S3	4	65	58	60	62	64
70	PONTI	TEMPE	4000	400	S4	4	99	89	91	94	97
70	PONTI	CATAL	4500	350	A	2	1687	1509	1558	1607	1656
70	PONTI	EXECU	4500	400	A	4	218	195	201	207	214
70	PONTI	BONNE	4500	455	A	4	671	600	620	639	659
70	PONTI	GRANP	4000	400	A	4	499	446	461	475	490

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
70	PONTI	FIREB	3500	250	A	1	18	16	17	18	18
70	PONTI	FIREB	3500	250	S3	1	1	1	1	1	1
70	PONTI	FIREB	3500	250	S4	1	2	2	2	2	2
70	PONTI	FIREB	3500	350	A	2	277	248	256	264	272
70	PONTI	FIREB	3500	350	S3	2	25	22	23	24	24
70	PONTI	FIREB	3500	350	S4	2	42	37	39	40	41
70	PONTI	STAWA	0	0	0	0	470	421	434	448	462
70	IMPOR	VOLKS	2250	0	0	0	8605	7856	8281	8705	9130
70	IMPOR	TOYOT	2500	0	0	0	2795	2552	2690	2828	2966
70	IMPOR	DATSU	2250	0	0	0	1520	1388	1463	1538	1613
70	IMPOR	OPEL	2250	0	0	0	1258	1148	1210	1273	1335
70	IMPOR	VOLVO	3000	0	0	0	675	616	650	683	716
70	IMPOR	OTHER	2250	0	0	0	3758	3430	3616	3802	3987

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	AMMOT	AMERI	3000	199	A	1	571	681	703	726	748
69	AMMOT	AMERI	3000	199	S3	1	265	315	326	336	347
69	AMMOT	AMERI	3000	199	S4	1	18	22	23	24	24
69	AMMOT	AMERI	3000	290	A	2	28	34	35	36	37
69	AMMOT	AMERI	3000	290	S3	2	13	15	16	16	17
69	AMMOT	AMERI	3000	290	S4	2	0	1	1	1	1
69	AMMOT	REBEL	3500	232	A	1	204	243	251	259	267
69	AMMOT	REBEL	3500	232	S3	1	13	16	17	17	18
69	AMMOT	REBEL	3500	290	A	2	239	284	294	303	313
69	AMMOT	REBEL	3500	290	S3	2	16	19	19	20	21
69	AMMOT	AMBAS	3500	232	A	1	58	70	72	74	77
69	AMMOT	AMBAS	3500	232	S3	1	3	4	4	4	4
69	AMMOT	AMBAS	4000	290	A	2	617	735	759	784	808
69	AMMOT	AMBAS	4000	290	S3	2	36	43	45	46	47
69	AMMOT	JAVEL	3000	232	A	1	70	83	86	89	92
69	AMMOT	JAVEL	3000	232	S3	1	18	22	23	23	24
69	AMMOT	JAVEL	3000	232	S4	1	10	12	13	13	13
69	AMMOT	JAVEL	3500	290	A	2	215	256	265	273	282
69	AMMOT	JAVEL	3500	290	S3	2	57	68	70	73	75
69	AMMOT	JAVEL	3500	290	S4	2	32	39	40	41	42
69	AMMOT	AMX	3500	290	A	4	30	36	37	39	40
69	AMMOT	AMX	3500	290	S4	4	48	58	60	61	63
69	BUICK	SPECI	3500	250	A	1	54	48	50	51	51
69	BUICK	SPECI	3500	250	S3	1	1	1	1	1	1
69	BUICK	SPECI	3500	350	A	2	1297	1162	1203	1243	1239
69	BUICK	SPECI	3500	350	S3	2	35	32	33	34	34
69	BUICK	LESAB	4500	350	A	2	1363	1222	1264	1307	1302
69	BUICK	WILDC	4500	430	A	4	502	449	465	481	479
69	BUICK	ELECT	4500	430	A	4	991	888	919	951	947
69	BUICK	RIVIE	4500	430	A	4	390	349	362	374	373
69	BUICK	STAWA	0	0	0	0	266	238	247	255	254
69	CADIL	CALAI	5000	472	A	4	124	118	123	128	133
69	CADIL	DEVIL	5000	472	A	4	1222	1158	1209	1259	1310
69	CADIL	FLEET	5000	472	A	4	130	124	129	134	140
69	CADIL	ELDOR	5000	472	A	4	174	165	172	179	187
69	CHEVR	CORVA	2750	164	A	2	37	34	35	34	34
69	CHEVR	CORVA	2750	164	S3	2	7	6	6	6	6
69	CHEVR	CORVA	2750	164	S4	2	7	6	6	6	6
69	CHEVR	CHEV2	3000	153	A	1	38	35	36	36	35
69	CHEVR	CHEV2	3000	153	S3	1	14	13	13	13	13
69	CHEVR	CHEV2	3000	153	S4	1	3	2	2	2	2
69	CHEVR	CHEV2	3000	230	A	1	1018	933	957	952	939
69	CHEVR	CHEV2	3000	230	S3	1	383	351	360	358	353
69	CHEVR	CHEV2	3000	230	S4	1	83	76	78	77	76
69	CHEVR	CHEV2	3000	327	A	2	561	515	528	525	518

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	CHEVR	CHEV2	3000	327	S3	2	211	193	198	197	195
69	CHEVR	CHEV2	3000	327	S4	2	45	42	43	42	42
69	CHEVR	CHEVE	3500	230	A	1	328	301	308	307	303
69	CHEVR	CHEVE	3500	230	S3	1	40	37	38	37	37
69	CHEVR	CHEVE	3500	230	S4	1	49	45	46	46	46
69	CHEVR	CHEVE	3500	327	A	2	2685	2461	2523	2510	2477
69	CHEVR	CHEVE	3500	327	S3	2	332	304	312	310	306
69	CHEVR	CHEVE	3500	327	S4	2	407	373	383	380	376
69	CHEVR	BISCA	4000	250	A	1	29	27	27	27	27
69	CHEVR	BISCA	4000	250	S3	1	1	1	1	1	1
69	CHEVR	BISCA	4000	327	A	2	657	602	618	614	606
69	CHEVR	BISCA	4000	327	S3	2	27	25	25	25	25
69	CHEVR	BELAI	4000	250	A	1	44	40	41	41	40
69	CHEVR	BELAI	4000	250	S3	1	1	1	1	1	1
69	CHEVR	BELAI	4000	327	A	2	1247	1143	1172	1165	1150
69	CHEVR	BELAI	4000	327	S3	2	51	47	48	48	47
69	CHEVR	IMPAL	4000	250	A	1	213	195	200	199	197
69	CHEVR	IMPAL	4000	250	S3	1	8	8	8	8	8
69	CHEVR	IMPAL	4000	327	A	2	6012	5510	5651	5620	5547
69	CHEVR	IMPAL	4000	327	S3	2	250	229	235	234	231
69	CHEVR	CAPRI	4000	327	A	4	1055	967	992	986	973
69	CHEVR	CAPRI	4000	327	S3	4	21	19	20	20	19
69	CHEVR	CAMER	3500	230	A	1	183	168	172	171	169
69	CHEVR	CAMER	3500	230	S3	1	58	54	55	55	54
69	CHEVR	CAMER	3500	230	S4	1	76	69	71	71	70
69	CHEVR	CAMER	3500	327	A	2	1040	953	977	972	959
69	CHEVR	CAMER	3500	327	S3	2	334	306	314	312	308
69	CHEVR	CAMER	3500	327	S4	2	431	395	405	403	398
69	CHEVR	CORVE	3500	350	A	4	70	64	66	65	64
69	CHEVR	CORVE	3500	350	S3	4	3	2	2	2	2
69	CHEVR	CORVE	3500	350	S4	4	266	243	250	248	245
69	CHEVR	STAWA	0	0	0	0	1807	1656	1699	1689	1667
69	CHRYS	NEWPO	4500	383	A	2	1353	1230	1254	1279	1276
69	CHRYS	NEWPO	4500	383	S3	2	2	2	2	2	2
69	CHRYS	300	4500	440	A	4	319	282	287	293	292
69	CHRYS	NEWYO	4500	440	A	4	460	406	414	422	421
69	CHRYS	STAWA	0	0	0	0	226	199	203	207	207
69	DODGE	DART	3000	170	A	1	1234	1078	1112	1111	1108
69	DODGE	DART	3000	170	S3	1	124	108	112	111	111
69	DODGE	DART	3000	170	S4	1	103	90	93	93	93
69	DODGE	DART	3000	318	A	2	676	590	609	609	607
69	DODGE	DART	3000	318	S3	2	68	59	61	61	61
69	DODGE	DART	3000	318	S4	2	56	49	51	51	51
69	DODGE	CORON	3500	225	A	1	120	104	108	108	107
69	DODGE	CORON	3500	225	S3	1	5	4	4	4	4

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	DODGE	CORON	3500	225	S4	1	11	9	10	10	10
69	DODGE	CORON	3500	318	A	2	1688	1475	1522	1521	1516
69	DODGE	CORON	3500	318	S3	2	77	67	69	69	69
69	DODGE	CORON	3500	318	S4	2	159	139	144	143	143
69	DODGE	CORON	3500	440	A	4	67	58	60	60	60
69	DODGE	CORON	3500	440	S3	4	3	2	2	2	2
69	DODGE	CORON	3500	440	S4	4	6	5	5	5	5
69	DODGE	POLAR	4000	318	A	2	558	487	503	502	501
69	DODGE	POLAR	4000	318	S3	2	1	0	1	1	1
69	DODGE	MONAC	4000	318	A	2	159	139	143	143	143
69	DODGE	MONAC	4000	318	S3	2	0	0	0	0	0
69	DODGE	MONAC	4000	383	A	4	17	15	15	15	15
69	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
69	DODGE	CHARG	3500	225	A	1	4	3	3	3	3
69	DODGE	CHARG	3500	225	S3	1	0	0	0	0	0
69	DODGE	CHARG	3500	225	S4	1	0	0	0	0	0
69	DODGE	CHARG	4000	440	A	4	843	736	760	760	757
69	DODGE	CHARG	4000	440	S3	4	10	8	9	9	9
69	DODGE	CHARG	4000	440	S4	4	82	71	74	74	74
69	DODGE	STAWA	0	0	0	0	621	542	560	559	558
69	FORD	FALCO	3000	170	A	1	192	185	191	189	184
69	FORD	FALCO	3000	170	S3	1	65	63	65	64	63
69	FORD	FALCO	3000	200	A	1	191	184	189	188	183
69	FORD	FALCO	3000	200	S3	1	65	63	65	64	62
69	FORD	FAIRL	3500	250	A	1	435	419	431	426	417
69	FORD	FAIRL	3500	250	S3	1	44	42	43	43	42
69	FORD	FAIRL	3500	250	S4	1	23	22	22	22	22
69	FORD	FAIRL	3500	302	A	2	2861	2758	2835	2807	2745
69	FORD	FAIRL	3500	302	S3	2	290	280	288	285	278
69	FORD	FAIRL	3500	302	S4	2	151	146	150	149	145
69	FORD	CUSTO	4000	240	A	1	22	21	22	22	21
69	FORD	CUSTO	4000	240	S3	1	0	0	0	0	0
69	FORD	CUSTO	4000	302	A	2	1177	1135	1167	1155	1130
69	FORD	CUSTO	4000	302	S3	2	24	23	23	23	23
69	FORD	GALAX	4000	240	A	1	84	81	83	83	81
69	FORD	GALAX	4000	240	S3	1	1	1	1	1	1
69	FORD	GALAX	4000	302	A	2	4374	4217	4334	4291	4197
69	FORD	GALAX	4000	302	S3	2	89	86	88	87	85
69	FORD	LTD	4000	302	A	2	1792	1727	1775	1758	1719
69	FORD	LTD	4000	302	A	2	36	35	36	35	35
69	FORD	MUSTA	3000	200	A	1	220	212	218	216	211
69	FORD	MUSTA	3000	200	S3	1	53	51	52	52	51
69	FORD	MUSTA	3000	200	S4	1	36	35	36	35	34
69	FORD	MUSTA	3500	250	A	1	185	178	183	182	178
69	FORD	MUSTA	3500	250	S3	1	44	43	44	44	43

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	FORD	MUSTA	3500	250	S4	1	30	29	30	29	29
69	FORD	MUSTA	3500	302	A	2	1546	1490	1531	1516	1483
69	FORD	MUSTA	3500	302	S3	2	373	360	370	366	358
69	FORD	MUSTA	3500	302	S4	2	254	245	252	249	244
69	FORD	MUSTA	3500	351	A	2	256	247	253	251	245
69	FORD	MUSTA	3500	351	S3	2	61	59	61	60	59
69	FORD	MUSTA	3500	351	S4	2	42	40	41	41	40
69	FORD	TBIRD	4500	429	A	4	507	489	502	497	486
69	FORD	STAWA	0	0	0	0	3500	3374	3468	3433	3358
69	IMPER	CROWN	5000	440	A	4	149	132	136	139	143
69	IMPER	LEBAR	5000	440	A	4	109	96	99	102	105
69	LINCO	CONTI	5500	460	A	4	481	476	498	519	511
69	LINCO	MARK3	5000	460	A	4	289	286	299	311	306
69	MERCU	MONTE	3500	250	A	1	196	178	181	184	179
69	MERCU	MONTE	3500	250	S3	1	12	11	11	11	11
69	MERCU	MONTE	3500	250	S4	1	3	3	3	3	3
69	MERCU	MONTE	3500	302	A	2	1304	1186	1205	1225	1190
69	MERCU	MONTE	3500	302	S3	2	81	74	75	76	74
69	MERCU	MONTE	3500	302	S4	2	25	23	23	23	23
69	MERCU	MONTR	4000	390	A	2	186	169	171	174	169
69	MERCU	MONTR	4000	390	S3	2	0	0	0	0	0
69	MERCU	MARQU	4500	390	A	2	186	169	171	174	169
69	MERCU	MARQU	4500	390	S3	2	0	0	0	0	0
69	MERCU	MARAU	4500	429	A	4	233	212	216	219	213
69	MERCU	COUGA	3500	351	A	2	1243	1130	1149	1167	1134
69	MERCU	COUGA	3500	351	S3	2	104	94	96	97	95
69	MERCU	COUGA	3500	351	S4	2	43	39	39	40	39
69	MERCU	STAWA	0	0	0	0	794	722	734	746	725
69	OLDSM	F-85	3500	250	A	1	52	48	50	52	51
69	OLDSM	F-85	3500	250	S3	1	0	0	0	0	0
69	OLDSM	F-85	3500	250	S4	1	2	2	2	2	2
69	OLDSM	F-85	3500	350	A	2	2149	1980	2050	2120	2105
69	OLDSM	F-85	3500	350	S3	2	39	36	37	38	38
69	OLDSM	F-85	3500	350	S4	2	112	103	107	111	110
69	OLDSM	DEL88	4000	350	A	2	1215	1119	1159	1198	1190
69	OLDSM	DEL88	4000	350	S3	2	1	1	1	1	1
69	OLDSM	DEL88	4000	455	A	4	974	897	928	960	953
69	OLDSM	DEL88	4000	455	S3	4	0	0	0	0	0
69	OLDSM	98	4500	455	A	4	983	905	937	969	962
69	OLDSM	TORON	4500	455	A	4	283	260	270	279	277
69	OLDSM	STAWA	0	0	0	0	458	422	437	452	448
69	PLYMO	VALIA	3000	170	A	1	855	805	825	824	820
69	PLYMO	VALIA	3000	170	S3	1	164	154	158	156	157
69	PLYMO	VALIA	3000	318	A	2	73	69	70	70	70
69	PLYMO	VALIA	3000	318	S3	2	14	13	13	13	13

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
69	PLYMO	BELVE	3500	225	A	1	140	132	135	135	134
69	PLYMO	BELVE	3500	225	S3	1	6	6	6	6	6
69	PLYMO	BELVE	3500	225	S4	1	38	36	37	37	37
69	PLYMO	BELVE	3500	318	A	2	1783	1679	1721	1719	1710
69	PLYMO	BELVE	3500	318	S3	2	84	79	81	81	81
69	PLYMO	BELVE	3500	318	S4	2	490	462	473	473	470
69	PLYMO	FURY	4000	225	A	1	47	44	46	45	45
69	PLYMO	FURY	4000	225	S3	1	0	0	0	0	0
69	PLYMO	FURY	4000	318	A	2	2601	2450	2512	2508	2494
69	PLYMO	FURY	4000	318	S3	2	34	32	33	33	32
69	PLYMO	BARRA	3000	225	A	1	61	58	59	59	59
69	PLYMO	BARRA	3000	225	S3	1	3	3	3	3	3
69	PLYMO	BARRA	3000	225	S4	1	8	7	8	8	8
69	PLYMO	BARRA	3500	318	A	2	215	202	207	207	206
69	PLYMO	BARRA	3500	318	S3	2	12	12	12	12	12
69	PLYMO	BARRA	3500	318	S4	2	29	27	28	28	28
69	PLYMO	STAWA	0	0	C	0	732	689	706	705	702
69	PONTI	TEMPE	3500	250	A	1	237	219	226	233	229
69	PONTI	TEMPE	3500	250	S3	1	16	14	15	15	15
69	PONTI	TEMPE	3500	250	S4	1	29	27	28	28	28
69	PONTI	TEMPE	3500	400	A	4	1796	1655	1707	1759	1735
69	PONTI	TEMPE	3500	400	S3	4	122	112	115	119	117
69	PONTI	TEMPE	3500	400	S4	4	222	205	211	218	215
69	PONTI	CATAL	4500	400	A	4	2084	1920	1980	2041	2013
69	PONTI	CATAL	4500	400	S3	4	6	5	5	6	6
69	PONTI	EXECU	4500	400	A	4	269	248	256	263	260
69	PONTI	EXECU	4500	400	S3	4	0	0	0	0	0
69	PONTI	BONNE	4500	420	A	4	829	764	788	812	801
69	PONTI	BONNE	4500	420	S3	4	2	2	2	2	2
69	PONTI	GRANP	4000	400	A	4	439	405	417	430	424
69	PONTI	GRANP	4000	400	S3	4	1	1	1	1	1
69	PONTI	FIREB	3500	250	A	1	75	69	71	73	72
69	PONTI	FIREB	3500	250	S3	1	11	10	10	11	10
69	PONTI	FIREB	3500	250	S4	1	13	12	12	13	12
69	PONTI	FIREB	3500	400	A	4	481	443	457	471	465
69	PONTI	FIREB	3500	400	S3	4	72	67	69	71	70
69	PONTI	FIREB	3500	400	S4	4	85	78	80	83	82
69	PONTI	STAWA	0	0	C	0	583	537	554	571	563
69	IMPOR	VOLKS	2250	0	0	0	9699	9289	9766	10242	10719
69	IMPOR	TOYOT	2500	0	0	0	2117	2027	2131	2235	2339
69	IMPOR	OPEL	2250	0	0	0	1644	1574	1655	1736	1817
69	IMPOR	DATSU	2250	0	0	0	1056	1012	1063	1115	1167
69	IMPOR	FIAT	2000	0	0	0	748	716	753	790	827
69	IMPOR	OTHER	2250	0	0	0	3876	3712	3903	4093	4284

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	AMMOT	AMERI	3000	199	A	1	504	425	439	453	435
68	AMMOT	AMERI	3000	199	S3	1	278	235	242	250	240
68	AMMOT	AMERI	3000	290	A	2	19	16	17	17	17
68	AMMOT	AMERI	3000	290	S3	2	11	9	9	9	9
68	AMMOT	REBEL	3500	232	A	1	261	221	228	235	226
68	AMMOT	REBEL	3500	232	S3	1	32	27	28	29	28
68	AMMOT	REBEL	3500	290	A	2	220	186	192	198	190
68	AMMOT	REBEL	3500	290	S3	2	27	23	23	24	23
68	AMMOT	AMBAS	3500	232	A	1	41	34	35	36	35
68	AMMOT	AMBAS	3500	232	S3	1	0	0	0	0	0
68	AMMOT	AMBAS	3500	290	A	2	479	405	418	430	414
68	AMMOT	AMBAS	3500	290	S3	2	10	9	9	9	9
68	AMMOT	JAVEL	3000	232	A	1	100	85	87	90	86
68	AMMOT	JAVEL	3000	232	S3	1	19	16	16	17	16
68	AMMOT	JAVEL	3000	232	S4	1	15	13	13	14	13
68	AMMOT	JAVEL	3000	290	A	2	219	185	191	197	190
68	AMMOT	JAVEL	3000	290	S3	2	42	35	36	37	36
68	AMMOT	JAVEL	3000	290	S4	2	34	29	29	30	29
68	AMMOT	AMX	3500	290	A	4	38	32	33	34	33
68	AMMOT	AMX	3500	290	S4	4	31	26	27	28	27
68	AMMOT	STAWA	0	0	0	0	381	322	332	343	329
68	BUICK	SPECI	3500	250	A	1	99	113	117	117	115
68	BUICK	SPECI	3500	250	S3	1	2	3	3	3	3
68	BUICK	SPECI	3500	250	S4	1	1	1	1	1	1
68	BUICK	SPECI	3500	350	A	2	1408	1608	1663	1656	1640
68	BUICK	SPECI	3500	350	S3	2	38	43	44	44	44
68	BUICK	SPECI	3500	350	S4	2	17	20	20	20	20
68	BUICK	LESAB	4000	350	A	2	1274	1456	1505	1499	1484
68	BUICK	LESAB	4000	350	S3	2	2	2	3	3	2
68	BUICK	WILDC	4500	430	A	4	471	538	556	554	548
68	BUICK	WILDC	4500	430	S3	4	0	0	0	0	0
68	BUICK	ELECT	4500	430	A	4	929	1061	1096	1092	1081
68	BUICK	RIVIE	4500	430	A	4	348	397	411	409	405
68	BUICK	STAWA	0	0	0	0	246	281	291	290	287
68	CADIL	CALAI	5000	472	A	4	138	151	157	164	162
68	CADIL	DEVIL	5000	472	A	4	1358	1486	1548	1610	1597
68	CADIL	FLEET	5000	472	A	4	146	160	167	174	172
68	CADIL	ELDOR	5000	472	A	4	241	265	276	287	284
68	CHEVR	CORVA	2750	164	A	2	90	96	95	94	92
68	CHEVR	CORVA	2750	164	S3	2	22	23	23	23	22
68	CHEVR	CORVA	2750	164	S4	2	16	17	17	17	17
68	CHEVR	CHEV2	3000	153	A	1	9	10	10	9	9
68	CHEVR	CHEV2	3000	153	S3	1	2	2	2	2	2
68	CHEVR	CHEV2	3000	153	S4	1	0	0	0	0	0
68	CHEVR	CHEV2	3000	230	A	1	978	1039	1033	1020	993

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	CHEVR	CHEV2	3000	230	S3	1	238	253	252	249	242
68	CHEVR	CHEV2	3000	230	S4	1	46	49	49	48	47
68	CHEVR	CHEV2	3000	307	A	2	369	392	390	384	374
68	CHEVR	CHEV2	3000	307	S3	2	90	95	95	94	91
68	CHEVR	CHEV2	3000	307	S4	2	17	18	18	18	17
68	CHEVR	CHEVE	3500	230	A	1	497	528	525	519	505
68	CHEVR	CHEVE	3500	230	S3	1	79	84	83	82	80
68	CHEVR	CHEVE	3500	230	S4	1	71	76	75	74	72
68	CHEVR	CHEVE	3500	307	A	2	1957	2079	2068	2041	1986
68	CHEVR	CHEVE	3500	307	S3	2	312	331	329	325	316
68	CHEVR	CHEVE	3500	307	S4	2	281	299	297	293	285
68	CHEVR	CHEVE	3500	396	A	4	341	362	360	355	346
68	CHEVR	CHEVE	3500	396	S3	4	54	57	57	56	55
68	CHEVR	CHEVE	3500	396	S4	4	49	52	51	51	49
68	CHEVR	BISCA	3500	250	A	1	48	51	51	50	49
68	CHEVR	BISCA	3500	250	S3	1	3	3	3	3	3
68	CHEVR	BISCA	4000	307	A	2	651	691	688	679	661
68	CHEVR	BISCA	4000	307	S3	2	48	51	51	50	49
68	CHEVR	BELAI	4000	250	A	1	91	96	96	95	92
68	CHEVR	BELAI	4000	250	S3	1	6	7	7	7	6
68	CHEVR	BELAI	4000	307	A	2	1230	1307	1299	1283	1248
68	CHEVR	BELAI	4000	307	S3	2	91	96	96	95	92
68	CHEVR	IMPAL	4000	250	A	1	440	467	465	459	447
68	CHEVR	IMPAL	4000	250	S3	1	32	34	34	34	33
68	CHEVR	IMPAL	4000	307	A	2	5941	6313	6278	6196	6031
68	CHEVR	IMPAL	4000	307	S3	2	440	467	465	459	447
68	CHEVR	CAPRI	4000	307	A	2	1108	1178	1171	1156	1125
68	CHEVR	CAPRI	4000	307	S3	2	22	24	23	23	22
68	CHEVR	CAMER	3500	230	A	1	258	275	273	270	262
68	CHEVR	CAMER	3500	230	S3	1	99	105	104	103	100
68	CHEVR	CAMER	3500	230	S4	1	90	96	95	94	92
68	CHEVR	CAMER	3500	307	A	2	934	992	987	974	948
68	CHEVR	CAMER	3500	307	S3	2	357	380	378	373	363
68	CHEVR	CAMER	3500	307	S4	2	327	347	345	341	332
68	CHEVR	CORVE	3500	327	A	4	50	54	53	53	51
68	CHEVR	CORVE	3500	327	S3	4	3	3	3	3	3
68	CHEVR	CORVE	3500	327	S4	4	233	247	246	243	236
68	CHEVR	STAWA	0	0	C	0	2272	2414	2401	2370	2307
68	CHRYS	NEWPO	4000	383	A	2	1489	1733	1767	1763	1752
68	CHRYS	NEWPO	4000	383	S3	2	4	5	5	5	5
68	CHRYS	300	4500	440	A	4	336	392	399	399	396
68	CHRYS	300	4500	440	S3	4	1	1	1	1	1
68	CHRYS	NEWYO	4500	440	A	4	490	571	582	581	577
68	CHRYS	STAWA	0	0	C	0	239	279	284	284	282
68	DODGE	DART	3000	170	A	1	945	905	904	901	893

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	DODGE	DART	3000	170	S3	1	113	108	108	108	107
68	DODGE	DART	3000	170	S4	1	23	22	22	22	22
68	DODGE	DART	3000	273	A	2	315	302	301	300	298
68	DODGE	DART	3000	273	S3	2	37	36	36	36	35
68	DODGE	DART	3000	273	S4	2	7	7	7	7	7
68	DODGE	DART	3500	340	A	4	53	51	51	51	50
68	DODGE	DART	3500	340	S3	4	6	6	6	6	6
68	DODGE	DART	3500	340	S4	4	1	1	1	1	1
68	DODGE	CORON	3500	225	A	1	183	175	175	175	173
68	DODGE	CORON	3500	225	S3	1	19	18	18	18	18
68	DODGE	CORON	3500	225	S4	1	6	6	6	6	6
68	DODGE	CORON	3500	273	A	2	1071	1025	1024	1021	1012
68	DODGE	CORON	3500	273	S3	2	113	108	108	108	107
68	DODGE	CORON	3500	273	S4	2	37	36	36	36	35
68	DODGE	CORON	3500	318	A	2	274	263	262	262	259
68	DODGE	CORON	3500	318	S3	2	29	27	27	27	27
68	DODGE	CORON	3500	318	S4	2	9	9	9	9	9
68	DODGE	POLAR	4000	318	A	2	934	894	893	891	883
68	DODGE	POLAR	4000	318	S3	2	9	9	9	9	8
68	DODGE	MONAC	4000	383	A	2	310	297	297	296	293
68	DODGE	MONAC	4000	383	S3	2	0	0	0	0	0
68	DODGE	CHARG	3500	318	A	2	629	602	601	599	594
68	DODGE	CHARG	3500	318	S3	2	16	15	15	15	15
68	DODGE	CHARG	3500	318	S4	2	50	47	47	47	47
68	DODGE	CHARG	3500	440	A	4	269	258	257	257	254
68	DODGE	CHARG	3500	440	S3	4	7	6	6	6	6
68	DODGE	CHARG	3500	440	S4	4	21	20	20	20	20
68	DODGE	STAWA	0	0	0	0	702	672	672	670	664
68	FORD	FALCO	3000	170	A	1	471	433	429	420	402
68	FORD	FALCO	3000	170	S3	1	213	196	194	190	182
68	FORD	FALCO	3000	289	A	2	155	143	141	138	132
68	FORD	FALCO	3000	289	S3	2	70	64	64	62	60
68	FORD	FAIRL	3500	200	A	1	286	264	261	255	245
68	FORD	FAIRL	3500	200	S3	1	34	32	31	31	29
68	FORD	FAIRL	3500	200	S4	1	14	12	12	12	12
68	FORD	FAIRL	3500	302	A	2	2498	2300	2277	2228	2133
68	FORD	FAIRL	3500	302	S3	2	304	280	277	271	259
68	FORD	FAIRL	3500	302	S4	2	122	113	112	109	104
68	FORD	CUSTO	4000	240	A	1	186	172	170	166	159
68	FORD	CUSTO	4000	240	S3	1	26	24	24	23	22
68	FORD	CUSTO	4000	302	A	2	711	655	648	634	607
68	FORD	CUSTO	4000	302	S3	2	100	92	91	89	86
68	FORD	GALAX	4000	240	A	1	33	30	30	29	28
68	FORD	GALAX	4000	240	S3	1	0	0	0	0	0
68	FORD	GALAX	4000	302	A	2	3676	3385	3351	3278	3139

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	FORD	GALAX	4000	302	S3	2	90	83	82	80	77
68	FORD	LTD	4000	302	A	2	1523	1402	1388	1358	1300
68	FORD	LTD	4000	302	S3	2	6	5	5	5	5
68	FORD	MUSTA	3000	200	A	1	609	560	555	543	520
68	FORD	MUSTA	3000	200	S3	1	191	176	175	171	163
68	FORD	MUSTA	3000	200	S4	1	48	44	44	43	41
68	FORD	MUSTA	3000	289	A	2	1469	1353	1339	1310	1255
68	FORD	MUSTA	3000	289	S3	2	463	426	422	413	395
68	FORD	MUSTA	3000	289	S4	2	116	107	106	104	99
68	FORD	TBIRD	4500	390	A	4	609	561	556	543	520
68	FORD	STAWA	0	0	0	0	2916	2686	2659	2601	2491
68	IMPER	CROWN	5000	440	A	4	134	140	144	148	145
68	IMPER	LEBAR	5000	440	A	4	93	98	101	104	101
68	LINCO	CONTI	5500	462	A	4	325	376	391	385	374
68	LINCO	MARK3	5000	462	A	4	105	122	127	125	122
68	MERCU	MONTE	3500	200	A	1	104	100	102	99	94
68	MERCU	MONTE	3500	200	S3	1	8	8	8	8	7
68	MERCU	MONTE	3500	200	S4	1	2	2	2	2	1
68	MERCU	MONTE	3500	302	A	2	1030	996	1012	983	933
68	MERCU	MONTE	3500	302	S3	2	85	82	83	81	77
68	MERCU	MONTE	3500	302	S4	2	21	20	21	20	19
68	MERCU	MONTR	4000	390	A	2	661	639	650	631	599
68	MERCU	MONTR	4000	390	S3	2	2	2	2	2	2
68	MERCU	MONTC	4000	390	A	2	162	157	159	155	147
68	MERCU	MONTC	4000	390	S3	2	0	0	0	0	0
68	MERCU	MARCU	4000	390	A	4	206	200	203	197	187
68	MERCU	COUGA	3500	302	A	2	1096	1060	1077	1046	993
68	MERCU	COUGA	3500	302	S3	2	132	128	130	126	120
68	MERCU	COUGA	3500	302	S4	2	34	32	33	32	30
68	MERCU	STAWA	0	0	0	0	707	684	695	675	641
68	OLDSM	F-85	3500	250	A	1	78	86	89	89	87
68	OLDSM	F-85	3500	250	S3	1	2	2	3	3	2
68	OLDSM	F-85	3500	250	S4	1	4	5	5	5	5
68	OLDSM	F-85	3500	350	A	1	165	182	186	187	183
68	OLDSM	F-85	3500	350	A	2	79	87	90	89	88
68	OLDSM	F-85	3500	350	S3	2	26	29	30	30	29
68	OLDSM	F-85	3500	350	S4	2	48	54	56	55	54
68	OLDSM	F-85	3500	400	A	4	313	346	358	356	349
68	OLDSM	F-85	3500	400	S3	4	10	11	12	12	11
68	OLDSM	F-85	3500	400	S4	4	19	21	22	22	21
68	OLDSM	DELMO	4000	350	A	2	994	1100	1138	1130	1109
68	OLDSM	DELMO	4000	350	S3	2	2	3	3	3	3
68	OLDSM	DELTA	4500	455	A	4	796	881	911	905	888
68	OLDSM	98	4500	455	A	4	804	890	920	914	897
68	OLDSM	TORON	4500	455	A	4	217	240	248	246	242

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	OLDSM	STAWA	0	0	0	0	378	418	432	429	421
68	PLYMO	VALIA	3000	170	A	1	644	626	625	621	613
68	PLYMO	VALIA	3000	170	S3	1	148	144	143	143	141
68	PLYMO	VALIA	3000	273	A	2	57	55	55	55	54
68	PLYMO	VALIA	3000	273	S3	2	13	12	12	12	12
68	PLYMO	BELVE	3500	225	A	1	193	187	187	186	183
68	PLYMO	BELVE	3500	225	S3	1	15	15	15	14	14
68	PLYMO	BELVE	3500	225	S4	1	30	29	29	29	28
68	PLYMO	BELVE	3500	273	A	2	1442	1402	1399	1392	1372
68	PLYMO	BELVE	3500	273	S3	2	116	112	112	112	110
68	PLYMO	BELVE	3500	273	S4	2	226	220	220	218	215
68	PLYMO	FURY	4000	225	A	1	75	73	72	72	71
68	PLYMO	FURY	4000	225	S3	1	2	2	2	2	2
68	PLYMO	FURY	4000	318	A	2	3059	2973	2968	2953	2911
68	PLYMO	FURY	4000	318	S3	2	97	95	94	94	93
68	PLYMO	VIP	4000	318	A	2	138	135	134	134	132
68	PLYMO	BARRA	3000	225	A	1	92	89	89	89	87
68	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	6
68	PLYMO	BARRA	3000	225	S4	1	10	9	9	9	9
68	PLYMO	BARRA	3000	318	A	2	234	228	227	226	223
68	PLYMO	BARRA	3000	318	S3	2	18	17	17	17	17
68	PLYMO	BARRA	3000	318	S4	2	25	24	24	24	24
68	PLYMO	BARRA	3500	340	A	4	8	8	8	8	7
68	PLYMO	BARRA	3500	340	S3	4	0	0	0	0	0
68	PLYMO	BARRA	3500	340	S4	4	0	0	0	0	0
68	PLYMO	STAWA	0	0	0	0	833	810	808	804	793
68	PONTI	TEMPE	3500	250	A	1	380	412	425	419	408
68	PONTI	TEMPE	3500	250	S3	1	32	35	36	35	34
68	PONTI	TEMPE	3500	250	S4	1	48	52	54	53	51
68	PONTI	TEMPE	3500	350	A	2	1986	2159	2225	2194	2135
68	PONTI	TEMPE	3500	350	S3	2	168	183	188	186	181
68	PONTI	TEMPE	3500	350	S4	2	252	274	283	279	271
68	PONTI	TEMPE	3500	400	A	4	116	126	130	128	125
68	PONTI	TEMPE	3500	400	S3	4	24	26	26	26	25
68	PONTI	TEMPE	3500	400	S4	4	14	16	16	16	15
68	PONTI	CATAL	4500	400	A	4	2191	2381	2453	2420	2354
68	PONTI	CATAL	4500	400	S3	4	15	16	17	17	16
68	PONTI	EXECU	4500	400	A	4	283	308	317	313	305
68	PONTI	EXECU	4500	400	S3	4	2	2	2	2	2
68	PONTI	BONNE	4500	400	A	4	875	951	980	966	940
68	PONTI	GRANP	4500	400	A	4	464	504	520	513	499
68	PONTI	FIREB	3500	250	A	1	104	114	117	115	112
68	PONTI	FIREB	3500	250	S3	1	20	22	23	22	22
68	PONTI	FIREB	3500	250	S4	1	25	27	28	28	27
68	PONTI	FIREB	3500	350	A	2	501	545	561	554	539

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
68	PONTI	FIREB	3500	350	S3	2	99	107	111	109	106
68	PONTI	FIREB	3500	350	S4	2	123	133	137	135	132
68	PONTI	STAWA	0	0	0	0	616	669	690	680	662

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	AMMOT	AMERI	3000	199	A	1	437	483	498	479	447
67	AMMOT	AMERI	3000	199	S3	1	257	284	293	282	263
67	AMMOT	AMERI	3000	199	S4	1	10	11	12	11	11
67	AMMOT	REBEL	3500	232	A	1	400	443	456	439	409
67	AMMOT	REBEL	3500	232	S3	1	48	53	55	53	49
67	AMMOT	REBEL	3500	232	S4	1	5	6	6	6	5
67	AMMOT	REBEL	3500	290	A	2	338	374	386	371	346
67	AMMOT	REBEL	3500	290	S3	2	40	45	46	44	41
67	AMMOT	REBEL	3500	290	S4	2	4	5	5	5	4
67	AMMOT	AMBAS	3500	232	A	1	106	117	121	116	108
67	AMMOT	AMBAS	3500	232	S3	1	4	4	4	4	4
67	AMMOT	AMBAS	3500	290	A	2	414	458	472	454	423
67	AMMOT	AMBAS	3500	290	S3	2	16	16	19	18	17
67	AMMOT	MARLI	3500	232	A	1	20	22	23	22	21
67	AMMOT	MARLI	3500	232	S3	1	0	0	0	0	0
67	AMMOT	MARLI	3500	232	S4	1	0	0	0	0	0
67	AMMOT	MARLI	3500	290	A	2	126	140	144	138	129
67	AMMOT	MARLI	3500	290	S3	2	2	2	3	2	2
67	AMMOT	MARLI	3500	290	S4	2	5	5	5	5	5
67	BUICK	SPECI	3500	225	A	1	123	135	134	133	130
67	BUICK	SPECI	3500	225	S3	1	4	5	5	5	5
67	BUICK	SPECI	3500	225	S4	1	1	2	2	2	2
67	BUICK	SPECI	3500	300	A	2	1096	1203	1199	1187	1159
67	BUICK	SPECI	3500	300	S3	2	42	46	46	46	45
67	BUICK	SPECI	3500	300	S4	2	17	19	18	18	18
67	BUICK	LESAB	4000	340	A	2	1140	1251	1247	1234	1205
67	BUICK	LESAB	4000	340	S3	2	1	1	1	1	1
67	BUICK	WILDC	4500	430	A	4	485	532	530	525	513
67	BUICK	WILDC	4500	430	S3	4	0	0	0	0	0
67	BUICK	ELECT	4500	430	A	4	825	906	902	893	872
67	BUICK	ELECT	4500	430	S3	4	0	0	0	0	0
67	BUICK	RIVIE	4500	430	A	4	321	353	351	348	340
67	BUICK	STAWA	0	0	0	0	214	235	234	232	226
67	CADIL	CALAI	5000	429	A	4	175	192	200	198	195
67	CADIL	DEVIL	5000	429	A	4	1218	1338	1392	1361	1362
67	CADIL	FLEET	5000	429	A	4	147	161	168	166	164
67	CADIL	ELDOR	5000	429	A	4	196	215	224	222	219
67	CHEVR	CORVA	2750	164	A	2	149	148	146	143	136
67	CHEVR	CORVA	2750	164	S3	2	38	37	37	36	34
67	CHEVR	CORVA	2750	164	S4	2	32	32	32	31	29
67	CHEVR	CHEV2	3000	153	A	1	34	34	33	32	31
67	CHEVR	CHEV2	3000	153	S3	1	12	12	12	12	11
67	CHEVR	CHEV2	3000	153	S4	1	2	2	2	2	2
67	CHEVR	CHEV2	3000	194	A	1	430	428	422	411	391
67	CHEVR	CHEV2	3000	194	S3	1	161	160	158	154	146

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	CHEVR	CHEV2	3000	194	S4	1	35	35	35	34	32
67	CHEVR	CHEV2	3000	283	A	2	150	149	147	143	136
67	CHEVR	CHEV2	3000	283	S3	2	56	55	55	53	51
67	CHEVR	CHEV2	3000	283	S4	2	12	12	12	11	11
67	CHEVR	CHEVE	3000	230	A	1	468	465	459	447	425
67	CHEVR	CHEVE	3000	230	S3	1	99	99	97	95	90
67	CHEVR	CHEVE	3000	230	S4	1	102	101	100	97	93
67	CHEVR	CHEVE	3500	283	A	2	1641	1632	1611	1568	1491
67	CHEVR	CHEVE	3500	283	S3	2	349	347	343	334	317
67	CHEVR	CHEVE	3500	283	S4	2	359	357	352	343	326
67	CHEVR	BISCA	3500	250	A	1	73	72	71	69	66
67	CHEVR	BISCA	3500	250	S3	1	8	8	7	7	7
67	CHEVR	BISCA	3500	250	S4	1	0	0	0	0	0
67	CHEVR	BISCA	4000	283	A	2	650	647	638	621	591
67	CHEVR	BISCA	4000	283	S3	2	71	71	70	68	65
67	CHEVR	BISCA	4000	283	S4	2	8	8	8	8	7
67	CHEVR	BELAI	4000	250	A	1	138	137	135	132	125
67	CHEVR	BELAI	4000	250	S3	1	15	15	14	14	13
67	CHEVR	BELAI	4000	250	S4	1	1	1	1	1	1
67	CHEVR	BELAI	4000	283	A	2	1230	1224	1208	1176	1118
67	CHEVR	BELAI	4000	283	S3	2	136	135	133	129	123
67	CHEVR	BELAI	4000	283	S4	2	16	16	16	15	15
67	CHEVR	IMPAL	4000	250	A	1	528	525	518	504	479
67	CHEVR	IMPAL	4000	250	S3	1	58	58	57	55	53
67	CHEVR	IMPAL	4000	250	S4	1	7	7	7	6	6
67	CHEVR	IMPAL	4000	283	A	2	4701	4675	4614	4491	4271
67	CHEVR	IMPAL	4000	283	S3	2	519	516	509	496	471
67	CHEVR	IMPAL	4000	283	S4	2	63	63	62	60	57
67	CHEVR	CAPRI	4000	283	A	2	997	992	979	953	906
67	CHEVR	CAPRI	4000	283	S3	2	110	109	108	105	100
67	CHEVR	CAPRI	4000	283	S4	2	13	13	13	12	12
67	CHEVR	CAMER	3000	230	A	1	268	266	263	256	243
67	CHEVR	CAMER	3000	230	S3	1	106	105	104	101	96
67	CHEVR	CAMER	3000	230	S4	1	102	102	100	98	93
67	CHEVR	CAMER	3500	327	A	2	739	735	726	706	672
67	CHEVR	CAMER	3500	327	S3	2	293	291	288	280	266
67	CHEVR	CAMER	3500	327	S4	2	283	281	277	270	257
67	CHEVR	CORVE	3500	327	A	4	21	21	21	20	19
67	CHEVR	CORVE	3500	327	S3	4	4	4	3	3	3
67	CHEVR	CORVE	3500	327	S4	4	187	186	184	179	170
67	CHEVR	STAWA	0	0	0	0	1859	1849	1825	1777	1689
67	CHRYS	NEWPC	4000	383	A	2	1505	1718	1714	1703	1676
67	CHRYS	NEWPC	4000	383	S3	2	4	5	5	5	5
67	CHRYS	300	4500	440	A	4	281	320	320	318	312
67	CHRYS	300	4500	440	S3	4	0	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	CHRYS	NEWYO	4500	440	A	4	463	551	550	546	538
67	DODGE	DART	3000	170	A	1	722	721	719	713	696
67	DODGE	DART	3000	170	S3	1	146	146	146	144	141
67	DODGE	DART	3000	170	S4	1	14	14	14	13	13
67	DODGE	DART	3000	273	A	2	225	225	224	222	217
67	DODGE	DART	3000	273	S3	2	45	45	45	45	44
67	DODGE	DART	3000	273	S4	2	4	4	4	4	4
67	DODGE	CORON	3500	225	A	1	145	145	144	143	139
67	DODGE	CORON	3500	225	S3	1	9	9	9	9	9
67	DODGE	CORON	3500	225	S4	1	2	2	2	2	2
67	DODGE	CORON	3500	273	A	2	1096	1095	1092	1082	1056
67	DODGE	CORON	3500	273	S3	2	71	71	70	70	68
67	DODGE	CORON	3500	273	S4	2	20	20	20	19	19
67	DODGE	POLAR	4000	318	A	2	378	377	376	373	364
67	DODGE	POLAR	4000	318	S3	2	7	7	7	7	7
67	DODGE	POLAR	4000	318	S3	2	0	0	0	0	0
67	DODGE	POLAR	4000	383	A	2	252	251	251	248	243
67	DODGE	POLAR	4000	383	S3	2	5	5	5	5	4
67	DODGE	POLAR	4000	383	S4	2	0	0	0	0	0
67	DODGE	MONAC	4000	383	A	2	214	214	213	211	206
67	DODGE	MONAC	4000	383	A	4	71	71	71	70	68
67	DODGE	CHARG	4000	318	A	2	236	236	236	233	228
67	DODGE	CHARG	4000	318	S3	2	4	4	4	4	4
67	DODGE	CHARG	4000	318	S4	2	15	15	15	15	15
67	DODGE	STAWA	0	0	0	0	522	521	520	515	503
67	FORD	FALCO	3000	170	A	1	532	527	515	494	457
67	FORD	FALCO	3000	170	S3	1	243	241	236	226	209
67	FORD	FALCO	3000	289	A	2	180	178	174	167	155
67	FORD	FALCO	3000	289	S3	2	82	81	79	76	70
67	FORD	FAIRL	3000	200	A	1	258	255	249	239	221
67	FORD	FAIRL	3000	200	S3	1	43	43	42	40	37
67	FORD	FAIRL	3000	200	S4	1	14	14	13	13	12
67	FORD	FAIRL	3000	289	A	2	1417	1403	1372	1314	1218
67	FORD	FAIRL	3000	289	S3	2	241	239	233	223	207
67	FORD	FAIRL	3000	289	S4	2	78	77	76	73	67
67	FORD	CUSTO	3500	240	A	1	84	83	81	78	72
67	FORD	CUSTO	3500	240	S3	1	5	5	5	5	4
67	FORD	CUSTO	4000	289	A	2	1565	1549	1515	1451	1345
67	FORD	CUSTO	4000	289	S3	2	101	100	98	94	87
67	FORD	GALAX	4000	240	A	1	223	221	216	207	192
67	FORD	GALAX	4000	240	S3	1	14	14	14	13	12
67	FORD	GALAX	4000	289	A	2	4159	4117	4027	3857	3573
67	FORD	GALAX	4000	289	S3	2	270	267	261	250	232
67	FORD	LTD	4000	240	A	1	58	57	56	54	50
67	FORD	LTD	4000	240	S3	1	3	3	3	3	3

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	FORD	LTD	4000	289	A	2	1083	1073	1049	1005	931
67	FORD	LTD	4000	289	S3	2	70	69	68	65	60
67	FORD	MUSTA	3000	200	A	1	962	952	931	892	826
67	FORD	MUSTA	3000	200	S3	1	353	349	342	327	303
67	FORD	MUSTA	3000	200	S4	1	103	102	100	96	89
67	FORD	MUSTA	3000	289	A	2	2244	2222	2173	2081	1928
67	FORD	MUSTA	3000	289	S3	2	824	816	798	764	708
67	FORD	MUSTA	3000	289	S4	2	241	239	234	224	207
67	FORD	TBIRD	4500	390	A	4	727	720	704	674	625
67	FORD	STAWA	0	0	0	0	2723	2696	2637	2525	2340
67	IMPER	CROWN	5000	440	A	4	229	262	269	263	251
67	IMPER	LEBAR	5000	440	A	4	26	30	31	31	29
67	LINCO	CONTI	5500	462	A	4	524	564	555	539	514
67	MERCU	COMET	3500	200	A	1	235	280	272	258	237
67	MERCU	COMET	3500	200	S3	1	40	48	46	44	40
67	MERCU	COMET	3500	200	S4	1	9	11	11	10	9
67	MERCU	COMET	3500	289	A	2	486	579	562	534	490
67	MERCU	COMET	3500	289	S3	2	83	99	96	92	84
67	MERCU	COMET	3500	289	S4	2	20	23	23	22	20
67	MERCU	MONTR	4000	390	A	2	673	801	778	739	679
67	MERCU	MONTR	4000	390	S3	2	5	6	6	5	5
67	MERCU	MONTC	4000	390	A	2	269	320	311	295	271
67	MERCU	MONTC	4000	390	S3	2	2	2	2	2	2
67	MERCU	COUGA	3500	289	A	2	2081	2476	2406	2285	2099
67	MERCU	COUGA	3500	289	S3	2	16	19	19	18	16
67	MERCU	STAWA	0	0	0	0	431	514	499	474	435
67	OLDSM	F-85	3500	250	A	1	101	116	115	113	108
67	OLDSM	F-85	3500	250	S3	1	3	4	4	4	3
67	OLDSM	F-85	3500	250	S4	1	5	6	6	6	6
67	OLDSM	F-85	3500	330	A	2	1396	1604	1593	1563	1497
67	OLDSM	F-85	3500	330	S3	2	50	57	57	56	54
67	OLDSM	F-85	3500	330	S4	2	80	93	92	90	86
67	OLDSM	F-85	3500	330	A	4	174	200	199	195	187
67	OLDSM	F-85	3500	330	S3	4	6	7	7	7	6
67	OLDSM	F-85	3500	330	S4	4	10	11	11	11	10
67	OLDSM	F-85	3500	400	A	4	7	8	8	8	8
67	OLDSM	F-85	3500	400	S3	4	2	3	3	2	2
67	OLDSM	F-85	3500	400	S4	4	4	4	4	4	4
67	OLDSM	DELMC	4500	330	A	2	466	536	532	522	500
67	OLDSM	DELMC	4500	425	A	2	466	536	532	522	500
67	OLDSM	DELTA	4500	425	A	2	723	831	825	809	775
67	OLDSM	98	4500	425	A	2	687	789	784	769	736
67	OLDSM	TORON	4500	425	A	2	188	216	214	210	201
67	OLDSM	STAWA	0	0	0	0	332	382	379	372	356
67	PLYMO	VALIA	3000	170	A	1	536	536	533	525	508

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
67	PLYMO	VALIA	3000	170	S3	1	168	168	167	165	159
67	PLYMO	VALIA	3000	273	A	2	45	45	45	44	42
67	PLYMO	VALIA	3000	273	S3	2	14	14	14	13	13
67	PLYMO	BELVE	3500	225	A	1	297	297	295	291	281
67	PLYMO	BELVE	3500	225	S3	1	40	39	39	39	37
67	PLYMO	BELVE	3500	225	S4	1	36	36	36	35	34
67	PLYMO	BELVE	3500	273	A	2	731	730	726	716	692
67	PLYMO	BELVE	3500	273	S3	2	98	98	97	96	93
67	PLYMO	BELVE	3500	273	S4	2	89	89	88	87	84
67	PLYMO	BELVE	3500	440	A	4	15	15	15	15	14
67	PLYMO	BELVE	3500	440	S3	4	2	2	2	2	1
67	PLYMO	BELVE	3500	440	S4	4	1	1	1	1	1
67	PLYMO	FURY	4000	225	A	1	116	116	115	114	110
67	PLYMO	FURY	4000	225	S3	1	3	3	3	3	3
67	PLYMO	FURY	4000	318	A	2	2367	2363	2351	2318	2241
67	PLYMO	FURY	4000	318	S3	2	73	73	72	71	69
67	PLYMO	VIP	4000	318	A	2	169	168	167	165	160
67	PLYMO	BARRA	3000	225	A	1	137	136	136	134	129
67	PLYMO	BARRA	3000	225	S3	1	18	18	18	16	17
67	PLYMO	BARRA	3000	225	S4	1	16	16	16	16	15
67	PLYMO	BARRA	3000	273	A	2	343	343	341	336	325
67	PLYMO	BARRA	3000	273	S3	2	46	46	45	45	43
67	PLYMO	BARRA	3000	273	S4	2	41	41	41	41	39
67	PLYMO	STAWA	0	0	0	0	636	635	631	623	602

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	AMMOT	AMERI	3000	199	A	1	712	744	715	667	593
66	AMMOT	AMERI	3000	199	S3	1	219	229	220	205	183
66	AMMOT	AMERI	3000	199	S4	1	14	14	14	13	11
66	AMMOT	CLASS	3500	232	A	1	615	642	617	576	512
66	AMMOT	CLASS	3500	232	S3	1	189	198	190	177	158
66	AMMOT	CLASS	3500	232	S4	1	12	12	12	11	10
66	AMMOT	CLASS	3500	287	A	2	190	199	191	178	158
66	AMMOT	CLASS	3500	287	S3	2	58	61	59	55	49
66	AMMOT	CLASS	3500	287	S4	2	3	3	3	3	3
66	AMMOT	CLASS	3500	327	A	2	89	93	89	83	74
66	AMMOT	CLASS	3500	327	S3	2	27	28	27	25	23
66	AMMOT	CLASS	3500	327	S4	2	1	1	1	1	1
66	AMMOT	AMBAS	3500	232	A	1	397	414	398	371	330
66	AMMOT	AMBAS	3500	232	S3	1	122	127	122	114	102
66	AMMOT	AMBAS	3500	232	S4	1	7	8	7	7	6
66	AMMOT	AMBAS	3500	287	A	2	123	128	123	115	102
66	AMMOT	AMBAS	3500	287	S3	2	37	39	38	35	31
66	AMMOT	AMBAS	3500	287	S4	2	2	2	2	2	2
66	AMMOT	AMBAS	3500	327	A	2	57	60	58	54	48
66	AMMOT	AMBAS	3500	327	S3	2	17	18	17	16	14
66	AMMOT	AMBAS	3500	327	S4	2	1	1	1	1	0
66	BUICK	SPECI	3500	225	A	1	246	245	243	237	226
66	BUICK	SPECI	3500	225	S3	1	14	14	14	14	13
66	BUICK	SPECI	3500	225	S4	1	3	3	3	3	3
66	BUICK	SPECI	3500	300	A	2	696	693	686	670	638
66	BUICK	SPECI	3500	300	S3	2	41	40	40	39	37
66	BUICK	SPECI	3500	300	S4	2	10	10	10	10	9
66	BUICK	SPECI	3500	340	A	2	403	402	398	389	370
66	BUICK	SPECI	3500	340	S3	2	23	23	23	22	21
66	BUICK	SPECI	3500	340	S4	2	6	6	5	5	5
66	BUICK	LESAB	4000	340	A	2	850	847	836	819	780
66	BUICK	LESAB	4000	340	S3	2	1	1	1	1	1
66	BUICK	LESAB	4000	340	A	4	364	363	359	351	334
66	BUICK	LESAB	4000	340	S3	4	0	0	0	0	0
66	BUICK	WILDC	4500	401	A	4	174	173	172	168	160
66	BUICK	WILDC	4500	401	S3	4	0	0	0	0	0
66	BUICK	WILDC	4500	425	A	4	407	405	401	392	373
66	BUICK	WILDC	4500	425	S3	4	0	0	0	0	0
66	BUICK	ELECT	4500	401	A	4	379	377	374	365	347
66	BUICK	ELECT	4500	401	S3	4	0	0	0	0	0
66	BUICK	ELECT	4500	425	A	4	379	377	374	365	347
66	BUICK	ELECT	4500	425	S3	4	0	0	0	0	0
66	BUICK	RIVIE	4500	401	A	4	368	366	363	354	337
66	BUICK	RIVIE	4500	401	S3	4	0	0	0	0	0
66	BUICK	STAWA	0	0	0	0	287	286	283	277	263

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CADIL	CALAI	5000	429	A	4	238	236	234	230	225
66	CADIL	DEVIL	5000	429	A	4	1247	1235	1225	1208	1180
66	CADIL	FLEET	5000	429	A	4	174	173	171	169	165
66	CADIL	ELDOR	5000	429	A	4	71	70	70	69	67
66	CHEVR	CORVA	2750	164	A	2	342	337	328	312	286
66	CHEVR	CORVA	2750	164	S3	2	96	95	92	87	80
66	CHEVR	CORVA	2750	164	S4	2	159	157	153	145	133
66	CHEVR	CORVA	2750	164	A	4	146	144	140	133	122
66	CHEVR	CORVA	2750	164	S3	4	41	40	39	37	34
66	CHEVR	CORVA	2750	164	S4	4	68	67	65	62	57
66	CHEVR	CHEV2	2750	153	A	1	25	25	24	23	21
66	CHEVR	CHEV2	2750	153	S3	1	10	10	10	9	8
66	CHEVR	CHEV2	2750	153	S4	1	2	2	2	2	2
66	CHEVR	CHEV2	3000	194	A	1	289	286	278	264	242
66	CHEVR	CHEV2	3000	194	S3	1	120	119	116	110	101
66	CHEVR	CHEV2	3000	194	S4	1	27	26	26	24	22
66	CHEVR	CHEV2	3000	230	A	1	289	286	278	264	242
66	CHEVR	CHEV2	3000	230	S3	1	120	119	116	110	101
66	CHEVR	CHEV2	3000	230	S4	1	27	26	26	24	22
66	CHEVR	CHEV2	3000	283	A	2	136	134	131	124	114
66	CHEVR	CHEV2	3000	283	S3	2	56	56	54	52	47
66	CHEVR	CHEV2	3000	283	S4	2	12	12	12	11	10
66	CHEVR	CHEV2	3000	327	A	4	82	81	79	75	69
66	CHEVR	CHEV2	3000	327	S3	4	34	34	33	31	28
66	CHEVR	CHEV2	3000	327	S4	4	7	7	7	7	6
66	CHEVR	CHEVE	3500	194	A	1	380	375	365	347	318
66	CHEVR	CHEVE	3500	194	S3	1	100	98	96	91	83
66	CHEVR	CHEVE	3500	194	S4	1	101	99	97	92	84
66	CHEVR	CHEVE	3500	230	A	1	236	233	227	216	198
66	CHEVR	CHEVE	3500	230	S3	1	62	61	59	56	52
66	CHEVR	CHEVE	3500	230	S4	1	62	62	60	57	52
66	CHEVR	CHEVE	3500	283	A	2	1038	1024	997	948	869
66	CHEVR	CHEVE	3500	283	S3	2	273	269	262	249	228
66	CHEVR	CHEVE	3500	283	S4	2	276	272	265	252	231
66	CHEVR	CHEVE	3500	327	A	4	472	466	454	432	396
66	CHEVR	CHEVE	3500	327	S3	4	124	122	119	113	104
66	CHEVR	CHEVE	3500	327	S4	4	125	124	120	114	105
66	CHEVR	CHEVE	3500	396	A	4	236	233	227	216	198
66	CHEVR	CHEVE	3500	396	S3	4	62	61	59	56	52
66	CHEVR	CHEVE	3500	396	S4	4	62	62	60	57	52
66	CHEVR	BISCA	3500	250	A	1	130	128	124	118	108
66	CHEVR	BISCA	3500	250	S3	1	19	18	18	17	16
66	CHEVR	BISCA	3500	250	S4	1	3	3	3	2	2
66	CHEVR	BISCA	3500	283	A	2	435	429	418	397	364
66	CHEVR	BISCA	3500	283	S3	2	64	63	61	58	53

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CHEVR	BISCA	3500	283	S4	2	10	10	10	9	8
66	CHEVR	BISCA	3500	327	A	4	282	278	271	258	236
66	CHEVR	BISCA	3500	327	S3	4	41	41	40	38	34
66	CHEVR	BISCA	3500	327	S4	4	6	6	6	6	5
66	CHEVR	BISCA	3500	396	A	4	9	9	9	8	7
66	CHEVR	BISCA	3500	396	S3	4	1	1	1	1	1
66	CHEVR	BISCA	3500	396	S4	4	0	0	0	0	0
66	CHEVR	BELAI	3500	250	A	1	258	254	247	235	216
66	CHEVR	BELAI	3500	250	S3	1	38	37	36	34	31
66	CHEVR	BELAI	3500	250	S4	1	6	6	6	5	5
66	CHEVR	BELAI	4000	283	A	2	863	852	829	789	723
66	CHEVR	BELAI	4000	283	S3	2	127	125	122	116	106
66	CHEVR	BELAI	4000	283	S4	2	21	20	20	19	17
66	CHEVR	BELAI	4000	327	A	4	560	553	538	512	469
66	CHEVR	BELAI	4000	327	S3	4	82	81	79	75	69
66	CHEVR	BELAI	4000	327	S4	4	13	13	13	12	11
66	CHEVR	BELAI	4000	396	A	4	186	184	179	170	156
66	CHEVR	BELAI	4000	396	S3	4	27	27	26	25	23
66	CHEVR	BELAI	4000	396	S4	4	4	4	4	4	3
66	CHEVR	IMPAL	3500	250	A	1	855	844	821	781	716
66	CHEVR	IMPAL	3500	250	S3	1	126	124	121	115	105
66	CHEVR	IMPAL	3500	250	S4	1	21	20	20	19	17
66	CHEVR	IMPAL	3500	283	A	2	2863	2826	2750	2615	2398
66	CHEVR	IMPAL	3500	283	S3	2	422	417	406	386	354
66	CHEVR	IMPAL	3500	283	S4	2	70	69	67	64	59
66	CHEVR	IMPAL	3500	327	A	4	1859	1835	1786	1698	1557
66	CHEVR	IMPAL	3500	327	S3	4	274	271	263	250	230
66	CHEVR	IMPAL	3500	327	S4	4	45	45	43	41	38
66	CHEVR	IMPAL	3500	396	A	4	619	611	595	566	519
66	CHEVR	IMPAL	3500	396	S3	4	91	90	87	83	76
66	CHEVR	IMPAL	3500	396	S4	4	15	15	14	13	12
66	CHEVR	CAPRI	4000	283	A	2	379	374	364	346	318
66	CHEVR	CAPRI	4000	283	S3	2	56	55	53	51	46
66	CHEVR	CAPRI	4000	283	S4	2	9	9	8	8	7
66	CHEVR	CAPRI	4000	327	A	4	506	499	486	462	424
66	CHEVR	CAPRI	4000	327	S3	4	74	73	71	68	62
66	CHEVR	CAPRI	4000	327	S4	4	12	12	11	11	10
66	CHEVR	CAPRI	4000	396	A	4	253	249	243	231	212
66	CHEVR	CAPRI	4000	396	S3	4	37	36	35	34	31
66	CHEVR	CAPRI	4000	396	S4	4	6	6	5	5	5
66	CHEVR	CAPRI	4000	427	A	4	126	124	121	115	106
66	CHEVR	CAPRI	4000	427	S3	4	18	18	17	17	15
66	CHEVR	CAPRI	4000	427	S4	4	3	3	2	2	2
66	CHEVR	CAMER	3500	230	A	1	67	66	65	61	56
66	CHEVR	CAMER	3500	230	S3	1	17	17	17	16	14

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	CHEVR	CAMER	3500	230	S4	1	18	17	17	16	15
66	CHEVR	CAMER	3500	283	A	2	191	189	184	175	160
66	CHEVR	CAMER	3500	283	S3	2	50	49	48	46	42
66	CHEVR	CAMER	3500	283	S4	2	51	50	49	46	42
66	CHEVR	CORVE	3500	327	A	4	16	16	15	14	13
66	CHEVR	CORVE	3500	327	S3	4	3	3	3	3	3
66	CHEVR	CORVE	3500	327	S4	4	166	164	159	152	139
66	CHEVR	CORVE	3500	427	A	4	4	4	3	3	3
66	CHEVR	CORVE	3500	427	S3	4	0	0	0	0	0
66	CHEVR	CORVE	3500	427	S4	4	41	41	39	38	34
66	CHEVR	STAWA	0	0	0	0	2278	2248	2188	2081	1908
66	CHRYS	NEWPO	4000	383	A	2	1764	1760	1749	1721	1658
66	CHRYS	NEWPO	4000	383	S3	2	7	7	7	6	6
66	CHRYS	300	4500	383	A	4	458	457	454	447	431
66	CHRYS	300	4500	383	S3	4	1	1	1	1	1
66	CHRYS	NEWYO	4500	440	A	4	564	563	559	550	530
66	CHRYS	NEWYO	4500	440	S3	4	2	2	2	2	2
66	CHRYS	STAWA	0	0	0	0	224	223	222	218	210
66	DODGE	DART	3000	170	A	1	570	566	563	550	520
66	DODGE	DART	3000	170	S3	1	128	128	127	124	117
66	DODGE	DART	3000	170	S4	1	11	11	11	10	10
66	DODGE	DART	3000	225	A	1	503	502	497	485	459
66	DODGE	DART	3000	225	S3	1	113	113	112	109	103
66	DODGE	DART	3000	225	S4	1	10	10	9	9	9
66	DODGE	DART	3000	273	A	2	185	184	182	178	168
66	DODGE	DART	3000	273	S3	2	41	41	41	40	38
66	DODGE	DART	3000	273	S4	2	3	3	3	3	3
66	DODGE	CORON	3500	225	A	1	353	352	349	341	322
66	DODGE	CORON	3500	225	S3	1	41	41	40	39	37
66	DODGE	CORON	3500	225	S4	1	10	10	10	9	9
66	DODGE	CORON	3500	273	A	1	573	572	567	553	523
66	DODGE	CORON	3500	273	S3	1	67	66	66	64	61
66	DODGE	CORON	3500	273	S4	1	16	16	16	15	14
66	DODGE	CORON	3500	318	A	2	516	515	510	498	470
66	DODGE	CORON	3500	318	S3	2	60	60	59	58	55
66	DODGE	CORON	3500	318	S4	2	14	14	14	14	13
66	DODGE	CORON	3500	361	A	2	277	276	274	267	252
66	DODGE	CORON	3500	361	S3	2	32	32	32	31	29
66	DODGE	CORON	3500	361	S4	2	7	7	7	7	7
66	DODGE	CORON	3500	383	A	2	133	133	132	129	122
66	DODGE	CORON	3500	383	S3	2	15	15	15	15	14
66	DODGE	CORON	3500	383	S4	2	3	3	3	3	3
66	DODGE	CORON	3500	426	A	4	57	57	56	55	52
66	DODGE	CORON	3500	426	S3	4	6	6	6	6	6
66	DODGE	CORON	3500	426	S4	4	1	1	1	1	1

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	DODGE	MONAC	4000	383	A	2	253	252	250	244	231
66	DODGE	MONAC	4000	383	S3	2	1	1	1	1	1
66	DODGE	MONAC	4000	383	A	4	126	126	125	122	115
66	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
66	DODGE	MONAC	4000	440	A	4	42	42	41	40	38
66	DODGE	MONAC	4000	440	S3	4	0	0	0	0	0
66	DODGE	CHARG	4000	318	A	2	242	241	239	233	220
66	DODGE	CHARG	4000	318	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	361	A	2	40	40	39	38	36
66	DODGE	CHARG	4000	361	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	383	A	2	100	100	99	97	91
66	DODGE	CHARG	4000	383	S3	2	0	0	0	0	0
66	DODGE	CHARG	4000	426	A	4	20	20	19	19	18
66	DODGE	CHARG	4000	426	S3	4	0	0	0	0	0
66	DODGE	STAWA	0	0	0	0	830	828	821	801	757
66	FORD	FALCO	3000	170	A	1	38	37	35	32	29
66	FORD	FALCO	3000	170	S3	1	32	31	30	27	24
66	FORD	FALCO	3000	200	A	1	36	35	34	31	27
66	FORD	FALCO	3000	200	S3	1	30	30	28	26	23
66	FORD	FALCO	3000	289	A	2	656	642	615	565	502
66	FORD	FALCO	3000	289	S3	2	547	535	512	475	418
66	FORD	FAIRL	3000	200	A	1	342	334	320	297	262
66	FORD	FAIRL	3000	200	S3	1	31	30	29	27	23
66	FORD	FAIRL	3000	200	S4	1	77	75	72	67	59
66	FORD	FAIRL	3500	289	A	2	859	840	804	745	657
66	FORD	FAIRL	3500	289	S3	2	78	76	73	67	59
66	FORD	FAIRL	3500	289	S4	2	194	190	182	168	148
66	FORD	FAIRL	3500	390	A	2	600	587	562	521	459
66	FORD	FAIRL	3500	390	S3	2	54	53	51	47	41
66	FORD	FAIRL	3500	390	S4	2	136	133	127	118	104
66	FORD	FAIRL	3500	390	A	4	200	195	187	173	153
66	FORD	FAIRL	3500	390	S3	4	18	17	17	15	13
66	FORD	FAIRL	3500	390	S4	4	45	44	42	39	34
66	FORD	CUSTO	3500	240	A	1	228	223	213	198	174
66	FORD	CUSTO	3500	240	S3	1	25	25	24	22	19
66	FORD	CUSTO	4000	289	A	2	1051	1028	985	912	804
66	FORD	CUSTO	4000	289	S3	2	118	115	110	102	90
66	FORD	CUSTO	4000	352	A	2	640	625	599	555	489
66	FORD	CUSTO	4000	352	S3	2	71	70	67	62	55
66	FORD	CUSTO	4000	390	A	2	170	166	159	148	130
66	FORD	CUSTO	4000	390	S3	2	19	18	17	16	14
66	FORD	CUSTO	4000	427	A	4	21	20	19	18	16
66	FORD	CUSTO	4000	427	S3	4	2	2	2	2	1
66	FORD	CUSTO	4000	428	A	4	21	20	19	18	16
66	FORD	CUSTO	4000	428	S3	4	2	2	2	2	1

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	FORD	GALAX	4000	240	A	1	477	466	447	414	365
66	FORD	GALAX	4000	240	S3	1	53	52	50	46	41
66	FORD	GALAX	4000	289	A	2	2199	2151	2060	1908	1682
66	FORD	GALAX	4000	289	S3	2	247	241	231	214	189
66	FORD	GALAX	4000	352	A	2	1338	1309	1253	1161	1024
66	FORD	GALAX	4000	352	S3	2	150	147	140	130	115
66	FORD	GALAX	4000	390	A	2	356	349	334	309	273
66	FORD	GALAX	4000	390	S3	2	40	39	37	34	30
66	FORD	GALAX	4000	427	A	4	44	43	41	38	34
66	FORD	GALAX	4000	427	S3	4	5	4	4	4	3
66	FORD	GALAX	4000	428	A	4	44	43	41	38	34
66	FORD	GALAX	4000	428	S3	4	5	4	4	4	3
66	FORD	LTD	4000	240	A	1	104	101	97	90	79
66	FORD	LTD	4000	240	S3	1	11	11	10	10	8
66	FORD	LTD	4000	289	A	2	480	469	449	416	367
66	FORD	LTD	4000	289	S3	2	53	52	50	46	41
66	FORD	LTD	4000	352	A	2	292	285	273	253	223
66	FORD	LTD	4000	352	S3	2	32	32	30	28	25
66	FORD	LTD	4000	390	A	2	77	76	72	67	59
66	FORD	LTD	4000	390	S3	2	8	8	8	7	6
66	FORD	LTD	4000	427	A	4	9	9	9	8	7
66	FORD	LTD	4000	427	S3	4	1	1	1	0	0
66	FORD	LTD	4000	428	A	4	9	9	9	8	7
66	FORD	LTD	4000	428	S3	4	1	1	1	0	0
66	FORD	MUSTA	3500	200	A	1	1549	1515	1451	1344	1185
66	FORD	MUSTA	3500	200	S3	1	742	726	695	644	568
66	FORD	MUSTA	3500	200	S4	1	175	171	164	152	134
66	FORD	MUSTA	3500	289	A	2	2166	2119	2029	1880	1657
66	FORD	MUSTA	3500	289	S3	2	1038	1015	972	901	794
66	FORD	MUSTA	3500	289	S4	2	244	239	229	212	187
66	FORD	TBIRD	4500	390	A	4	655	641	614	569	501
66	FORD	TBIRD	4500	428	A	4	72	71	68	63	55
66	FORD	STAWA	0	0	0	4	2904	2841	2721	2520	2222
66	IMPER	CROWN	5500	440	A	4	167	162	158	151	139
66	IMPER	LEBAR	5500	440	A	4	22	21	21	20	18
66	LINCO	CONTI	5500	462	A	4	573	565	549	522	483
66	MERCU	COMET	3500	200	A	1	419	407	386	355	311
66	MERCU	COMET	3500	200	S3	1	117	113	107	99	87
66	MERCU	COMET	3500	200	S4	1	45	44	42	38	34
66	MERCU	COMET	3500	289	A	2	389	378	359	329	289
66	MERCU	COMET	3500	289	S3	2	108	105	100	92	80
66	MERCU	COMET	3500	289	S3	2	42	41	39	36	31
66	MERCU	COMET	3500	390	A	4	346	336	319	293	257
66	MERCU	COMET	3500	390	S3	4	96	93	89	81	71
66	MERCU	COMET	3500	390	S4	4	38	36	35	32	28

AUTOMOTIVE TESTING LABORATORIES, INC.
19900 E. COLFAX AVENUE, AURORA, COLO.

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	MERCU	MONTR	4500	390	A	4	764	742	705	648	568
66	MERCU	MONTR	4500	390	S3	4	14	13	12	11	10
66	MERCU	MONTC	4500	390	A	4	433	421	400	367	322
66	MERCU	MONTC	4500	390	S3	4	7	7	7	6	5
66	MERCU	STAWA	0	0	0	0	848	824	782	719	631
66	OLDSM	F-85	3500	250	A	1	128	127	125	119	109
66	OLDSM	F-85	3500	250	S3	1	6	6	6	5	5
66	OLDSM	F-85	3500	250	S4	1	9	9	9	9	8
66	OLDSM	F-85	3500	330	A	2	1040	1032	1013	970	886
66	OLDSM	F-85	3500	330	S3	2	51	51	50	48	43
66	OLDSM	F-85	3500	330	S4	2	78	77	76	73	66
66	OLDSM	F-85	3500	400	A	4	500	497	488	467	427
66	OLDSM	F-85	3500	400	S3	4	24	24	24	23	21
66	OLDSM	F-85	3500	400	S4	4	37	37	36	35	32
66	OLDSM	JETST	4000	330	A	2	172	171	168	161	147
66	OLDSM	JETST	4000	330	S3	2	0	0	0	0	0
66	OLDSM	JETST	4000	330	A	4	74	73	72	69	63
66	OLDSM	JETST	4000	330	S3	4	0	0	0	0	0
66	OLDSM	DYNAM	4500	425	A	4	740	735	721	690	631
66	OLDSM	DYNAM	4500	425	S3	4	2	2	2	2	1
66	OLDSM	DELTA	4500	425	A	4	1047	1039	1020	976	892
66	OLDSM	DELTA	4500	425	S3	4	3	3	3	2	2
66	OLDSM	STARF	4500	425	A	4	76	76	74	71	65
66	OLDSM	STARF	4500	425	S3	4	0	0	0	0	0
66	OLDSM	98	4500	425	A	4	836	830	815	780	713
66	OLDSM	TORON	4500	425	A	4	315	313	307	294	269
66	OLDSM	STAWA	0	0	0	0	358	356	349	334	305
66	PLYMO	VALIA	3000	170	A	1	435	433	427	413	384
66	PLYMO	VALIA	3000	170	S3	1	159	158	156	151	140
66	PLYMO	VALIA	3000	225	A	1	340	338	333	322	300
66	PLYMO	VALIA	3000	225	S3	1	124	123	122	118	109
66	PLYMO	VALIA	3000	273	A	2	74	74	73	70	66
66	PLYMO	VALIA	3000	273	S3	2	27	27	26	25	24
66	PLYMO	BELVE	3500	225	A	1	335	333	329	318	296
66	PLYMO	BELVE	3500	225	S3	1	59	59	58	56	52
66	PLYMO	BELVE	3500	225	S4	1	19	19	19	18	17
66	PLYMO	BELVE	3500	318	A	2	460	458	451	436	406
66	PLYMO	BELVE	3500	318	S3	2	81	81	79	77	71
66	PLYMO	BELVE	3500	318	S4	2	27	27	26	25	24
66	PLYMO	BELVE	3500	361	A	2	263	261	258	249	232
66	PLYMO	BELVE	3500	361	S3	2	46	46	45	44	41
66	PLYMO	BELVE	3500	361	S4	2	15	15	15	14	13
66	PLYMO	BELVE	3500	383	A	2	131	130	129	124	116
66	PLYMO	BELVE	3500	383	S3	2	23	23	22	22	20
66	PLYMO	BELVE	3500	383	S4	2	7	7	7	7	6

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
66	PLYMO	BELVE	3500	426	A	4	125	124	122	118	110
66	PLYMO	BELVE	3500	426	S3	4	22	21	21	20	19
66	PLYMO	BELVE	3500	426	S4	4	7	7	7	7	6
66	PLYMO	FURY	4000	225	A	1	166	165	163	158	147
66	PLYMO	FURY	4000	225	S3	1	12	12	12	12	11
66	PLYMO	FURY	4000	225	S4	1	2	2	2	2	2
66	PLYMO	FURY	4000	318	A	2	1191	1185	1168	1129	1051
66	PLYMO	FURY	4000	318	S3	2	91	90	89	86	80
66	PLYMO	FURY	4000	318	S4	2	20	20	20	19	18
66	PLYMO	FURY	4000	383	A	4	714	711	701	677	631
66	PLYMO	FURY	4000	383	S3	4	54	54	53	51	48
66	PLYMO	FURY	4000	383	S4	4	12	12	12	11	11
66	PLYMO	FURY	4000	440	A	4	309	308	303	293	273
66	PLYMO	FURY	4000	440	S3	4	23	23	23	22	20
66	PLYMO	FURY	4000	440	S4	4	5	5	5	5	4
66	PLYMO	VIP	4000	318	A	2	14	14	14	13	12
66	PLYMO	VIP	4000	383	A	4	115	114	112	109	101
66	PLYMO	VIP	4000	440	A	4	57	57	56	54	50
66	PLYMO	BARRA	3000	170	A	1	24	23	23	22	21
66	PLYMO	BARRA	3000	170	S3	1	3	3	3	3	3
66	PLYMO	BARRA	3000	170	S4	1	4	4	4	4	4
66	PLYMO	BARRA	3000	225	A	1	45	45	45	43	40
66	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	5
66	PLYMO	BARRA	3000	225	S4	1	9	9	9	8	8
66	PLYMO	BARRA	3500	273	A	2	170	169	167	161	150
66	PLYMO	BARRA	3500	273	S3	2	24	24	24	23	21
66	PLYMO	BARRA	3500	273	S4	2	34	33	33	32	30
66	PLYMO	STAWA	0	0	0	0	798	794	783	757	704
66	PONTI	TEMPE	3500	230	A	1	565	558	543	517	476
66	PONTI	TEMPE	3500	230	S3	1	96	95	92	88	81
66	PONTI	TEMPE	3500	230	S4	1	148	146	142	135	124
66	PONTI	TEMPE	3500	326	A	2	1670	1647	1603	1526	1406
66	PONTI	TEMPE	3500	326	S3	2	284	280	273	260	239
66	PONTI	TEMPE	3500	326	S4	2	438	432	420	400	368
66	PONTI	CATAL	4000	389	A	2	1902	1876	1825	1738	1601
66	PONTI	CATAL	4000	389	S3	2	21	21	20	19	17
66	PONTI	STARC	4500	389	A	2	394	389	379	360	332
66	PONTI	STARC	4500	389	S3	2	7	7	7	6	6
66	PONTI	BONNE	4500	389	A	4	1096	1081	1052	1001	922
66	PONTI	BONNE	4500	389	S3	4	21	20	20	19	17
66	PONTI	GRANP	4500	389	A	4	354	349	340	324	298
66	PONTI	GRANP	4500	389	S3	4	6	6	6	6	5
66	PONTI	STAWA	0	0	0	0	345	340	331	315	290

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS. TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	AMMOT	AMERI	3000	196	A	1	365	351	327	291	242
65	AMMOT	AMERI	3000	196	S3	1	155	149	139	123	102
65	AMMOT	AMERI	3000	232	A	2	243	234	218	194	161
65	AMMOT	AMERI	3000	232	S3	2	103	99	92	82	68
65	AMMOT	CLASS	3000	199	A	1	396	380	355	315	262
65	AMMOT	CLASS	3000	199	S3	1	168	161	150	134	111
65	AMMOT	CLASS	3000	232	A	2	280	269	251	223	185
65	AMMOT	CLASS	3000	232	S3	2	118	114	106	94	78
65	AMMOT	CLASS	3000	287	A	2	164	158	147	131	109
65	AMMOT	CLASS	3000	287	S3	2	69	67	62	55	46
65	AMMOT	CLASS	3000	327	A	4	93	89	83	74	61
65	AMMOT	CLASS	3000	327	S3	4	39	38	35	31	26
65	AMMOT	AMBAS	3500	232	A	2	261	251	234	208	173
65	AMMOT	AMBAS	3500	232	S3	2	110	106	99	88	73
65	AMMOT	AMBAS	3500	287	A	2	63	61	56	50	42
65	AMMOT	AMBAS	3500	287	S3	2	26	25	24	21	17
65	AMMOT	AMBAS	3500	327	A	4	36	34	32	28	23
65	AMMOT	AMBAS	3500	327	S3	4	15	14	13	12	10
65	AMMOT	MARLI	3500	327	A	4	21	20	19	16	14
65	AMMOT	MARLI	3500	327	S3	4	9	8	8	7	5
65	AMMOT	STAWA	0	0	C	0	766	736	687	611	508
65	BUICK	SPECI	3500	225	A	1	315	312	305	290	264
65	BUICK	SPECI	3500	225	S3	1	32	32	31	29	27
65	BUICK	SPECI	3500	300	A	2	941	932	910	866	788
65	BUICK	SPECI	3500	300	S3	2	96	95	93	88	80
65	BUICK	LESAB	3500	300	A	2	1147	1136	1110	1057	961
65	BUICK	LESAB	3500	300	S3	2	5	5	5	5	4
65	BUICK	WILDC	4500	401	A	4	556	550	538	512	466
65	BUICK	WILDC	4500	401	S3	4	2	2	2	2	2
65	BUICK	WILDC	4500	425	A	4	185	183	179	170	155
65	BUICK	WILDC	4500	425	S3	4	0	0	0	0	0
65	BUICK	ELECT	4500	401	A	4	514	509	497	473	431
65	BUICK	ELECT	4500	401	S3	4	2	2	2	2	2
65	BUICK	ELECT	4500	425	A	4	171	169	165	157	143
65	BUICK	ELECT	4500	425	S3	4	0	0	0	0	0
65	BUICK	RIVIE	4500	401	A	4	215	213	208	198	180
65	BUICK	RIVIE	4500	401	S3	4	1	1	1	0	0
65	BUICK	RIVIE	4500	425	A	4	71	71	69	66	60
65	BUICK	RIVIE	4500	425	S3	4	0	0	0	0	0
65	BUICK	STAWA	0	0	C	0	337	334	326	310	282
65	CADIL	CALAI	5000	429	A	4	291	288	284	278	268
65	CADIL	DEVIL	5000	429	A	4	1140	1131	1115	1089	1049
65	CADIL	FLEET	5000	429	A	4	210	208	205	200	193
65	CHEVR	CORVA	2750	164	A	2	1180	1149	1093	1002	870
65	CHEVR	CORVA	2750	164	S3	2	295	287	273	251	218

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	CHEVR	CORVA	2750	164	S4	2	747	727	691	634	550
65	CHEVR	CORVA	2750	164	A	4	393	383	364	334	290
65	CHEVR	CORVA	2750	164	S3	4	98	95	91	83	72
65	CHEVR	CORVA	2750	164	S4	4	249	242	230	211	183
65	CHEVR	CHEV2	3000	194	A	1	486	473	450	413	358
65	CHEVR	CHEV2	3000	194	S3	1	229	223	212	194	169
65	CHEVR	CHEV2	3000	194	S4	1	11	11	10	9	8
65	CHEVR	CHEV2	3000	230	A	1	419	408	388	356	309
65	CHEVR	CHEV2	3000	230	S3	1	197	192	182	167	145
65	CHEVR	CHEV2	3000	230	S4	1	10	9	9	8	7
65	CHEVR	CHEV2	3000	327	A	4	142	138	132	121	105
65	CHEVR	CHEV2	3000	327	S3	4	67	65	62	57	49
65	CHEVR	CHEV2	3000	327	S4	4	3	3	3	2	2
65	CHEVR	CHEVE	3000	194	A	1	594	578	550	504	438
65	CHEVR	CHEVE	3000	194	S3	1	197	192	183	167	145
65	CHEVR	CHEVE	3000	194	S4	1	90	88	84	77	67
65	CHEVR	CHEVE	3000	230	A	1	534	520	495	453	394
65	CHEVR	CHEVE	3000	230	S3	1	178	173	164	151	131
65	CHEVR	CHEVE	3000	230	S4	1	81	79	75	69	60
65	CHEVR	CHEVE	3000	283	A	2	1247	1214	1155	1059	920
65	CHEVR	CHEVE	3000	283	S3	2	415	404	384	352	306
65	CHEVR	CHEVE	3000	283	S4	2	190	185	176	162	140
65	CHEVR	CHEVE	3000	327	A	4	594	578	550	504	438
65	CHEVR	CHEVE	3000	327	S3	4	197	192	183	167	145
65	CHEVR	CHEVE	3000	327	S4	4	90	88	84	77	67
65	CHEVR	BISCA	3500	230	A	1	308	300	285	261	227
65	CHEVR	BISCA	3500	230	S3	1	55	53	51	46	40
65	CHEVR	BISCA	3500	230	S4	1	14	13	13	12	10
65	CHEVR	BISCA	3500	283	A	2	525	511	486	445	387
65	CHEVR	BISCA	3500	283	S3	2	93	91	86	79	69
65	CHEVR	BISCA	3500	283	S4	2	24	23	22	20	18
65	CHEVR	BISCA	3500	327	A	4	500	486	462	424	368
65	CHEVR	BISCA	3500	327	S3	4	89	87	82	75	65
65	CHEVR	BISCA	3500	327	S4	4	23	22	21	19	17
65	CHEVR	BISCA	3500	396	A	4	250	243	231	212	184
65	CHEVR	BISCA	3500	396	S3	4	44	43	41	37	32
65	CHEVR	BISCA	3500	396	S4	4	11	11	10	9	8
65	CHEVR	BISCA	3500	409	A	4	83	81	77	70	61
65	CHEVR	BISCA	3500	409	S3	4	14	14	13	12	10
65	CHEVR	BISCA	3500	409	S4	4	3	3	3	3	2
65	CHEVR	BELAI	3500	230	A	1	588	573	545	499	434
65	CHEVR	BELAI	3500	230	S3	1	105	102	97	89	77
65	CHEVR	BELAI	3500	230	S4	1	27	26	25	23	20
65	CHEVR	BELAI	4000	283	A	2	1002	976	928	851	739
65	CHEVR	BELAI	4000	283	S3	2	179	174	166	152	132

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	CHEVR	BELAI	4000	283	S4	2	46	45	43	39	34
65	CHEVR	BELAI	4000	327	A	4	954	929	883	810	704
65	CHEVR	BELAI	4000	327	S3	4	170	166	158	145	125
65	CHEVR	BELAI	4000	327	S4	4	44	43	41	37	32
65	CHEVR	BELAI	4000	396	A	4	477	464	441	405	352
65	CHEVR	BELAI	4000	396	S3	4	85	83	79	72	62
65	CHEVR	BELAI	4000	396	S4	4	22	21	20	18	16
65	CHEVR	BELAI	4000	409	A	4	159	154	147	135	117
65	CHEVR	BELAI	4000	409	S3	4	28	27	26	24	20
65	CHEVR	BELAI	4000	409	S4	4	7	7	6	6	5
65	CHEVR	IMPAL	3500	230	A	1	228	222	211	194	168
65	CHEVR	IMPAL	3500	230	S3	1	40	39	37	34	30
65	CHEVR	IMPAL	3500	230	S4	1	10	10	9	9	7
65	CHEVR	IMPAL	4000	283	A	2	389	379	360	330	287
65	CHEVR	IMPAL	4000	283	S3	2	69	67	64	59	51
65	CHEVR	IMPAL	4000	283	S4	2	18	17	16	15	13
65	CHEVR	IMPAL	4000	327	A	4	371	361	343	314	273
65	CHEVR	IMPAL	4000	327	S3	4	66	64	61	56	48
65	CHEVR	IMPAL	4000	327	S4	4	17	16	15	14	12
65	CHEVR	IMPAL	4000	396	A	4	185	180	171	157	136
65	CHEVR	IMPAL	4000	396	S3	4	33	32	30	28	24
65	CHEVR	IMPAL	4000	396	S4	4	8	8	7	7	6
65	CHEVR	IMPAL	4000	409	A	4	61	60	57	52	45
65	CHEVR	IMPAL	4000	409	S3	4	11	10	10	9	8
65	CHEVR	IMPAL	4000	409	S4	4	2	2	2	2	2
65	CHEVR	CAPRI	4000	396	A	4	537	523	497	456	396
65	CHEVR	CAPRI	4000	396	S3	4	121	118	112	102	89
65	CHEVR	CORVE	3500	327	A	4	195	190	181	166	144
65	CHEVR	CORVE	3500	327	S3	4	49	47	45	41	36
65	CHEVR	CORVE	3500	327	S4	4	123	120	114	105	91
65	CHEVR	STAWA	0	0	0	0	3703	3604	3427	3143	2730
65	CHRYS	NEWPO	4500	383	A	2	1165	1158	1140	1098	1016
65	CHRYS	NEWPO	4500	383	S3	2	8	8	8	7	7
65	CHRYS	300	4500	383	A	4	320	318	313	302	279
65	CHRYS	300	4500	383	S3	4	2	2	2	2	1
65	CHRYS	NEWYO	4500	413	A	4	485	482	475	457	423
65	CHRYS	NEWYO	4500	413	S3	4	3	3	3	3	2
65	CHRYS	STAWA	0	0	0	0	146	145	143	138	128
65	DODGE	DART	3000	170	A	1	485	480	469	443	393
65	DODGE	DART	3000	170	S3	1	146	145	142	134	119
65	DODGE	DART	3000	170	S4	1	20	20	20	19	16
65	DODGE	DART	3000	225	A	1	452	448	437	413	366
65	DODGE	DART	3000	225	S3	1	136	135	132	125	110
65	DODGE	DART	3000	225	S4	1	19	19	18	17	15
65	DODGE	DART	3000	273	A	2	193	191	187	176	156

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	DODGE	DART	3000	273	S3	2	58	58	56	53	47
65	DODGE	DART	3000	273	S4	2	8	8	8	7	6
65	DODGE	CORON	3000	225	A	1	361	358	350	330	293
65	DODGE	CORON	3000	225	S3	1	65	64	63	59	52
65	DODGE	CORON	3500	273	A	2	370	367	358	338	300
65	DODGE	CORON	3500	273	S3	2	66	66	64	61	54
65	DODGE	CORON	3500	318	A	2	439	435	425	401	356
65	DODGE	CORON	3500	318	S3	2	79	78	76	72	64
65	DODGE	CORON	3500	361	A	2	219	217	212	200	178
65	DODGE	CORON	3500	361	S3	2	39	39	38	36	32
65	DODGE	CORON	3500	383	A	4	73	72	70	66	59
65	DODGE	CORON	3500	383	S3	4	13	13	12	12	10
65	DODGE	POLAR	4000	383	A	2	364	361	352	333	295
65	DODGE	POLAR	4000	383	S3	2	7	6	6	6	5
65	DODGE	POLAR	4000	413	A	4	218	216	211	199	177
65	DODGE	POLAR	4000	413	S3	4	4	4	4	3	3
65	DODGE	POLAR	4000	426	A	4	145	144	140	133	118
65	DODGE	POLAR	4000	426	S3	4	2	2	2	2	2
65	DODGE	MONAC	4500	383	A	2	168	167	163	154	136
65	DODGE	MONAC	4500	383	S3	2	20	20	19	18	16
65	DODGE	MONAC	4500	413	A	4	101	100	98	92	82
65	DODGE	MONAC	4500	413	S3	4	1	1	1	1	1
65	DODGE	MONAC	4500	426	A	4	67	66	65	61	54
65	DODGE	MONAC	4500	426	S3	4	1	1	1	1	1
65	DODGE	STAWA	0	0	0	0	733	727	709	670	594
65	FORD	FALCO	2750	170	A	1	409	392	363	320	263
65	FORD	FALCO	2750	170	S3	1	285	273	253	223	183
65	FORD	FALCO	2750	170	S4	1	19	18	17	15	12
65	FORD	FALCO	3000	200	A	1	392	376	348	307	252
65	FORD	FALCO	3000	200	S3	1	274	262	243	214	176
65	FORD	FALCO	3000	200	S4	1	18	17	16	14	11
65	FORD	FALCO	3000	289	A	2	179	172	159	140	115
65	FORD	FALCO	3000	289	S3	2	125	120	111	98	80
65	FORD	FALCO	3000	289	S4	2	8	8	7	6	5
65	FORD	FAIRL	3000	200	A	1	477	457	424	373	307
65	FORD	FAIRL	3000	200	S3	1	176	169	156	138	113
65	FORD	FAIRL	3000	289	A	2	1094	1047	970	855	703
65	FORD	FAIRL	3000	289	S3	2	404	387	359	316	260
65	FORD	CUSTO	3500	240	A	1	291	279	258	227	187
65	FORD	CUSTO	3500	240	S3	1	40	38	35	31	26
65	FORD	CUSTO	4000	289	A	2	1174	1125	1042	919	755
65	FORD	CUSTO	4000	289	S3	2	163	156	144	127	104
65	FORD	CUSTO	4000	352	A	2	399	382	354	312	256
65	FORD	CUSTO	4000	352	S3	2	55	53	49	43	35
65	FORD	CUSTO	4000	390	A	4	352	337	312	275	226

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	FORD	CUSTO	4000	390	S3	4	48	46	43	38	31
65	FORD	CUSTO	4000	427	A	4	131	126	116	102	84
65	FORD	CUSTO	4000	427	S3	4	18	17	16	14	11
65	FORD	GALAX	3500	240	A	1	557	534	494	436	358
65	FORD	GALAX	3500	240	S3	1	77	74	68	60	49
65	FORD	GALAX	4000	289	A	2	2248	2153	1995	1759	1445
65	FORD	GALAX	4000	289	S3	2	312	299	277	244	200
65	FORD	GALAX	4000	352	A	2	764	732	678	598	491
65	FORD	GALAX	4000	352	S3	2	106	101	94	83	68
65	FORD	GALAX	4000	390	A	4	674	646	598	527	433
65	FORD	GALAX	4000	390	S3	4	93	89	83	73	60
65	FORD	GALAX	4000	427	A	4	251	241	223	197	161
65	FORD	GALAX	4000	427	S3	4	34	33	31	27	22
65	FORD	LTD	4000	240	A	1	117	112	104	91	75
65	FORD	LTD	4000	240	S3	1	16	15	14	12	10
65	FORD	LTD	4000	289	A	2	472	452	419	369	303
65	FORD	LTD	4000	289	S3	2	65	62	58	51	42
65	FORD	LTD	4000	352	A	2	160	153	142	125	103
65	FORD	LTD	4000	352	S3	2	22	21	19	17	14
65	FORD	LTD	4000	390	A	4	141	135	125	110	91
65	FORD	LTD	4000	390	S3	4	19	18	17	15	12
65	FORD	LTD	4000	427	A	4	52	50	46	41	34
65	FORD	LTD	4000	427	S3	4	7	7	6	5	4
65	FORD	MUSTA	3000	200	A	1	1111	1064	985	869	714
65	FORD	MUSTA	3000	200	S3	1	661	633	586	517	425
65	FORD	MUSTA	3000	200	S4	1	300	287	266	235	193
65	FORD	MUSTA	3000	289	A	2	2010	1925	1783	1572	1291
65	FORD	MUSTA	3000	289	S3	2	1196	1145	1061	935	768
65	FORD	MUSTA	3000	289	S4	2	558	535	495	437	359
65	FORD	TBIRD	4500	390	A	4	794	760	705	621	510
65	FORD	STAWA	0	0	0	0	3031	2903	2690	2371	1948
65	IMPER	IMPER	5500	413	A	4	217	211	202	186	161
65	LINCO	CONTI	5500	430	A	4	436	424	404	374	332
65	MERCU	COMET	3000	200	A	1	517	491	451	396	327
65	MERCU	COMET	3000	200	S3	1	213	202	186	163	134
65	MERCU	COMET	3000	200	S4	1	59	56	51	45	37
65	MERCU	COMET	3000	289	A	2	491	466	428	376	310
65	MERCU	COMET	3000	289	S3	2	202	192	176	155	128
65	MERCU	COMET	3000	289	S4	2	56	53	49	43	35
65	MERCU	MONTR	4000	390	A	2	472	448	412	361	298
65	MERCU	MONTR	4000	390	S3	2	14	13	12	10	8
65	MERCU	MONTR	4000	427	A	4	314	298	274	241	198
65	MERCU	MONTR	4000	427	S3	4	9	8	8	7	5
65	MERCU	MONTC	4000	390	A	2	273	260	239	209	173
65	MERCU	MONTC	4000	390	S3	2	8	7	7	6	5

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	MERCU	MONTC	4000	427	A	4	182	173	159	139	115
65	MERCU	MONTC	4000	427	S3	4	5	5	4	4	3
65	MERCU	STAWA	0	0	0	0	740	703	646	566	467
65	OLDSM	F-85	3500	225	A	1	122	119	114	104	88
65	OLDSM	F-85	3500	225	S3	1	8	7	7	6	5
65	OLDSM	F-85	3500	225	S4	1	11	10	10	9	8
65	OLDSM	F-85	3500	330	A	2	622	611	585	534	450
65	OLDSM	F-85	3500	330	S3	2	41	40	38	35	29
65	OLDSM	F-85	3500	330	S4	2	56	55	53	48	41
65	OLDSM	F-85	3500	330	A	4	376	369	353	323	271
65	OLDSM	F-85	3500	330	S3	4	24	24	23	21	17
65	OLDSM	F-85	3500	330	S4	4	34	33	32	29	24
65	OLDSM	F-85	3500	400	A	4	124	122	117	106	90
65	OLDSM	F-85	3500	400	S3	4	8	8	7	7	5
65	OLDSM	F-85	3500	400	S4	4	11	11	10	9	8
65	OLDSM	JETST	4000	330	A	4	465	456	437	399	336
65	OLDSM	JETST	4000	330	S3	4	2	2	2	2	1
65	OLDSM	DYN88	4500	425	A	2	969	951	910	832	700
65	OLDSM	DYN88	4500	425	S3	2	4	4	4	4	3
65	OLDSM	DEL88	4500	425	A	2	798	783	750	685	577
65	OLDSM	DEL88	4500	425	S3	2	4	3	3	3	2
65	OLDSM	STARF	4500	425	A	4	131	129	123	113	95
65	OLDSM	STARF	4500	425	S3	4	0	0	0	0	0
65	OLDSM	98	4500	425	A	4	806	791	757	692	582
65	OLDSM	98	4500	425	S3	4	4	3	3	3	2
65	OLDSM	STAWA	0	0	0	0	381	374	358	327	275
65	PLYMO	VALIA	3000	170	A	1	376	370	356	333	290
65	PLYMO	VALIA	3000	170	S3	1	159	157	152	141	123
65	PLYMO	VALIA	3000	225	A	1	266	262	253	236	205
65	PLYMO	VALIA	3000	225	S3	1	112	111	107	100	87
65	PLYMO	VALIA	3000	273	A	2	86	84	82	76	66
65	PLYMO	VALIA	3000	273	S3	2	36	36	34	32	28
65	PLYMO	BELVE	3500	225	A	1	374	369	357	332	288
65	PLYMO	BELVE	3500	225	S3	1	104	103	99	93	80
65	PLYMO	BELVE	3500	225	S4	1	19	19	19	17	15
65	PLYMO	BELVE	3500	273	A	2	171	169	163	152	132
65	PLYMO	BELVE	3500	273	S3	2	48	47	45	42	37
65	PLYMO	BELVE	3500	273	S4	2	9	9	8	8	7
65	PLYMO	BELVE	3500	318	A	2	218	215	206	193	168
65	PLYMO	BELVE	3500	318	S3	2	6	6	5	5	4
65	PLYMO	BELVE	3500	318	S4	2	11	11	11	10	8
65	PLYMO	BELVE	3500	361	A	2	163	161	156	145	126
65	PLYMO	BELVE	3500	361	S3	2	45	45	43	40	35
65	PLYMO	BELVE	3500	361	S4	2	8	8	8	7	6
65	PLYMO	BELVE	3500	383	A	4	109	107	104	96	84

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	PLYMO	BELVE	3500	383	S3	4	30	30	25	27	23
65	PLYMO	BELVE	3500	383	S4	4	5	5	5	5	4
65	PLYMO	BELVE	3500	426	A	4	54	53	52	48	42
65	PLYMO	BELVE	3500	426	S3	4	15	15	14	13	11
65	PLYMO	BELVE	3500	426	S4	4	2	2	2	2	2
65	PLYMO	FURY	4000	225	A	1	252	248	240	223	194
65	PLYMO	FURY	4000	225	S3	1	22	22	21	20	17
65	PLYMO	FURY	4000	225	S4	1	7	7	6	6	5
65	PLYMO	FURY	4000	318	A	2	1161	1145	1107	1030	896
65	PLYMO	FURY	4000	318	S3	2	105	103	100	93	81
65	PLYMO	FURY	4000	318	S4	2	33	33	32	30	26
65	PLYMO	FURY	4000	383	A	2	706	696	673	627	545
65	PLYMO	FURY	4000	383	S3	2	64	63	61	56	49
65	PLYMO	FURY	4000	383	S4	2	20	20	19	18	15
65	PLYMO	FURY	4000	426	A	4	235	232	224	209	181
65	PLYMO	FURY	4000	426	S3	4	21	21	20	18	16
65	PLYMO	FURY	4000	426	S4	4	6	6	6	6	5
65	PLYMO	BARRA	3000	170	A	1	78	76	74	69	60
65	PLYMO	BARRA	3000	170	S3	1	14	14	13	12	11
65	PLYMO	BARRA	3000	170	S4	1	22	21	21	19	17
65	PLYMO	BARRA	3000	225	A	1	37	36	35	32	28
65	PLYMO	BARRA	3000	225	S3	1	6	6	6	6	5
65	PLYMO	BARRA	3000	225	S4	1	10	10	10	9	8
65	PLYMO	BARRA	3000	273	A	2	256	252	244	227	197
65	PLYMO	BARRA	3000	273	S3	2	47	46	44	41	36
65	PLYMO	BARRA	3000	273	S4	2	73	72	69	64	56
65	PLYMO	STAWA	0	0	0	0	839	827	799	744	647
65	PONTI	TEMPE	3500	215	A	1	405	395	376	346	304
65	PONTI	TEMPE	3500	215	S3	1	71	69	66	61	53
65	PONTI	TEMPE	3500	215	S4	1	111	108	103	95	83
65	PONTI	TEMPE	3500	326	A	2	834	812	773	712	626
65	PONTI	TEMPE	3500	326	S3	2	147	143	136	126	110
65	PONTI	TEMPE	3500	326	S4	2	229	222	212	195	171
65	PONTI	TEMPE	3500	389	A	2	531	517	492	453	398
65	PONTI	TEMPE	3500	389	S3	2	94	91	87	80	70
65	PONTI	TEMPE	3500	389	S4	2	145	141	135	124	109
65	PONTI	CATAL	4000	389	A	2	1398	1360	1295	1193	1048
65	PONTI	CATAL	4000	389	S3	2	27	26	25	23	20
65	PONTI	CATAL	4000	389	S4	2	26	25	24	22	19
65	PONTI	CATAL	4000	421	A	4	599	583	555	511	449
65	PONTI	CATAL	4000	421	S3	4	11	11	10	10	8
65	PONTI	CATAL	4000	421	S4	4	11	10	10	9	8
65	PONTI	STARC	4000	389	A	2	205	200	190	175	154
65	PONTI	STARC	4000	389	S3	2	4	3	3	3	3
65	PONTI	STARC	4000	389	S4	2	3	3	3	3	2

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
65	PCNTI	STARC	4000	421	A	4	88	85	81	75	66
65	PONTI	STARC	4CCO	421	S3	4	1	1	1	1	1
65	PCNTI	STARC	4000	421	S4	4	1	1	1	1	1
65	PONTI	BCNNE	45CC	389	A	4	791	77C	733	675	593
65	PCNTI	BCNNE	4500	389	S3	4	15	15	14	13	11
65	PONTI	BONNE	450C	389	S4	4	14	14	13	12	11
65	PCNTI	BCNNE	45C0	421	A	4	339	33C	314	289	254
65	PONTI	BONNE	45CC	421	S3	4	6	6	6	5	5
65	PCNTI	BCNNE	45C0	421	S4	4	6	6	5	5	4
65	PCNTI	GRANP	45CC	389	A	4	330	321	306	282	247
65	PCNTI	GRANP	45C0	389	S3	4	6	6	6	5	4
65	PCNTI	GRANP	45CC	389	S4	4	6	6	5	5	4
65	PCNTI	GRANP	4500	421	A	4	141	137	131	12C	1C6
65	PCNTI	GRANP	45C0	421	S3	4	2	2	2	2	2
65	PONTI	GRANP	45C0	421	S4	4	2	2	2	2	1
65	PCNTI	STAWA	0	0	0	0	538	524	499	459	404

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	BUICK	ELECT	4500	401	A	4	891	859	811	746	662
64	BUICK	ELECT	4500	401	S3	4	7	6	6	6	5
64	BUICK	ELECT	4500	425	A	4	891	859	811	746	662
64	BUICK	ELECT	4500	425	S3	4	7	6	6	6	5
64	BUICK	RIVIE	4500	425	A	4	934	900	851	782	694
64	BUICK	RIVIE	4500	425	S3	4	7	7	6	6	5
64	BUICK	STAWA	0	0	0	0	1029	992	938	862	765
64	CADIL	CALAI	5000	429	A	4	920	899	856	779	657
64	CADIL	DEVIL	5000	429	A	4	2946	2877	2740	2493	2103
64	CADIL	FLEET	5000	429	A	4	460	449	428	389	328
64	CHEVR	CORVA	2750	164	A	2	32	32	31	30	28
64	CHEVR	CORVA	2750	164	S3	2	9	9	9	8	8
64	CHEVR	CORVA	2750	164	S4	2	27	27	26	25	24
64	CHEVR	CORVA	2750	164	A	1	32	32	31	30	28
64	CHEVR	CORVA	2750	164	S3	1	9	9	9	8	8
64	CHEVR	CORVA	2750	164	S4	1	27	27	26	25	24
64	CHEVR	CHEV2	3000	194	A	1	28	27	27	26	24
64	CHEVR	CHEV2	3000	194	S3	1	15	15	14	14	13
64	CHEVR	CHEV2	3000	194	S4	1	0	0	0	0	0
64	CHEVR	CHEV2	3000	230	A	1	28	27	27	26	24
64	CHEVR	CHEV2	3000	230	S3	1	15	15	14	14	13
64	CHEVR	CHEV2	3000	230	S4	1	0	0	0	0	0
64	CHEVR	CHEV2	3000	283	A	2	8	8	8	7	7
64	CHEVR	CHEV2	3000	283	S3	2	4	4	4	4	4
64	CHEVR	CHEV2	3000	283	S4	2	0	0	0	0	0
64	CHEVR	CHEVE	3000	194	A	1	26	26	25	24	23
64	CHEVR	CHEVE	3000	194	S3	1	10	10	10	9	9
64	CHEVR	CHEVE	3000	194	S4	1	3	3	3	3	2
64	CHEVR	CHEVE	3000	230	A	1	26	26	25	24	23
64	CHEVR	CHEVE	3000	230	S3	1	10	10	9	9	9
64	CHEVR	CHEVE	3000	230	S4	1	3	3	3	3	2
64	CHEVR	CHEVE	3500	283	A	2	79	77	76	73	69
64	CHEVR	CHEVE	3500	283	S3	2	30	30	29	28	26
64	CHEVR	CHEVE	3500	283	S4	2	9	9	9	9	8
64	CHEVR	BISCA	3500	230	A	1	19	19	19	18	17
64	CHEVR	BISCA	3500	230	S3	1	5	5	4	4	4
64	CHEVR	BISCA	3500	230	S4	1	1	1	1	0	0
64	CHEVR	BISCA	4000	283	A	2	39	39	38	37	34
64	CHEVR	BISCA	4000	283	S3	2	10	10	9	9	9
64	CHEVR	BISCA	4000	283	S4	2	2	2	2	1	1
64	CHEVR	BISCA	4000	327	A	4	26	25	25	24	22
64	CHEVR	BISCA	4000	327	S3	4	6	6	6	6	5
64	CHEVR	BISCA	4000	327	S4	4	1	1	1	1	1
64	CHEVR	BELAI	3500	230	A	1	37	36	35	34	32
64	CHEVR	BELAI	3500	230	S3	1	9	9	9	8	8

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	CHEVR	BELAI	3500	230	S4	1	1	1	1	1	1
64	CHEVR	BELAI	4000	283	A	2	74	73	71	68	65
64	CHEVR	BELAI	4000	283	S3	2	19	19	18	17	16
64	CHEVR	BELAI	4000	283	S4	2	3	3	3	3	3
64	CHEVR	BELAI	4000	327	A	4	40	39	38	37	35
64	CHEVR	BELAI	4000	327	S3	4	10	10	10	9	9
64	CHEVR	BELAI	4000	327	S4	4	2	2	2	1	1
64	CHEVR	BELAI	4000	409	A	4	8	7	7	7	7
64	CHEVR	BELAI	4000	409	S3	4	2	2	2	1	1
64	CHEVR	BELAI	4000	409	S4	4	0	0	0	0	0
64	CHEVR	IMPAL	4000	230	A	1	108	106	104	100	94
64	CHEVR	IMPAL	4000	230	S3	1	28	27	27	26	24
64	CHEVR	IMPAL	4000	230	S4	1	5	5	5	5	5
64	CHEVR	IMPAL	4000	283	A	2	216	213	208	200	189
64	CHEVR	IMPAL	4000	283	S3	2	56	55	54	52	49
64	CHEVR	IMPAL	4000	283	S4	2	11	11	11	10	10
64	CHEVR	IMPAL	4000	327	A	4	117	115	113	108	102
64	CHEVR	IMPAL	4000	327	S3	4	30	30	29	28	26
64	CHEVR	IMPAL	4000	327	S4	4	6	6	6	5	5
64	CHEVR	IMPAL	4000	409	A	4	23	23	22	21	20
64	CHEVR	IMPAL	4000	409	S3	4	6	6	5	5	5
64	CHEVR	IMPAL	4000	409	S4	4	1	1	1	1	1
64	CHEVR	CORVE	3500	327	A	4	7	6	6	6	6
64	CHEVR	CORVE	3500	327	S3	4	2	1	1	1	1
64	CHEVR	CORVE	3500	327	S4	4	5	5	5	5	5
64	CHEVR	STAWA	0	0	0	0	187	184	180	173	164
64	CHRYS	NEWPO	4000	361	A	2	****	****	****	9831	9081
64	CHRYS	NEWPO	4000	361	S3	2	164	154	148	139	128
64	CHRYS	300	4000	383	A	2	3234	3050	2919	2745	2539
64	CHRYS	300	4000	383	S3	2	45	43	41	39	36
64	CHRYS	300	4000	413	A	4	662	624	597	563	520
64	CHRYS	300	4000	413	S3	4	9	8	8	7	7
64	CHRYS	NEWYO	4500	413	A	4	446	420	402	379	350
64	CHRYS	STAWA	0	0	0	0	1529	1442	1360	1300	1201
64	DODGE	DART	3000	170	A	1	361	358	345	319	275
64	DODGE	DART	3000	170	S3	1	128	127	122	113	97
64	DODGE	DART	3000	170	S4	1	26	26	25	23	20
64	DODGE	DART	3000	273	A	2	47	47	45	41	36
64	DODGE	DART	3000	273	S3	2	16	16	16	14	12
64	DODGE	DART	3000	273	S4	2	3	3	3	3	2
64	DODGE	330	3500	225	A	1	39	38	37	34	29
64	DODGE	330	3500	225	S3	1	6	6	5	5	4
64	DODGE	330	3500	225	S4	1	1	1	0	0	0
64	DODGE	330	3500	318	A	2	78	78	75	69	60
64	DODGE	330	3500	318	S3	2	12	12	11	10	9

	[illegible]	330									
	[illegible]E	330	[illegible]	383		2					
	[illegible]DGE	330	3500	383	S4	2		[illegible]	[illegible]	0	[illegible]
[illegible]	[illegible]	330	3500	426	1	4		15	15	13	12
	[illegible]	330	3500	426	S3	4	2	2	2	2	[illegible]
	[illegible]GE	330	[illegible]	426	S4	[illegible]	0	0	0	0	[illegible]
64	DODGE	440	3500	225	A	1	58	57	55	53	[illegible]
64	DODGE	440	3500	225	S3	1	9	8	8	7	6
64	DODGE	440	3500	225	S4	1	1	1	1	1	1
	[illegible]GE	440	[illegible]	[illegible]	A	2	117	116	[illegible]	104	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]8	S3	2	18	16	17	16	[illegible]
64	[illegible]	[illegible]40	3500	[illegible]	S4	2	3	3	2	2	2
64	DODGE	440	3500	383	A	2	35	35	34	31	27
[illegible]	[illegible]	[illegible]	3500	383	S3	2	5	5	5	4	4
64	DODGE	440	3500	383	S4	2	0	0	0	0	0
64	DODGE	440	3500	426	A	4	23	23	22	20	17
64	DODGE	440	3500	426	S3	4	3	3	3	3	2
64	DODGE	440	3500	426	S4	4	0	0	0	0	0
64	DODGE	POLAR	3500	225	A	1	19	19	18	17	15
64	DODGE	POLAR	3500	225	S3	1	3	3	2	2	2
64	DODGE	[illegible]AR	3500	225	S4	1	0	0	0	0	0
64	DODGE	[illegible]AR	3500	318	A	2	40	39	38	35	30
64	[illegible]	[illegible]LAR	3500	318	S3	2	6	6	5	5	4
64	[illegible]	POLAR	3500	318	S4	2	1	1	0	0	0
64	DODGE	[illegible]LAR	3500	383	A	2	12	12	11	10	9
64	[illegible]	[illegible]LAR	3500	383	S3	2	1	1	1	1	1
64	[illegible]	[illegible]LAR	3500	383	S4	2	0	0	0	0	0
64	DODGE	POLAR	3500	426	A	4	8	7	7	7	6
[illegible]	DODGE	POLAR	3500	426	S3	4	1	1	1	1	0
	[illegible]DGE	POLAR	3500	426	S4	4	0	0	0	0	0
[illegible]	[illegible]DGE	CORON	3500	273	A	2	110	109	105	97	84
[illegible]4	[illegible]GE	CORON	3500	273	S3	2	17	16	16	15	13
[illegible]	[illegible]GE	CORON	3500	273	[illegible]	2	2	2	2	2	2
	[illegible]	880	4000	361	A	2	32	32	31	29	25
[illegible]	[illegible]DGE	[illegible]	4000	361	S3	2	0	0	0	0	0
	[illegible]	880	4000	383	[illegible]	2	21	21	21	19	16
	[illegible]	[illegible]	4000	[illegible]3	[illegible]3	2	0	0	0	0	0
[illegible]	[illegible]GE	880	4000	[illegible]	A	2	18	17	17	16	13
64	[illegible]	[illegible]880	4000	383	S3	2	0	0	0	0	0
64	DODGE	MONAC	4000	383	A	4	8	8	7	7	6
64	DODGE	MONAC	4000	383	S3	4	0	0	0	0	0
64	DODGE	STAKA	0	0	0	0	189	187	180	167	144
64	FORD	FALCO	2750	144	A	1	148	145	137	121	95
64	FORD	FALCO	2750	144	S3	1	115	112	106	94	74

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	FORD	FALCO	2750	144	S4	1	18	17	16	14	11
64	FORD	FALCO	2750	170	A	1	55	54	51	45	35
64	FORD	FALCO	2750	170	S3	1	43	42	39	35	27
64	FORD	FALCO	2750	170	S4	1	6	6	6	5	4
64	FORD	FALCO	2750	200	A	1	29	29	27	24	19
64	FORD	FALCO	2750	200	S3	1	23	22	21	18	14
64	FORD	FALCO	2750	200	S4	1	3	3	3	2	2
64	FORD	FALCO	3000	260	A	1	63	61	58	51	40
64	FORD	FALCO	3000	260	S3	1	49	48	45	40	31
64	FORD	FALCO	3000	260	S4	1	7	7	7	6	4
64	FORD	FAIRL	3000	170	A	1	67	66	62	55	43
64	FORD	FAIRL	3000	170	S3	1	32	31	29	26	20
64	FORD	FAIRL	3000	200	A	1	36	35	33	29	23
64	FORD	FAIRL	3000	200	S3	1	17	16	15	13	10
64	FORD	FAIRL	3000	260	A	1	184	180	170	150	118
64	FORD	FAIRL	3000	260	S3	1	87	85	80	71	56
64	FORD	FAIRL	3000	289	A	2	72	70	66	58	46
64	FORD	FAIRL	3000	289	S3	2	23	22	21	19	15
64	FORD	CUSTO	4000	200	A	1	48	47	44	39	31
64	FORD	CUSTO	4000	200	S3	1	15	15	14	12	10
64	FORD	CUSTO	4000	289	A	2	33	33	31	27	21
64	FORD	CUSTO	4000	289	S3	2	11	10	10	9	7
64	FORD	CUSTO	4000	352	A	2	33	33	31	27	21
64	FORD	CUSTO	4000	352	S3	2	11	10	10	9	7
64	FORD	CUSTO	4000	390	A	4	34	33	31	27	22
64	FORD	CUSTO	4000	390	S3	4	11	10	10	9	7
64	FORD	GALAX	4000	289	A	2	549	536	506	449	353
64	FORD	GALAX	4000	289	S3	2	91	89	84	74	58
64	FORD	GALAX	4000	289	S4	2	34	33	31	28	22
64	FORD	GALAX	4000	352	A	2	329	321	304	269	212
64	FORD	GALAX	4000	352	S3	2	54	53	50	44	35
64	FORD	GALAX	4000	352	S4	2	20	20	19	16	13
64	FORD	GALAX	4000	390	A	4	219	214	202	179	141
64	FORD	GALAX	4000	390	S3	4	365	356	337	299	235
64	FORD	GALAX	4000	390	S4	4	13	13	12	11	8
64	FORD	MUSTA	3000	200	A	1	82	80	76	67	53
64	FORD	MUSTA	3000	200	S3	1	53	51	48	43	34
64	FORD	MUSTA	3000	200	S4	1	32	31	29	26	20
64	FORD	MUSTA	3000	289	A	2	225	219	207	184	145
64	FORD	MUSTA	3000	289	S3	2	144	140	133	117	92
64	FORD	MUSTA	3000	289	S4	2	88	86	81	72	56
64	FORD	TBIRD	4500	390	A	4	218	213	201	178	140
64	FORD	STAWA	0	0	0	0	599	585	553	490	386
64	IMPER	IMPER	5500	413	A	4	****	****	****	****	7929
64	LINCO	CONTI	5500	430	A	4	281	265	243	211	168

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	MERCU	COMET	3000	170	A	1	42	40	37	33	28
64	MERCU	COMET	3000	170	S3	1	16	16	15	13	11
64	MERCU	COMET	3000	170	S4	1	3	3	2	2	2
64	MERCU	COMET	3000	200	A	1	37	36	33	30	25
64	MERCU	COMET	3000	200	S3	1	14	14	13	11	10
64	MERCU	COMET	3000	200	S4	1	2	2	2	2	1
64	MERCU	COMET	3000	260	A	2	40	39	36	32	27
64	MERCU	COMET	3000	260	S3	2	16	15	14	12	10
64	MERCU	COMET	3000	260	S4	2	2	2	2	2	2
64	MERCU	COMET	3000	289	A	2	30	29	27	24	20
64	MERCU	COMET	3000	289	S3	2	11	11	10	9	8
64	MERCU	COMET	3000	289	S4	2	2	2	1	1	1
64	MERCU	MONTR	4500	390	A	2	64	62	57	51	43
64	MERCU	MONTR	4500	390	S3	2	3	3	3	2	2
64	MERCU	MONTE	4500	390	A	2	40	38	36	32	27
64	MERCU	MONTE	4500	390	S3	2	2	2	1	1	1
64	MERCU	STAWA	0	0	0	0	65	63	59	52	44
64	OLDSM	F-85	3500	225	A	1	90	82	72	60	45
64	OLDSM	F-85	3500	225	S3	1	11	10	8	7	5
64	OLDSM	F-85	3500	225	S4	1	4	4	3	3	2
64	OLDSM	F-85	3500	330	A	2	342	315	276	228	173
64	OLDSM	F-85	3500	330	S3	2	42	38	34	28	21
64	OLDSM	F-85	3500	330	S4	2	18	16	14	12	9
64	OLDSM	F-85	3500	330	A	4	288	265	232	192	146
64	OLDSM	F-85	3500	330	S3	4	35	32	28	23	18
64	OLDSM	F-85	3500	330	S4	4	15	14	12	10	7
64	OLDSM	JETST	4000	330	A	2	403	370	324	268	204
64	OLDSM	JETST	4000	330	S3	2	2	2	1	1	1
64	OLDSM	DYN88	4500	394	A	2	934	858	753	621	473
64	OLDSM	DYN88	4500	394	S3	2	5	5	4	3	2
64	OLDSM	SUP88	4500	394	A	4	151	139	122	100	76
64	OLDSM	SUP88	4500	394	S3	4	0	0	0	0	0
64	OLDSM	STARF	4500	394	A	4	85	78	68	56	43
64	OLDSM	STARF	4500	394	S3	4	0	0	0	0	0
64	OLDSM	98	4500	394	A	4	369	339	298	246	187
64	OLDSM	98	4500	394	S3	4	2	2	1	1	1
64	OLDSM	STAWA	0	0	0	0	233	214	188	155	118
64	PLYMO	VALIA	3000	170	A	1	1060	1015	927	780	572
64	PLYMO	VALIA	3000	170	S3	1	443	424	387	326	239
64	PLYMO	VALIA	3000	170	S4	1	107	103	94	79	58
64	PLYMO	VALIA	3000	273	A	2	232	222	203	171	125
64	PLYMO	VALIA	3000	273	S3	2	97	93	85	71	52
64	PLYMO	VALIA	3000	273	S4	2	23	22	20	17	12
64	PLYMO	BELVE	3000	225	A	1	77	73	67	56	41
64	PLYMO	BELVE	3000	225	S3	1	16	15	14	11	8

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	PLYMO	BELVE	3000	225	S4	1	3	3	3	2	2
64	PLYMO	BELVE	3500	318	A	2	93	89	81	68	50
64	PLYMO	BELVE	3500	318	S3	2	19	18	17	14	10
64	PLYMO	BELVE	3500	318	S4	2	4	4	4	3	2
64	PLYMO	BELVE	3500	361	A	2	56	54	49	41	30
64	PLYMO	BELVE	3500	361	S3	2	11	11	10	8	6
64	PLYMO	BELVE	3500	361	S4	2	2	2	2	2	1
64	PLYMO	BELVE	3500	383	A	4	42	40	37	31	23
64	PLYMO	BELVE	3500	383	S3	4	8	8	7	6	4
64	PLYMO	BELVE	3500	383	S4	4	2	2	1	1	1
64	PLYMO	BELVE	3500	426	A	4	14	13	12	10	7
64	PLYMO	BELVE	3500	426	S3	4	2	2	2	2	1
64	PLYMO	BELVE	3500	426	S4	4	0	0	0	0	0
64	PLYMO	SAVOY	3500	225	A	1	131	126	115	97	71
64	PLYMO	SAVOY	3500	225	S3	1	27	26	24	20	14
64	PLYMO	SAVOY	3500	225	S4	1	6	6	5	5	3
64	PLYMO	SAVOY	3500	318	A	2	160	153	140	117	86
64	PLYMO	SAVOY	3500	318	S3	2	33	32	29	24	18
64	PLYMO	SAVOY	3500	318	S4	2	8	7	7	6	4
64	PLYMO	SAVOY	3500	361	A	2	97	93	85	71	52
64	PLYMO	SAVOY	3500	361	S3	2	20	19	17	15	11
64	PLYMO	SAVOY	3500	361	S4	2	5	4	4	3	2
64	PLYMO	SAVOY	3500	383	A	4	73	69	63	53	39
64	PLYMO	SAVOY	3500	383	S3	4	15	14	13	11	8
64	PLYMO	SAVOY	3500	383	S4	4	3	3	3	2	2
64	PLYMO	SAVOY	3500	426	A	4	24	23	21	17	13
64	PLYMO	SAVOY	3500	426	S3	4	5	4	4	3	2
64	PLYMO	SAVOY	3500	426	S4	4	1	1	1	0	0
64	PLYMO	FURY	3500	225	A	1	274	262	239	201	147
64	PLYMO	FURY	3500	225	S3	1	57	54	50	42	30
64	PLYMO	FURY	3500	225	S4	1	14	13	12	10	7
64	PLYMO	FURY	3500	318	A	2	332	318	291	244	179
64	PLYMO	FURY	3500	318	S3	2	69	66	60	51	37
64	PLYMO	FURY	3500	318	S4	2	17	16	15	12	9
64	PLYMO	FURY	3500	383	A	4	151	145	132	111	81
64	PLYMO	FURY	3500	383	S3	4	31	30	27	23	17
64	PLYMO	FURY	3500	383	S4	4	7	7	6	5	4
64	PLYMO	FURY	3500	426	A	4	50	48	44	37	27
64	PLYMO	FURY	3500	426	S3	4	10	10	9	7	5
64	PLYMO	FURY	3500	426	S4	4	2	2	2	1	1
64	PLYMO	STAKA	0	0	0	0	661	633	578	486	357
64	PONTI	TEMPE	3500	215	A	1	431	417	388	337	261
64	PONTI	TEMPE	3500	215	S3	1	98	95	89	77	59
64	PONTI	TEMPE	3500	215	S4	1	84	81	75	65	50
64	PONTI	TEMPE	3500	326	A	2	390	377	351	305	236

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
64	PONTI	TEMPE	3500	326	S3	2	89	86	80	70	54
64	PONTI	TEMPE	3500	326	S4	2	76	73	68	59	46
64	PONTI	TEMPE	3500	389	A	4	205	198	184	160	124
64	PONTI	TEMPE	3500	389	S3	4	47	45	42	36	28
64	PONTI	TEMPE	3500	389	S4	4	40	38	36	31	24
64	PONTI	CATAL	4000	389	A	2	1002	969	902	784	607
64	PONTI	CATAL	4000	389	S3	2	43	42	39	34	26
64	PONTI	CATAL	4000	421	A	4	334	323	300	261	202
64	PONTI	CATAL	4000	421	S3	4	14	14	13	11	8
64	PONTI	STARC	4000	389	A	2	162	156	145	126	98
64	PONTI	STARC	4000	389	S3	2	7	6	6	5	4
64	PONTI	STARC	4000	421	A	4	54	52	48	42	32
64	PONTI	STARC	4000	421	S3	4	2	2	2	1	1
64	PONTI	BONNE	4500	389	A	4	497	480	447	389	301
64	PONTI	BONNE	4500	389	S3	4	21	21	19	17	13
64	PONTI	BONNE	4500	421	A	4	165	160	149	129	100
64	PONTI	BONNE	4500	421	S3	4	7	7	6	5	4
64	PONTI	GRANP	4500	389	A	4	275	265	247	215	166
64	PONTI	GRANP	4500	389	S3	4	12	11	10	9	7
64	PONTI	GRANP	4500	421	A	4	91	88	82	71	55
64	PONTI	GRANP	4500	421	S3	4	4	3	3	3	2
64	PONTI	STAWA	0	0	0	0	314	304	283	246	190

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	AMMCT	AMERI	3000	196	A	1	619	569	503	421	328
63	AMMCT	AMERI	3000	196	S3	1	567	521	461	386	300
63	AMMCT	CLASS	3000	196	A	1	1648	1514	1339	1120	873
63	AMMCT	CLASS	3000	196	S3	1	1510	1388	1227	1026	800
63	AMMCT	AMBAS	3500	327	A	2	167	154	136	114	88
63	AMMCT	AMBAS	3500	327	S3	2	153	141	124	104	81
63	BUICK	SPECI	3000	198	A	1	394	371	337	284	213
63	BUICK	SPECI	3000	198	S3	1	53	50	45	38	28
63	BUICK	SPECI	3000	215	A	2	575	540	492	415	310
63	BUICK	SPECI	3000	215	S3	2	72	68	62	52	39
63	BUICK	LESAB	4000	401	A	2	1326	1246	1134	956	715
63	BUICK	LESAB	4000	401	S3	2	13	12	11	9	7
63	BUICK	WILDC	4000	401	A	4	389	365	332	280	209
63	BUICK	WILDC	4000	401	S3	4	3	3	3	2	2
63	BUICK	RIVIE	4000	401	A	4	312	293	267	225	168
63	BUICK	RIVIE	4000	401	S3	4	3	2	2	2	1
63	BUICK	ELECT	4500	401	A	4	478	449	409	345	257
63	BUICK	ELECT	4500	401	S3	4	4	4	4	3	2
63	BUICK	STAWA	0	0	0	0	244	230	209	176	132
63	CADIL	CADIL	5000	390	A	4	1486	1485	1484	1483	1481
63	CHEVR	CORVA	2750	145	A	2	969	739	504	253	78
63	CHEVR	CORVA	2750	145	S3	2	128	98	66	33	10
63	CHEVR	CHEV2	2750	153	A	1	15	11	8	4	1
63	CHEVR	CHEV2	2750	153	S3	1	8	6	4	2	0
63	CHEVR	CHEV2	2750	194	A	1	1545	1178	803	403	124
63	CHEVR	CHEV2	2750	194	S3	1	839	640	436	219	67
63	CHEVR	BISCA	3500	236	A	1	372	283	193	97	30
63	CHEVR	BISCA	3500	236	S3	1	133	101	69	34	10
63	CHEVR	BISCA	3500	283	A	2	434	331	225	113	35
63	CHEVR	BISCA	3500	283	S3	2	155	118	81	40	12
63	CHEVR	BISCA	3500	327	A	4	434	331	225	113	35
63	CHEVR	BISCA	3500	327	S3	4	155	118	81	40	12
63	CHEVR	BELAI	4000	236	A	1	717	546	372	187	57
63	CHEVR	BELAI	4000	236	S3	1	257	196	133	67	20
63	CHEVR	BELAI	4000	283	A	2	836	638	435	218	67
63	CHEVR	BELAI	4000	283	S3	2	300	228	156	78	24
63	CHEVR	BELAI	4000	327	A	4	836	638	435	218	67
63	CHEVR	BELAI	4000	327	S3	4	300	228	156	78	24
63	CHEVR	IMPAL	4000	236	A	1	1753	1337	911	456	141
63	CHEVR	IMPAL	4000	236	S3	1	628	479	327	164	50
63	CHEVR	IMPAL	4000	283	A	2	2045	1560	1063	534	165
63	CHEVR	IMPAL	4000	283	S3	2	733	559	381	191	59
63	CHEVR	IMPAL	4000	327	A	4	2045	1560	1063	534	165
63	CHEVR	IMPAL	4000	327	S3	4	733	559	381	191	59
63	CHEVR	CORVE	3500	327	A	4	42	32	22	11	3

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	CHEVR	CORVE	3500	327	S3	4	169	129	88	44	13
63	CHEVR	STAWA	0	0	0	0	2641	2014	1373	690	213
63	CHRYS	NEWPO	4000	361	A	2	703	695	643	553	421
63	CHRYS	NEWPO	4000	361	S3	2	28	28	26	22	17
63	CHRYS	300	4000	383	A	2	231	228	211	182	138
63	CHRYS	300	4000	383	S3	2	9	9	8	7	5
63	CHRYS	NEWYO	4500	413	A	4	266	262	243	209	159
63	CHRYS	NEWYO	4500	413	S3	4	10	10	9	8	6
63	CHRYS	STAWA	0	0	0	0	98	97	89	77	58
63	DODGE	DART	3000	170	A	1	749	706	564	275	35
63	DODGE	DART	3000	170	S3	1	321	302	241	118	15
63	DODGE	330	3500	225	A	1	125	118	94	46	5
63	DODGE	330	3500	225	S3	1	39	37	29	14	1
63	DODGE	330	3500	318	A	2	238	225	179	87	11
63	DODGE	330	3500	318	S3	2	74	70	56	27	3
63	DODGE	440	3500	225	A	1	91	86	69	33	4
63	DODGE	440	3500	225	S3	1	28	27	21	10	1
63	DODGE	440	3500	318	A	2	174	164	131	64	8
63	DODGE	440	3500	318	S3	2	54	51	41	20	2
63	DODGE	POLAR	4000	225	A	1	79	74	59	29	3
63	DODGE	POLAR	4000	225	S3	1	24	23	18	9	1
63	DODGE	POLAR	4000	318	A	2	169	159	127	62	7
63	DODGE	POLAR	4000	318	S3	2	53	50	40	19	2
63	DODGE	PO500	4000	383	A	2	55	52	42	20	2
63	DODGE	PO500	4000	383	S3	2	11	10	8	4	0
63	DODGE	880	4000	361	A	2	128	121	96	47	6
63	DODGE	880	4000	361	S3	2	1	1	0	0	0
63	DODGE	CU880	4000	361	A	2	128	121	96	47	6
63	DODGE	CU880	4000	361	S3	2	1	1	0	0	0
63	DODGE	STAWA	0	0	0	0	343	324	258	126	16
63	FORD	FALCO	2750	144	A	1	1070	965	829	641	424
63	FORD	FALCO	2750	144	S3	1	1049	946	813	629	415
63	FORD	FALCO	2750	221	A	2	152	137	118	91	60
63	FORD	FALCO	2750	221	S3	2	149	135	116	89	59
63	FORD	FAIRL	3000	170	A	1	423	381	328	253	167
63	FORD	FAIRL	3000	170	S3	1	246	222	190	147	97
63	FORD	FA500	3500	221	A	2	1179	1063	914	707	467
63	FORD	FA500	3500	221	S3	2	685	618	531	411	271
63	FORD	CUSTO	3000	170	A	1	409	369	317	245	162
63	FORD	CUSTO	3000	170	S3	1	238	214	184	142	94
63	FORD	CU500	3500	221	A	2	628	566	487	376	248
63	FORD	CU500	3500	221	S3	2	365	329	283	219	144
63	FORD	GALAX	3500	223	A	1	20	18	15	12	8
63	FORD	GALAX	3500	223	S3	1	5	5	4	3	2
63	FORD	GALAX	3500	260	A	2	3732	3366	2893	2238	1478

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	FORD	GALAX	3500	260	S3	2	1052	945	816	631	417
63	FORD	TBIRD	4500	390	A	4	611	550	473	366	242
63	FORD	STAWA	0	0	0	0	2465	2223	1911	1479	976
63	IMPER	IMPER	5000	413	A	4	171	158	137	109	76
63	LINCO	LINCO	5500	430	A	4	337	295	262	221	174
63	MERCU	COMET	2750	144	A	1	669	532	439	334	230
63	MERCU	COMET	2750	144	S3	1	371	295	243	185	127
63	MERCU	COMET	2750	221	A	2	161	128	105	80	55
63	MERCU	COMET	2750	221	S3	2	89	71	58	44	30
63	MERCU	METEO	3500	170	A	1	20	16	13	10	7
63	MERCU	METEO	3500	170	S3	1	5	4	3	2	1
63	MERCU	METEO	3500	221	A	2	215	171	141	107	74
63	MERCU	METEO	3500	221	S3	2	55	43	36	27	18
63	MERCU	MONTR	4500	390	A	2	836	665	548	418	287
63	MERCU	MONTR	4500	390	S3	2	29	23	19	14	10
63	MERCU	MONTE	4500	390	A	4	80	64	52	40	27
63	MERCU	MONTE	4500	390	S3	4	2	2	1	1	0
63	MERCU	STAWA	0	0	0	0	364	289	239	182	125
63	OLDSM	F-85	3000	215	A	2	847	724	427	90	1
63	OLDSM	F-85	3000	215	S3	2	109	93	54	11	0
63	OLDSM	JETST	4000	330	A	4	144	123	72	15	0
63	OLDSM	JETST	4000	330	S3	4	18	15	9	1	0
63	OLDSM	DYN88	4500	394	A	2	1489	1273	750	159	2
63	OLDSM	DYN88	4500	394	S3	2	7	6	3	0	0
63	OLDSM	SUP88	4500	394	A	4	453	387	228	48	0
63	OLDSM	SUP88	4500	394	S3	4	2	1	1	0	0
63	OLDSM	STARF	4500	394	A	4	200	171	101	21	0
63	OLDSM	STARF	4500	394	S3	4	1	0	0	0	0
63	OLDSM	98	4500	394	A	4	576	492	290	61	0
63	OLDSM	98	4500	394	S3	4	2	2	1	0	0
63	OLDSM	STAWA	0	0	0	0	234	200	118	25	0
63	PLYMO	VALIA	3000	170	A	1	915	830	722	559	358
63	PLYMO	VALIA	3000	170	S3	1	514	467	406	314	201
63	PLYMO	SAVOY	3500	225	A	1	154	140	122	94	60
63	PLYMO	SAVOY	3500	225	S3	1	48	44	38	29	19
63	PLYMO	SAVOY	3500	318	A	2	293	266	231	179	115
63	PLYMO	SAVOY	3500	318	S3	2	92	83	72	56	36
63	PLYMO	BELVE	3500	225	A	1	156	142	123	95	61
63	PLYMO	BELVE	3500	225	S3	1	49	44	38	30	19
63	PLYMO	BELVE	3500	318	A	2	297	269	234	181	116
63	PLYMO	BELVE	3500	318	S3	2	93	84	73	57	36
63	PLYMO	FURY	3500	225	A	1	188	171	148	115	73
63	PLYMO	FURY	3500	225	S3	1	59	53	46	36	23
63	PLYMO	FURY	3500	318	A	2	358	325	282	218	140
63	PLYMO	FURY	3500	318	S3	2	112	102	88	68	44

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
63	PLYMO	STAWA	0	0	0	0	487	443	385	298	191
63	PONTI	TEMPE	3000	194	A	1	479	455	427	394	359
63	PONTI	TEMPE	3000	194	S3	1	171	163	153	141	128
63	PONTI	TEMPE	3000	326	A	2	296	281	263	244	221
63	PONTI	TEMPE	3000	326	S3	2	106	100	94	87	79
63	PONTI	CATAL	4000	389	A	2	1644	1562	1465	1354	1232
63	PONTI	CATAL	4000	389	S3	2	86	82	77	71	64
63	PONTI	STARC	4000	389	A	2	315	300	281	260	236
63	PONTI	STARC	4000	389	S3	2	16	15	14	13	12
63	PONTI	BONNE	4500	389	A	4	836	795	745	689	627
63	PONTI	BONNE	4500	389	S3	4	44	41	39	36	33
63	PONTI	GRANP	4500	389	A	4	567	539	505	467	425
63	PONTI	GRANP	4500	389	S3	4	29	28	26	24	22
63	PONTI	STAWA	0	0	0	0	351	333	312	289	263

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	AMMCT	AMERI	3000	196	A	1	531	167	23	0	0
62	AMMCT	AMERI	3000	196	A	1	454	143	19	0	0
62	AMMCT	CLASS	3000	196	A	1	1269	400	55	0	0
62	AMMCT	CLASS	3000	196	S3	1	1085	342	47	0	0
62	AMMCT	AMBAS	3500	327	A	2	161	50	7	0	0
62	AMMCT	AMBAS	3500	327	S3	2	137	43	6	0	0
62	BUICK	SPECI	3000	198	A	1	615	530	383	192	48
62	BUICK	SPECI	3000	198	S3	1	96	82	59	30	7
62	BUICK	SPECI	3000	215	A	1	431	371	268	135	34
62	BUICK	SPECI	3000	215	S3	1	67	57	41	21	5
62	BUICK	LESAB	4500	401	A	2	1191	1025	742	373	94
62	BUICK	INVIC	4500	401	A	4	353	303	220	110	27
62	BUICK	RIVIE	4500	401	A	4	75	65	47	23	5
62	BUICK	ELECT	4500	401	A	4	523	450	326	163	41
62	BUICK	STAWA	0	0	0	0	283	244	176	88	22
62	CADIL	CADIL	5000	390	A	4	1536	1443	1363	1255	1116
62	CHEVR	CORVA	2750	145	A	2	1140	283	33	0	0
62	CHEVR	CORVA	2750	145	S3	2	1235	307	36	0	0
62	CHEVR	CHEV2	2750	153	A	1	106	26	3	0	0
62	CHEVR	CHEV2	2750	153	S3	1	71	17	2	0	0
62	CHEVR	CHEV2	2750	194	A	1	1349	335	39	0	0
62	CHEVR	CHEV2	2750	194	S3	1	903	224	26	0	0
62	CHEVR	BISCA	3500	236	A	1	375	93	11	0	0
62	CHEVR	BISCA	3500	236	S3	1	141	35	4	0	0
62	CHEVR	BISCA	3500	283	A	2	700	174	20	0	0
62	CHEVR	BISCA	3500	283	S3	2	264	65	7	0	0
62	CHEVR	BELAI	4000	236	A	1	786	195	23	0	0
62	CHEVR	BELAI	4000	236	S3	1	296	73	8	0	0
62	CHEVR	BELAI	4000	283	A	2	1467	364	43	0	0
62	CHEVR	BELAI	4000	283	S3	2	553	137	16	0	0
62	CHEVR	IMPAL	4000	236	A	1	1593	396	47	0	0
62	CHEVR	IMPAL	4000	236	S3	1	601	149	17	0	0
62	CHEVR	IMPAL	4000	283	A	2	2971	738	87	1	0
62	CHEVR	IMPAL	4000	283	S3	2	1121	278	33	0	0
62	CHEVR	CORVE	3500	327	A	4	66	16	1	0	0
62	CHEVR	CORVE	3500	327	S3	4	66	16	1	0	0
62	CHEVR	STAWA	0	0	0	0	2375	590	70	0	0
62	CHRYS	NEWPO	4000	361	A	2	735	514	188	12	0
62	CHRYS	NEWPO	4000	361	S3	2	18	13	4	0	0
62	CHRYS	300	4000	383	A	4	227	159	58	3	0
62	CHRYS	300	4000	383	S3	4	5	4	1	0	0
62	CHRYS	NEWYO	4500	413	A	4	204	143	52	3	0
62	CHRYS	NEWYO	4500	413	S3	4	5	3	1	0	0
62	CHRYS	STAWA	0	0	0	0	85	59	21	1	0
62	DODGE	LANCE	3000	170	A	1	251	89	18	0	0

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	DODGE	LANCE	3000	170	S3	1	132	47	9	0	0
62	DODGE	DART	3500	225	A	1	200	71	14	0	0
62	DODGE	DART	3500	225	S3	1	43	15	3	0	0
62	DODGE	DART	3500	318	A	2	358	128	26	1	0
62	DODGE	DART	3500	318	S3	2	77	27	5	0	0
62	DODGE	POLAR	3500	361	A	4	108	38	8	0	0
62	DODGE	POLAR	3500	361	S3	4	23	8	1	0	0
62	DODGE	POLAR	3500	383	A	4	126	45	9	0	0
62	DODGE	POLAR	3500	383	S3	4	27	9	2	0	0
62	DODGE	POLAR	3500	413	A	4	126	45	9	0	0
62	DODGE	POLAR	3500	413	S3	4	27	9	2	0	0
62	DODGE	STAWA	0	0	0	0	377	134	27	1	0
62	FORD	FALCO	2750	144	A	1	1119	407	67	3	0
62	FORD	FALCO	2750	144	S3	1	1049	382	82	3	0
62	FORD	FAIRL	3000	170	A	1	619	225	48	2	0
62	FORD	FAIRL	3000	170	S3	1	441	160	34	1	0
62	FORD	FAIRL	3000	226	A	2	1049	382	82	3	0
62	FORD	FAIRL	3000	226	S3	2	747	272	58	2	0
62	FORD	GALAX	4000	223	A	1	556	202	43	1	0
62	FORD	GALAX	4000	223	S3	1	156	57	12	0	0
62	FORD	GALAX	4000	292	A	2	3307	1203	258	11	0
62	FORD	GALAX	4000	292	S3	2	932	339	72	3	0
62	FORD	TBIRD	4500	390	A	4	651	237	50	2	0
62	FORD	STAWA	0	0	0	0	2181	793	170	7	0
62	IMPER	IMPER	5000	413	A	4	159	124	99	69	40
62	LINCO	LINCO	5000	430	A	4	371	312	263	207	149
62	MERCU	COMET	2750	144	A	1	726	620	467	282	120
62	MERCU	COMET	2750	144	S3	1	396	338	254	154	66
62	MERCU	METEO	3000	170	A	1	98	84	63	38	16
62	MERCU	METEO	3000	170	S3	1	34	29	22	13	5
62	MERCU	METEO	3000	221	A	2	403	344	259	156	67
62	MERCU	METEO	3000	221	S3	2	141	121	91	55	23
62	MERCU	MONTR	4000	223	A	1	13	11	8	5	2
62	MERCU	MONTR	4000	223	S3	1	0	0	0	0	0
62	MERCU	MONTR	4000	292	A	2	767	655	493	298	127
62	MERCU	MONTR	4000	292	S3	2	36	31	23	14	6
62	MERCU	STAWA	0	0	0	0	323	276	208	125	53
62	OLDSM	F-85	3000	215	A	2	643	587	449	278	123
62	OLDSM	F-85	3000	215	S3	2	77	71	54	33	14
62	OLDSM	DYN88	4500	394	A	2	1435	1310	1001	621	275
62	OLDSM	DYN88	4500	394	S3	2	7	6	5	3	1
62	OLDSM	SUP88	4500	394	A	4	451	412	315	195	86
62	OLDSM	SUP88	4500	394	S3	4	2	2	1	0	0
62	OLDSM	STARF	4500	394	A	4	324	295	226	140	62
62	OLDSM	STARF	4500	394	S3	4	1	1	1	0	0

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
62	OLDSM	98	4500	394	A	4	541	493	377	234	104
62	OLDSM	STAWA	0	0	0	0	215	196	150	93	41
62	PLYMO	VALIA	3000	170	A	1	581	154	20	0	0
62	PLYMO	VALIA	3000	170	S3	1	370	98	13	0	0
62	PLYMO	SAVOY	3500	225	A	1	168	44	6	0	0
62	PLYMO	SAVOY	3500	225	S3	1	58	15	2	0	0
62	PLYMO	SAVOY	3500	318	A	2	230	61	8	0	0
62	PLYMO	SAVOY	3500	318	S3	2	79	21	2	0	0
62	PLYMO	BELVE	3500	225	A	1	106	28	3	0	0
62	PLYMO	BELVE	3500	225	S3	1	36	9	1	0	0
62	PLYMO	BELVE	3500	318	A	2	144	38	5	0	0
62	PLYMO	BELVE	3500	318	S3	2	49	13	1	0	0
62	PLYMO	FURY	3500	225	A	1	125	33	4	0	0
62	PLYMO	FURY	3500	225	S3	1	43	11	1	0	0
62	PLYMO	FURY	3500	318	A	2	170	45	6	0	0
62	PLYMO	FURY	3500	318	S3	2	58	15	2	0	0
62	PLYMO	STAWA	0	0	0	0	271	72	9	0	0
62	PONTI	TEMPE	3000	195	A	1	743	659	548	428	310
62	PONTI	TEMPE	3000	195	S3	1	188	166	138	108	78
62	PONTI	CATAL	4000	389	A	2	1298	1151	958	748	541
62	PONTI	CATAL	4000	389	S3	2	68	60	50	39	28
62	PONTI	STARC	4000	389	A	2	288	255	212	166	120
62	PONTI	STARC	4000	389	S3	2	15	13	11	8	6
62	PONTI	BONNE	4000	389	A	4	701	621	517	404	292
62	PONTI	BONNE	4000	389	S3	4	36	32	27	21	15
62	PONTI	GRANP	4000	389	A	4	2785	2470	2055	1606	1162
62	PONTI	GRANP	4000	389	S3	4	14	13	10	8	6
62	PONTI	STAWA	0	0	0	0	356	315	262	205	148

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	AMMOT	AMERI	3000	196	A	1	441	323	215	123	58
61	AMMOT	AMERI	3000	196	S3	1	452	331	221	126	60
61	AMMOT	CLASS	3500	196	A	1	717	525	350	200	95
61	AMMOT	CLASS	3500	196	S3	1	734	538	358	205	97
61	AMMOT	CLASS	3500	250	A	2	25	18	12	7	3
61	AMMOT	CLASS	3500	250	S3	2	26	19	12	7	3
61	AMMOT	AMBAS	3500	327	A	2	69	50	33	19	9
61	AMMOT	AMBAS	3500	327	S3	2	71	52	34	19	9
61	BUICK	SPECI	3000	215	A	2	627	582	513	435	352
61	BUICK	SPECI	3000	215	S3	2	97	90	80	67	55
61	BUICK	LESAB	4500	364	A	2	837	776	685	581	470
61	BUICK	LESAB	4500	364	S3	2	9	8	7	6	5
61	BUICK	INVIC	4500	401	A	4	248	230	203	172	139
61	BUICK	INVIC	4500	401	S3	4	2	2	2	1	1
61	BUICK	ELECT	4500	401	A	4	271	251	222	188	152
61	BUICK	ELECT	4500	401	S3	4	3	2	2	2	1
61	BUICK	STAWA	0	0	0	0	69	64	57	48	39
61	CADIL	CADIL	5000	390	A	4	1119	1048	947	828	694
61	CHEVR	CORVA	2750	145	A	2	1277	1026	777	542	342
61	CHEVR	CORVA	2750	145	S3	2	750	602	456	318	201
61	CHEVR	CHEV2	3000	153	A	1	141	114	86	60	38
61	CHEVR	CHEV2	3000	153	S3	1	83	66	50	35	22
61	CHEVR	BISCA	3500	236	A	1	483	388	294	205	129
61	CHEVR	BISCA	3500	236	S3	1	238	191	145	101	63
61	CHEVR	BISCA	3500	283	A	2	615	494	374	261	164
61	CHEVR	BISCA	3500	283	S3	2	303	243	184	128	81
61	CHEVR	BELAI	3500	236	A	1	648	521	394	275	173
61	CHEVR	BELAI	3500	236	S3	1	319	256	194	135	85
61	CHEVR	BELAI	4000	283	A	2	825	663	502	350	221
61	CHEVR	BELAI	4000	283	S3	2	406	326	247	172	108
61	CHEVR	IMPAL	3500	236	A	1	988	793	601	419	264
61	CHEVR	IMPAL	3500	236	S3	1	487	391	296	206	130
61	CHEVR	IMPAL	4000	283	A	2	1258	1010	765	533	337
61	CHEVR	IMPAL	4000	283	S3	2	619	497	377	263	166
61	CHEVR	CORVE	3000	283	A	4	44	36	27	19	12
61	CHEVR	CORVE	3000	283	S3	4	26	21	16	11	7
61	CHEVR	STAWA	0	0	0	0	1111	892	676	471	297
61	CHRYS	NEWPO	4000	361	A	2	367	325	265	205	148
61	CHRYS	300	4500	413	A	4	116	103	84	65	47
61	CHRYS	NEWYO	4500	413	A	4	150	133	106	83	60
61	CHRYS	STAWA	0	0	0	0	37	33	27	20	15
61	DODGE	LANCE	3000	170	A	1	334	267	200	139	87
61	DODGE	LANCE	3000	170	S3	1	93	74	55	38	24
61	DODGE	DART	3000	225	A	1	287	229	172	119	75
61	DODGE	DART	3000	225	S3	1	80	63	48	33	20

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	DODGE	DART	3000	318	A	2	501	401	301	208	131
61	DODGE	DART	3000	318	S3	2	139	111	84	58	36
61	DODGE	POLAR	3500	361	A	2	71	56	42	29	18
61	DODGE	POLAR	3500	361	S3	2	19	15	11	8	5
61	FORD	FALCO	2750	144	A	1	1523	1278	1019	768	542
61	FORD	FALCO	2750	144	S3	1	1862	1563	1246	938	663
61	FORD	FAIRL	3500	223	A	1	352	296	236	177	125
61	FORD	FAIRL	3500	223	S3	1	173	145	116	87	61
61	FORD	FAIRL	3500	292	A	2	733	615	490	369	261
61	FORD	FAIRL	3500	292	S3	2	361	303	241	182	128
61	FORD	GALAX	4000	223	A	1	585	491	391	294	208
61	FORD	GALAX	4000	223	S3	1	288	241	192	145	102
61	FORD	GALAX	4000	292	A	2	1215	1019	813	612	432
61	FORD	GALAX	4000	292	S3	2	598	502	400	301	213
61	FORD	TBIRD	4500	390	A	4	57	48	38	28	20
61	FORD	TBIRD	4500	390	S3	4	1	0	0	0	0
61	FORD	STAWA	0	0	0	0	921	773	616	464	328
61	IMPER	IMPER	5000	413	A	4	114	87	55	26	7
61	LINCO	LINCO	5500	430	A	4	259	260	254	248	242
61	MERCU	COMET	2750	144	A	1	845	737	616	497	362
61	MERCU	COMET	2750	144	S3	1	518	451	379	305	234
61	MERCU	METEO	4000	223	A	1	43	38	32	25	19
61	MERCU	METEO	4000	223	S3	1	26	23	19	15	12
61	MERCU	METEO	4000	292	A	2	131	114	96	77	59
61	MERCU	METEO	4000	292	S3	2	80	70	59	47	36
61	MERCU	MONTR	4000	292	A	2	292	255	213	172	132
61	MERCU	MONTR	4000	292	S3	2	179	156	131	105	81
61	MERCU	STAWA	0	0	0	0	128	112	94	75	58
61	OLDSM	F-85	3000	215	A	2	263	188	115	53	16
61	OLDSM	F-85	3000	215	S3	2	263	188	115	53	16
61	OLDSM	88	4500	394	A	2	1394	999	610	281	86
61	OLDSM	88	4500	394	S3	2	16	12	7	3	1
61	OLDSM	98	4500	394	A	4	335	240	146	67	20
61	OLDSM	98	4500	394	S3	4	4	2	1	0	0
61	OLDSM	STARF	4500	394	A	4	60	43	26	12	3
61	OLDSM	STARF	4500	394	S3	4	0	0	0	0	0
61	OLDSM	STAWA	0	0	0	0	108	78	47	21	6
61	PLYMO	VALIA	3000	170	A	1	458	363	273	189	120
61	PLYMO	VALIA	3000	170	S3	1	365	290	218	151	96
61	PLYMO	SAVOY	3500	225	A	1	102	85	64	44	28
61	PLYMO	SAVOY	3500	225	S3	1	38	30	23	16	10
61	PLYMO	SAVOY	3500	318	A	2	162	128	96	67	42
61	PLYMO	SAVOY	3500	318	S3	2	57	46	34	24	15
61	PLYMO	BELVE	3500	225	A	1	102	81	61	42	27
61	PLYMO	BELVE	3500	225	S3	1	36	29	21	15	9

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
61	PLYMO	BELVE	3500	318	A	2	125	99	74	52	33
61	PLYMO	BELVE	3500	318	S3	2	44	35	26	18	11
61	PLYMO	FURY	3500	225	A	1	106	84	63	44	28
61	PLYMO	FURY	3500	225	S3	1	38	30	22	15	10
61	PLYMO	FURY	3500	318	A	2	130	103	77	54	34
61	PLYMO	FURY	3500	318	S3	2	46	37	27	19	12
61	PLYMO	STAWA	0	0	0	0	249	197	148	103	65

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	AMMOT	AMERI	3000	196	A	1	379	276	184	108	54
60	AMMOT	AMERI	3000	196	S3	1	388	283	188	110	56
60	AMMOT	CLASS	3500	196	A	1	903	659	436	257	130
60	AMMOT	CLASS	3500	196	S3	1	924	675	449	264	133
60	AMMOT	CLASS	3500	250	A	2	52	38	25	15	7
60	AMMOT	CLASS	3500	250	S3	2	53	39	26	15	7
60	AMMOT	AMBAS	3500	327	A	2	72	52	35	20	10
60	AMMOT	AMBAS	3500	327	S3	2	74	54	35	21	10
60	BUICK	SPECI	3000	215	A	2	67	54	41	28	17
60	BUICK	SPECI	3000	215	S3	2	16	13	10	7	4
60	BUICK	LESAB	4500	364	A	2	757	614	458	316	198
60	BUICK	LESAB	4500	364	S3	2	8	6	5	3	2
60	BUICK	INVIC	4500	401	A	4	216	175	131	90	56
60	BUICK	INVIC	4500	401	S3	4	2	1	1	1	0
60	BUICK	ELECT	4500	401	A	4	303	246	183	126	79
60	BUICK	ELECT	4500	401	S3	4	3	2	2	1	0
60	BUICK	STAWA	0	0	C	0	63	51	38	26	16
60	CADIL	CADIL	5000	390	A	4	1105	1079	992	894	788
60	CHEVR	CORVA	2750	140	A	1	876	701	522	361	228
60	CHEVR	CORVA	2750	140	S3	1	514	411	307	212	134
60	CHEVR	BISCA	3500	236	A	1	512	409	305	211	133
60	CHEVR	BISCA	3500	236	S3	1	252	201	150	104	65
60	CHEVR	BISCA	3500	283	A	2	651	521	388	268	170
60	CHEVR	BISCA	3500	283	S3	2	321	256	191	132	83
60	CHEVR	BELAI	3500	236	A	1	709	567	422	292	185
60	CHEVR	BELAI	3500	236	S3	1	349	279	208	143	91
60	CHEVR	BELAI	3500	283	A	2	902	721	538	372	235
60	CHEVR	BELAI	3500	283	S3	2	444	355	265	183	116
60	CHEVR	IMPAL	3500	236	A	1	982	785	585	404	256
60	CHEVR	IMPAL	3500	236	S3	1	483	386	288	199	126
60	CHEVR	IMPAL	3500	283	A	2	1250	999	745	515	326
60	CHEVR	IMPAL	3500	283	S3	2	615	492	367	253	160
60	CHEVR	CORVE	3000	283	A	4	42	34	25	17	11
60	CHEVR	CORVE	3000	283	S3	4	25	20	14	10	6
60	CHEVR	STAWA	0	0	0	0	1324	1059	789	545	345
60	CHRYS	NEWPO	4000	383	A	2	209	171	122	78	43
60	CHRYS	300	4500	413	A	4	13	11	7	5	2
60	CHRYS	NEWYO	4500	413	A	4	60	49	35	22	12
60	CHRYS	STAWA	0	0	0	0	11	9	6	4	2
60	DODGE	LANCE	3000	361	A	2	53	39	25	15	7
60	DODGE	LANCE	3000	361	S3	2	14	10	7	4	2
60	DODGE	DART	3500	225	A	1	356	260	171	101	52
60	DODGE	DART	3500	225	S3	1	99	72	47	28	14
60	DODGE	DART	3500	318	A	2	623	455	299	176	92
60	DODGE	DART	3500	318	S3	2	173	127	83	49	25

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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	DODGE	POLAR	3500	383	A	4	126	92	60	35	18
60	DODGE	POLAR	3500	383	S3	4	35	25	16	9	5
60	FORD	FALCO	2750	144	A	1	1016	735	494	300	161
60	FORD	FALCO	2750	144	S3	1	1242	898	604	366	197
60	FORD	FAIRL	3500	223	A	1	461	333	224	136	73
60	FORD	FAIRL	3500	223	S3	1	227	164	110	67	36
60	FORD	FAIRL	3500	292	A	2	958	693	466	283	152
60	FORD	FAIRL	3500	292	S3	2	472	341	229	139	75
60	FORD	GALAX	4000	223	A	1	324	234	158	95	51
60	FORD	GALAX	4000	223	S3	1	159	115	77	47	25
60	FORD	GALAX	4000	292	A	2	674	487	328	199	107
60	FORD	GALAX	4000	292	S3	2	332	240	161	98	52
60	FORD	TBIRD	4000	352	A	4	400	289	194	118	63
60	FORD	TBIRD	4000	352	S3	4	8	5	3	2	1
60	FORD	STAWA	0	0	0	0	833	602	405	246	132
60	IMPER	IMPER	5000	413	A	4	107	74	44	20	6
60	LINCO	LINCO	5500	430	A	4	145	125	104	84	66
60	OLDSM	F-85	3000	215	A	2	36	27	19	12	6
60	OLDSM	F-85	3000	215	S3	2	36	27	19	12	6
60	OLDSM	88	4500	371	A	2	1119	841	586	371	210
60	OLDSM	88	4500	371	S3	2	13	10	7	4	2
60	OLDSM	98	4500	394	A	4	240	180	126	79	45
60	OLDSM	98	4500	394	S3	4	2	2	1	0	0
60	OLDSM	STAWA	0	0	0	0	82	61	43	27	15
60	PLYMO	VALIA	3000	170	A	1	487	277	123	33	4
60	PLYMO	VALIA	3000	170	S3	1	388	221	98	26	3
60	PLYMO	SAVOY	3500	225	A	1	258	147	65	17	2
60	PLYMO	SAVOY	3500	225	S3	1	92	52	23	6	0
60	PLYMO	BELVE	3500	225	A	1	211	120	53	14	1
60	PLYMO	BELVE	3500	225	S3	1	75	43	19	5	0
60	PLYMO	FURY	3500	318	A	2	197	112	50	13	1
60	PLYMO	FURY	3500	318	S3	2	70	40	17	4	0
60	PLYMO	STAWA	0	0	0	0	265	151	67	18	2
60	PONTI	TEMPE	3000	195	S3	1	58	40	24	13	5
60	PONTI	CATAL	4000	389	A	2	797	542	335	178	80
60	PONTI	CATAL	4000	389	S3	2	22	15	9	4	2
60	PONTI	VENTU	4000	389	A	2	241	164	101	54	24
60	PONTI	VENTU	4000	389	S3	2	6	4	2	1	0
60	PONTI	STARC	4000	389	A	4	199	135	83	44	20
60	PONTI	STARC	4000	389	S3	4	5	3	2	1	0
60	PONTI	BONNE	4500	389	A	4	374	254	157	84	37
60	PONTI	BONNE	4500	389	S3	4	10	7	4	2	1
60	PONTI	STAWA	0	0	0	0	170	116	71	38	17
60	MERCU	COMET	2750	144	A	1	541	420	301	193	108
60	MERCU	COMET	2750	144	S3	1	331	257	184	118	66

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
60	MERCU	MONTR	4500	312	A	2	665	516	370	238	133
60	MERCU	MONTR	4500	312	S3	2	57	44	32	20	11
60	MERCU	STAWA	0	0	0	0	923	717	514	330	186

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
59	AMMOT	AMERI	3000	196	A	1	330	196	104	45	15
59	AMMOT	AMERI	3000	196	S3	1	365	216	115	50	16
59	AMMOT	CLASS	3500	196	A	1	172	102	54	23	8
59	AMMOT	CLASS	3500	196	S3	1	190	113	60	26	8
59	AMMOT	CLASS	3500	250	A	2	172	102	54	23	8
59	AMMOT	CLASS	3500	250	S3	2	190	113	60	26	8
59	AMMOT	AMBAS	3500	327	A	4	330	196	104	45	15
59	AMMOT	AMBAS	3500	327	S3	4	365	216	115	50	16
59	BUICK	LESAB	4500	364	A	2	493	307	172	82	32
59	BUICK	LESAB	4500	364	S3	2	5	3	2	1	0
59	BUICK	INVIC	4500	401	A	4	246	153	86	41	16
59	BUICK	INVIC	4500	401	S3	4	2	1	1	0	0
59	BUICK	ELECT	4500	401	A	4	246	153	86	41	16
59	BUICK	ELECT	4500	401	S3	4	2	1	1	0	0
59	CADIL	CADIL	5000	390	A	4	819	670	499	342	213
59	CHRYS	WINDS	4000	383	A	2	2304	1588	1004	565	277
59	CHRYS	SARAT	4500	383	A	4	2370	1633	1033	581	285
59	CHRYS	NEWYO	4500	413	A	4	2370	1633	1033	581	285
59	DODGE	CORON	3500	230	A	1	16	10	6	3	1
59	DODGE	CORON	3500	230	S3	1	1	0	0	0	0
59	DODGE	CORON	3500	326	A	2	70	45	27	14	6
59	DODGE	CORON	3500	326	S3	2	4	2	1	0	0
59	DODGE	ROYAL	4000	361	A	4	157	101	61	31	13
59	DODGE	ROYAL	4000	361	S3	4	10	6	3	2	0
59	FORD	FAIRL	3500	223	A	1	105	72	46	26	13
59	FORD	FAIRL	3500	223	S3	1	45	31	20	11	5
59	FORD	FAIRL	3500	292	A	2	353	244	156	90	46
59	FORD	FAIRL	3500	292	S3	2	151	104	66	38	19
59	FORD	TBIRD	4000	352	A	4	44	30	19	11	5
59	FORD	TBIRD	4000	352	S3	4	0	0	0	0	0
59	IMPER	IMPER	5000	413	A	4	5363	3427	2001	1022	447
59	LINCO	LINCO	5000	430	A	4	73	49	29	15	6
59	MERCU	MONTR	4000	312	A	2	42	14	4	0	0
59	MERCU	MONTR	4000	312	S3	2	1	0	0	0	0
59	MERCU	MONTC	4500	363	A	4	42	14	4	0	0
59	MERCU	MONTC	4500	383	S3	4	1	0	0	0	0
59	OLDSM	88	4500	371	A	2	320	44	5	0	0
59	OLDSM	88	4500	371	S3	2	2	0	0	0	0
59	OLDSM	98	4500	394	A	4	320	44	5	0	0
59	OLDSM	98	4500	394	S3	4	2	0	0	0	0
59	PLYMO	SAVOY	3500	230	A	1	102	59	30	11	3
59	PLYMO	SAVOY	3500	230	S3	1	37	22	11	4	1
59	PLYMO	SAVOY	3500	318	A	2	232	135	68	27	8
59	PLYMO	SAVOY	3500	318	S3	2	85	49	25	9	2
59	PLYMO	BELVE	3500	230	A	1	102	59	30	11	3

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
59	PLYMO	BELVE	3500	230	S3	1	37	22	11	4	1
59	PLYMO	BELVE	3500	318	A	2	232	135	68	27	8
59	PLYMO	BELVE	3500	318	S3	2	85	49	25	9	2
59	PLYMO	FURY	3500	230	A	1	102	59	30	11	3
59	PLYMO	FURY	3500	230	S3	1	37	22	11	4	1
59	PLYMO	FURY	3500	318	A	2	232	135	68	27	8
59	PLYMO	FURY	3500	318	S3	2	85	49	25	9	2
59	PONTI	CATAL	4000	389	A	2	328	197	106	50	20
59	PONTI	CATAL	4000	389	S3	2	9	5	3	1	0
59	PONTI	STARC	4000	389	A	2	328	197	106	50	20
59	PONTI	STARC	4000	389	S3	2	9	5	3	1	0
59	PONTI	BONNE	4500	389	A	2	328	197	106	50	20
59	PONTI	BONNE	4500	389	S3	2	9	5	3	1	0
59	CHEVR	DELRA	3500	236	A	1	475	306	177	88	36
59	CHEVR	DELRA	3500	236	S3	1	248	160	92	46	19
59	CHEVR	DELRA	3500	283	A	2	247	159	92	45	19
59	CHEVR	DELRA	3500	283	S3	2	129	83	48	23	9
59	CHEVR	BISCA	3500	236	A	1	190	122	71	35	14
59	CHEVR	BISCA	3500	236	S3	1	99	64	37	18	7
59	CHEVR	BISCA	3500	283	A	2	285	183	106	52	21
59	CHEVR	BISCA	3500	283	S3	2	148	95	55	27	11
59	CHEVR	BELAI	3500	236	A	1	304	196	113	56	23
59	CHEVR	BELAI	3500	236	S3	1	158	102	59	29	12
59	CHEVR	BELAI	3500	283	A	2	380	245	141	70	29
59	CHEVR	BELAI	3500	283	S3	2	198	128	74	36	15
59	CHEVR	CORVE	3000	283	A	2	18	11	6	3	1
59	CHEVR	CORVE	3000	283	S3	2	9	6	3	1	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	AMMOT	AMERI	3000	196	A	1	80	47	26	13	5
58	AMMOT	AMERI	3000	196	S3	1	89	52	29	14	6
58	AMMOT	CLASS	3500	196	A	1	20	11	6	3	1
58	AMMOT	CLASS	3500	196	S3	1	22	13	7	3	1
58	AMMOT	CLASS	3500	250	A	2	12	7	4	2	0
58	AMMOT	CLASS	3500	250	S3	2	13	8	4	2	0
58	AMMOT	AMBAS	3500	327	A	4	15	9	5	2	1
58	AMMOT	AMBAS	3500	327	S3	4	17	10	5	2	1
58	BUICK	SPECI	4000	364	A	2	30	0	0	0	0
58	BUICK	SPECI	4000	364	S3	2	0	0	0	0	0
58	BUICK	CENTU	4500	364	A	2	329	7	0	0	0
58	BUICK	CENTU	4500	364	S3	2	4	0	0	0	0
58	BUICK	SUPER	4500	364	A	4	91	2	0	0	0
58	BUICK	SUPER	4500	364	S3	4	1	0	0	0	0
58	BUICK	ROADM	5000	364	A	4	134	3	0	0	0
58	BUICK	ROADM	5000	364	S3	4	1	0	0	0	0
58	BUICK	LIMIT	5000	364	A	4	24	0	0	0	0
58	BUICK	LIMIT	5000	364	S3	4	0	0	0	0	0
58	CADIL	CADIL	5000	365	A	4	530	352	213	110	46
58	CHEVR	DELRA	3500	236	A	1	1681	1060	630	334	154
58	CHEVR	DELRA	3500	236	S3	1	877	553	329	174	80
58	CHEVR	DELRA	3500	283	A	2	874	551	328	173	80
58	CHEVR	DELRA	3500	283	S3	2	456	288	171	90	42
58	CHEVR	BISCA	3500	236	A	1	672	423	252	133	61
58	CHEVR	BISCA	3500	236	S3	1	350	221	131	69	32
58	CHEVR	BISCA	3500	283	A	2	1009	636	378	200	93
58	CHEVR	BISCA	3500	283	S3	2	526	332	197	104	48
58	CHEVR	BELAI	3500	236	A	1	821	518	308	163	75
58	CHEVR	BELAI	3500	236	S3	1	428	270	160	85	39
58	CHEVR	BELAI	3500	283	A	2	1346	849	505	267	124
58	CHEVR	BELAI	3500	283	S3	2	703	443	263	139	64
58	CHEVR	CORVE	3000	283	A	2	68	43	25	13	6
58	CHEVR	CORVE	3000	283	S3	2	35	22	13	7	3
58	DODGE	CORON	3500	230	A	1	10	5	3	1	0
58	DODGE	CORON	3500	230	S3	1	0	0	0	0	0
58	DODGE	CORON	3500	325	A	2	13	7	4	1	0
58	DODGE	CORON	3500	325	S3	2	0	0	0	0	0
58	DODGE	ROYAL	4000	325	A	2	124	68	35	15	5
58	DODGE	ROYAL	4000	325	S3	2	7	4	2	1	0
58	DODGE	CUSTO	4000	350	A	4	55	30	15	7	2
58	DODGE	CUSTO	4000	350	A	4	3	1	1	0	0
58	FORD	CUSTO	3500	223	A	1	141	1	0	0	0
58	FORD	CUSTO	3500	223	S3	1	60	0	0	0	0
58	FORD	CUSTO	3500	292	A	2	25	0	0	0	0
58	FORD	CUSTO	3500	292	S3	2	11	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	FORD	FAIRL	3500	223	A	1	146	1	0	0	0
58	FORD	FAIRL	3500	223	S3	1	63	0	0	0	0
58	FORD	FAIRL	3500	292	A	2	77	0	0	0	0
58	FORD	FAIRL	3500	292	S3	2	33	0	0	0	0
58	FORD	FA500	3500	223	A	1	50	1	0	0	0
58	FORD	FA500	3500	223	S3	1	38	0	0	0	0
58	FORD	FA500	3500	332	A	4	122	1	0	0	0
58	FORD	FA500	3500	332	S3	4	52	0	0	0	0
58	FORD	TBIRD	4000	352	A	4	54	0	0	0	0
58	FORD	TBIRD	4000	352	S3	4	1	0	0	0	0
58	IMPER	IMPER	5000	430	A	4	2047	349	63	5	0
58	LINCO	LINCO	5000	430	A	4	55	23	8	2	0
58	MERCU	MONTR	4500	383	A	4	18	4	1	0	0
58	MERCU	MONTR	4500	383	S3	4	0	0	0	0	0
58	MERCU	MONTC	4500	383	A	4	3	0	0	0	0
58	MERCU	MONTC	4500	383	S3	4	0	0	0	0	0
58	MERCU	PARKL	4500	430	A	4	29	7	1	0	0
58	MERCU	PARKL	4500	430	S3	4	0	0	0	0	0
58	OLDSM	88	4500	371	A	2	32	15	7	3	1
58	OLDSM	88	4500	371	S3	2	0	0	0	0	0
58	OLDSM	SUP88	4500	371	A	4	229	104	53	23	9
58	OLDSM	SUP88	4500	371	S3	4	2	0	0	0	0
58	OLDSM	98	4500	371	A	4	65	30	15	6	2
58	OLDSM	98	4500	371	S3	4	0	0	0	0	0
58	PLYMO	PLAZA	3500	230	A	1	237	8	0	0	0
58	PLYMO	PLAZA	3500	230	S3	1	87	3	0	0	0
58	PLYMO	PLAZA	3500	318	A	2	28	1	0	0	0
58	PLYMO	PLAZA	3500	318	S3	2	10	0	0	0	0
58	PLYMO	SAVOY	3500	230	A	1	38	1	0	0	0
58	PLYMO	SAVOY	3500	230	S3	1	14	0	0	0	0
58	PLYMO	SAVOY	3500	318	A	2	38	1	0	0	0
58	PLYMO	SAVOY	3500	318	S3	2	14	0	0	0	0
58	PLYMO	BELVE	3500	230	A	1	48	1	0	0	0
58	PLYMO	BELVE	3500	230	S3	1	17	0	0	0	0
58	PLYMO	BELVE	3500	318	A	2	24	0	0	0	0
58	PLYMO	BELVE	3500	318	S3	2	8	0	0	0	0
58	PLYMO	FURY	4000	318	A	2	68	2	0	0	0
58	PLYMO	FURY	4000	318	S3	2	25	0	0	0	0
58	PONTI	CHIEF	4000	370	A	2	293	0	0	0	0
58	PONTI	CHIEF	4000	370	S3	2	8	0	0	0	0
58	PONTI	SUPCH	4000	370	A	2	53	0	0	0	0
58	PONTI	SUPCH	4000	370	S3	2	2	0	0	0	0
58	PONTI	STARC	4000	370	A	4	81	0	0	0	0
58	PONTI	STARC	4000	370	S3	4	2	0	0	0	0
58	PONTI	BONNE	4000	370	A	4	144	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
58	PONTI	BONNE	4000	370	S3	4	4	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
57	AMMOT	HORNE	4000	327	A	2	47	23	11	4	1
57	AMMOT	HORNE	4000	327	S3	2	52	26	12	5	1
57	AMMOT	METRO	2250	91	S3	1	96	48	23	9	3
57	AMMOT	RAMBL	3000	196	S3	1	26	13	6	2	0
57	AMMOT	NASH	4000	196	S3	1	38	19	9	3	1
57	BUICK	SPECI	4500	364	A	2	100	3	0	0	0
57	BUICK	SPECI	4500	364	S3	2	1	0	0	0	0
57	BUICK	CENTU	4500	364	A	4	315	10	0	0	0
57	BUICK	CENTU	4500	364	S3	4	3	0	0	0	0
57	BUICK	SUPER	4500	364	A	4	112	3	0	0	0
57	BUICK	SUPER	4500	364	S3	4	1	0	0	0	0
57	BUICK	ROADM	4500	364	A	4	130	4	0	0	0
57	BUICK	ROADM	4500	364	S3	4	1	0	0	0	0
57	CADIL	CADIL	5000	365	A	4	474	299	181	97	46
57	CHEVR	150	3500	236	A	1	1640	504	144	21	1
57	CHEVR	150	3500	236	S3	1	856	263	75	11	0
57	CHEVR	150	3500	265	A	2	1640	504	144	21	1
57	CHEVR	150	3500	265	S3	2	856	263	75	11	0
57	CHEVR	150	3500	283	A	2	2301	708	202	30	1
57	CHEVR	150	3500	283	S3	2	1201	369	105	15	0
57	CHEVR	210	3500	236	A	1	1640	504	144	21	1
57	CHEVR	210	3500	236	S3	1	856	263	75	11	0
57	CHEVR	210	3500	265	A	2	1316	404	115	17	1
57	CHEVR	210	3500	265	S3	2	687	211	60	9	0
57	CHEVR	210	3500	283	A	2	2132	656	187	28	1
57	CHEVR	210	3500	283	S3	2	1113	342	97	14	0
57	CHEVR	BELAI	3500	236	A	1	1147	352	100	15	0
57	CHEVR	BELAI	3500	236	S3	1	599	184	52	7	0
57	CHEVR	BELAI	3500	265	A	2	2132	656	187	28	1
57	CHEVR	BELAI	3500	265	S3	2	1113	342	97	14	0
57	CHEVR	BELAI	3500	283	A	2	2463	757	216	32	1
57	CHEVR	BELAI	3500	283	S3	2	1286	395	113	16	1
57	CHEVR	CORVE	3000	283	A	2	161	49	14	2	0
57	CHEVR	CORVE	3000	283	S3	2	84	26	7	1	0
57	CHRYS	WINDS	4500	354	A	4	31	0	0	0	0
57	CHRYS	SARAT	4500	354	A	4	15	0	0	0	0
57	CHRYS	NEWYO	4500	392	A	4	80	0	0	0	0
57	CHRYS	300	4500	392	A	4	186	1	0	0	0
57	DODGE	CORON	3500	230	A	1	282	2	0	0	0
57	DODGE	CORON	3500	230	S3	1	18	0	0	0	0
57	DODGE	CORON	3500	325	A	2	188	1	0	0	0
57	DODGE	CORON	3500	325	S3	2	12	0	0	0	0
57	DODGE	ROYAL	4000	325	A	2	62	0	0	0	0
57	DODGE	ROYAL	4000	325	S3	2	4	0	0	0	0
57	DODGE	CUSTO	4000	325	A	4	94	0	0	0	0

AUTOMOTIVE TESTING LABORATORIES, INC.
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YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
57	DODGE	CUSTO	4000	325	S3	4	6	0	0	0	0
57	FORD	CUSTO	3500	223	A	1	2498	899	348	105	24
57	FORD	CUSTO	3500	223	S3	1	1070	385	145	45	10
57	FORD	CUSTO	3000	272	A	2	297	107	41	12	2
57	FORD	CUSTO	3000	272	S3	2	127	45	17	5	1
57	FORD	FAIRL	3500	223	A	1	2081	749	290	88	20
57	FORD	FAIRL	3500	223	S3	1	892	321	124	37	8
57	FORD	FAIRL	3500	272	A	2	1069	384	148	45	10
57	FORD	FAIRL	3500	272	S3	2	458	164	63	19	4
57	IMPER	IMPER	5000	392	A	4	0	0	0	0	0
57	LINCO	LINCO	5000	368	A	4	84	16	3	0	0
57	MERCU	MONTR	4000	312	A	2	141	53	21	7	2
57	MERCU	MONTR	4000	312	S3	2	3	1	0	0	0
57	MERCU	MONTC	4000	312	A	4	141	53	21	7	2
57	MERCU	MONTC	4000	312	S3	4	3	1	0	0	0
57	MERCU	TURNP	4500	368	A	4	31	12	4	1	0
57	MERCU	TURNP	4500	368	S3	4	0	0	0	0	0
57	OLDSM	88	4500	371	A	4	282	55	12	1	0
57	OLDSM	88	4500	371	S3	4	2	0	0	0	0
57	OLDSM	SUP88	4500	371	A	4	146	28	6	1	0
57	OLDSM	SUP88	4500	371	S3	4	1	0	0	0	0
57	OLDSM	98	4500	371	A	4	108	21	4	0	0
57	OLDSM	98	4500	371	S3	4	0	0	0	0	0
57	PLYMO	PLAZA	3500	230	A	1	247	1	0	0	0
57	PLYMO	PLAZA	3500	230	S3	1	91	0	0	0	0
57	PLYMO	PLAZA	3500	277	A	2	31	0	0	0	0
57	PLYMO	PLAZA	3500	277	S3	2	11	0	0	0	0
57	PLYMO	SAVOY	3500	230	A	1	111	0	0	0	0
57	PLYMO	SAVOY	3500	230	S3	1	40	0	0	0	0
57	PLYMO	SAVOY	3500	301	A	2	43	0	0	0	0
57	PLYMO	SAVOY	3500	301	S3	2	15	0	0	0	0
57	PLYMO	BELVE	3500	230	A	1	37	0	0	0	0
57	PLYMO	BELVE	3500	230	S3	1	13	0	0	0	0
57	PLYMO	BELVE	3500	301	A	2	62	0	0	0	0
57	PLYMO	BELVE	3500	301	S3	2	22	0	0	0	0
57	PLYMO	FURY	4000	318	A	4	86	0	0	0	0
57	PLYMO	FURY	4000	318	S3	4	31	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
56	FORD	CUSTO	3500	272	S3	2	55	25	12	5	2
56	FORD	FAIRL	3500	233	A	1	365	165	81	35	13
56	FORD	FAIRL	3500	233	S3	1	156	70	35	15	5
56	FORD	FAIRL	3500	292	A	2	365	165	81	35	13
56	FORD	FAIRL	3500	292	S3	2	156	70	35	15	5
56	FORD	TBIRD	3500	292	A	2	214	97	48	20	7
56	FORD	TBIRD	3500	292	S3	2	92	41	20	8	3
56	LINCO	LINCO	4500	368	A	4	0	0	0	0	0
56	MERCU	MONTR	4000	312	A	2	52	9	2	0	0
56	MERCU	MONTR	4000	312	S3	2	1	0	0	0	0
56	MERCU	MONTC	4000	312	A	2	41	7	1	0	0
56	MERCU	MONTC	4000	312	S3	2	1	0	0	0	0
56	OLDSM	88	4000	324	A	2	35	15	7	3	1
56	OLDSM	88	4000	324	S3	2	0	0	0	0	0
56	OLDSM	SUP88	4000	324	A	4	285	126	62	27	10
56	OLDSM	SUP88	4000	324	S3	4	2	1	0	0	0
56	OLDSM	98	4500	324	A	4	35	15	7	3	1
56	OLDSM	98	4500	324	S3	4	0	0	0	0	0
56	PLYMO	PLAZA	3500	230	A	1	246	58	17	3	0
56	PLYMO	PLAZA	3500	230	S3	1	90	21	6	1	0
56	PLYMO	PLAZA	3500	270	A	2	55	13	3	0	0
56	PLYMO	PLAZA	3500	270	S3	2	20	4	1	0	0
56	PLYMO	SAVOY	3500	230	A	1	61	14	4	0	0
56	PLYMO	SAVOY	3500	230	S3	1	22	5	1	0	0
56	PLYMO	SAVOY	3500	270	A	2	44	10	3	0	0
56	PLYMO	SAVOY	3500	270	S3	2	16	3	1	0	0
56	PLYMO	BELVE	3500	230	A	1	66	15	4	1	0
56	PLYMO	BELVE	3500	230	S3	1	24	5	1	0	0
56	PLYMO	FURY	4000	303	A	2	84	20	5	1	0
56	PLYMO	FURY	4000	303	S3	2	30	7	2	0	0
56	PONTI	CHIEF	4000	317	A	2	433	13	0	0	0
56	PONTI	CHIEF	4000	317	S3	2	12	0	0	0	0
56	PONTI	STARC	4000	317	A	2	144	4	0	0	0
56	PONTI	STARC	4000	317	S3	2	4	0	0	0	0

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
55	AMMOT	WASP	3500	202	S3	1	0	1	0	0	0
55	AMMOT	HORNE	4000	320	S3	2	0	1	0	0	0
55	BUICK	SPECI	4000	264	A	2	0	0	0	0	0
55	BUICK	SPECI	4000	264	S3	2	0	0	0	0	0
55	BUICK	SUPER	4000	322	A	2	0	4	0	0	0
55	BUICK	CENTU	4000	322	A	4	0	1	0	0	0
55	BUICK	ROADM	4500	322	A	4	0	1	0	0	0
55	CADIL	CADIL	4500	331	A	4	0	1	0	0	0
55	CHEVR	150	3500	236	A	1	0	317	165	74	27
55	CHEVR	150	3500	236	S3	1	0	293	152	68	25
55	CHEVR	150	3500	265	A	2	0	223	116	52	19
55	CHEVR	150	3500	265	S3	2	0	182	95	42	16
55	CHEVR	210	3500	236	A	1	0	381	199	89	33
55	CHEVR	210	3500	236	S3	1	0	352	183	82	31
55	CHEVR	210	3500	265	A	2	0	290	151	68	25
55	CHEVR	210	3500	265	S3	2	0	237	124	55	20
55	CHEVR	BELAI	3500	236	A	1	0	296	154	69	26
55	CHEVR	BELAI	3500	236	S3	1	0	273	142	64	24
55	CHEVR	BELAI	3500	265	A	2	0	448	234	104	39
55	CHEVR	BELAI	3500	265	S3	2	0	366	191	85	32
55	CHEVR	CORVE	3000	265	A	2	0	122	63	28	10
55	CHEVR	CORVE	3000	265	S3	2	0	285	148	66	25
55	CHRYS	WINDS	4000	301	A	2	0	0	0	0	0
55	CHRYS	IMPER	4500	331	A	4	0	0	0	0	0
55	DODGE	CORON	3500	270	A	2	0	0	0	0	0
55	DODGE	ROYAL	3500	270	A	2	0	0	0	0	0
55	DODGE	ROYAL	3500	270	S3	2	0	0	0	0	0
55	DODGE	CUSTO	3500	270	A	2	0	0	0	0	0
55	DODGE	CUSTO	3500	270	S3	2	0	0	0	0	0
55	DODGE	CUSTO	3500	230	A	1	0	0	0	0	0
55	DODGE	CUSTO	3500	230	S3	1	0	0	0	0	0
55	FORD	MAINL	3500	223	A	1	0	69	34	14	5
55	FORD	MAINL	3500	223	S3	1	0	276	136	59	23
55	FORD	MAINL	3500	272	A	2	0	28	13	6	2
55	FORD	MAINL	3500	272	S3	2	0	28	13	6	2
55	FORD	CUSTO	3500	223	A	1	0	72	35	15	6
55	FORD	CUSTO	3500	223	S3	1	0	72	35	15	6
55	FORD	CUSTO	3500	272	A	2	0	151	74	32	12
55	FORD	CUSTO	3500	272	S3	2	0	37	18	8	3
55	FORD	FAIRL	3500	223	A	1	0	107	52	23	8
55	FORD	FAIRL	3500	223	S3	1	0	71	35	15	5
55	FORD	FAIRL	3500	272	A	2	0	107	52	23	8
55	FORD	FAIRL	3500	272	S3	2	0	26	13	5	2
55	FORD	TBIRD	3500	292	A	4	0	53	26	11	4
55	FORD	TBIRD	3500	292	S3	4	0	13	6	2	1

YR	MAKE	MODEL	WEIGHT	ENG. DISP	TRANS TYPE	CARB TYPE	REGISTERED JULY 1971	PROJECTED-MID 72	73	74	75
55	LINCO	LINCO	4500	341	A	4	0	0	0	0	0
55	MERCU	MONTR	4000	292	A	2	0	0	0	0	0
55	MERCU	MONTR	4000	292	S3	2	0	0	0	0	0
55	MERCU	MONTC	4000	292	A	2	0	0	0	0	0
55	MERCU	MONTC	4000	292	S3	2	0	0	0	0	0
55	OLDSM	88	4000	324	A	2	0	11	5	2	1
55	OLDSM	88	4000	324	S3	2	0	0	0	0	0
55	OLDSM	SUP88	4000	324	A	4	0	90	44	20	8
55	OLDSM	98	4000	324	A	4	0	11	5	2	1
55	PLYMO	PLAZA	3500	230	A	1	0	20	6	1	0
55	PLYMO	PLAZA	3500	230	S3	1	0	82	24	5	0
55	PLYMO	PLAZA	3500	260	A	2	0	6	2	0	0
55	PLYMO	PLAZA	3500	260	S3	2	0	16	4	1	0
55	PLYMO	SAVOY	3500	230	A	1	0	10	3	0	0
55	PLYMO	SAVOY	3500	230	S3	1	0	10	3	0	0
55	PLYMO	SAVOY	3500	260	A	2	0	34	10	2	0
55	PLYMO	SAVOY	3500	260	S3	2	0	14	4	0	0
55	PLYMO	BELVE	3500	230	A	1	0	21	6	1	0
55	PLYMO	BELVE	3500	230	S3	1	0	9	2	0	0
55	PLYMO	BELVE	3500	260	A	2	0	24	7	1	0
55	PLYMO	BELVE	3500	260	S3	2	0	6	1	0	0
55	PONTI	CHIEF	4000	287	A	2	0	0	0	0	0
55	PONTI	CHIEF	4000	287	S3	2	0	0	0	0	0
55	PONTI	STARC	4000	287	A	2	0	0	0	0	0
55	PONTI	STARC	4000	287	S3	2	0	0	0	0	0

test PGM Description: Colorado

Registration Data

① model year and final registration date do not always coincide

② model (year) vehicles generally continue to appreciate after introduction primarily due to influx of population to state

③ depriciation curve smooths out after a peak in registration.

Developement of eqtns. for above

① simple factor; independent factor developed for each make of vehicle make.

② least sqs. fit used; an eqtn. was developed for each vehicle make

③ compared manufacturers eqtns. for long term failures based on short term test ~~and~~ using lognormal, Gumbel, Binomial, & Weibull eqtns against official vehicle registration depreciation or attrition curves. Weibel distribution was found to have the best fit.

specs. for a catalog of predicted vehicle registrations 1955-1972 determined by model yr., make, model, vehicle wt., eng CID, transmission type, carb. type, vehicles registed as of middle of model year.

- as of July 1972 more than 1/2 of ~~motor~~ cars registered in Colorado were not factory installed with emission devices.

- 75 samples taken from 258 possibilities → vality of sample indicated by fact that all 75 of vehicles by make & model yr. originally designated to fit sample specs. came from the group (of 258)

Testing:] Keymode
3 test modes; idle, low cruise, high cruise

~~[illegible] CO, CO₂, HC, NOx~~

- 2 modes of Key Mode Test Proc. used:
  a) CVS to analyzer
  b) CVS to bag

} CO, CO_2, HC, NO_x mass & conc.

★ Emission reduction: Table 6 → good corrolation between 1975 FTP and Key mode in terms (of % error for) of Mass ~~of~~ HC 1% and CO 5% and poor corrolation for NOx 175% in terms of Mass for the same.