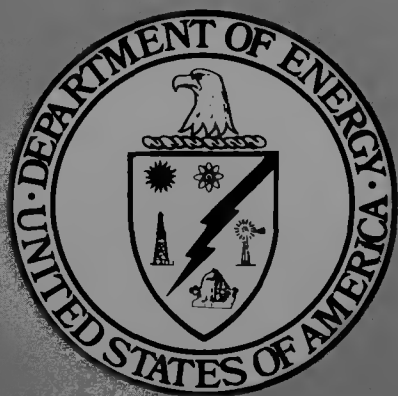


Ar. 339



BETC/PPS-78/3

MASTER

MOTOR GASOLINES, WINTER 1977-78

By

Ella Mae Shelton

Date Published—July 1978

Bartlesville Energy Technology Center
U.S. Department of Energy
Bartlesville, Oklahoma

DEPARTMENT OF ENERGY LIBRARY

TECHNICAL INFORMATION CENTER
UNITED STATES DEPARTMENT OF ENERGY

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

This report has been produced directly from the best available copy.

Available from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Price: Paper Copy \$6.00
Microfiche \$3.00

This Petroleum Products Survey, BETC/PPS-78/3, is one of a series of surveys published by the United States Department of Energy (DOE) at the Bartlesville Energy Technology Center (BETC). These survey reports represent a cooperative effort supported in part by the American Petroleum Institute.

MOTOR GASOLINES, WINTER 1977-78

By

Ella Mae Shelton


NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

Bartlesville Energy Technology Center
Bartlesville, Oklahoma

Date Published—July 1978

UNITED STATES DEPARTMENT OF ENERGY
TECHNICAL INFORMATION CENTER


DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

CONTENTS

	<u>Page</u>
Abstract	1
Introduction	1
Summary	2
Discussion of data	3
List of motor-gasoline survey reports, 1967-1977	6

ILLUSTRATIONS

Fig.

1. Trends of certain characteristics of regular grade gasolines	7
2. Trends of certain characteristics of premium grade gasolines	8
3. Area 1: Unleaded motor gasoline octane number distributions	9
4. Area 1: Regular motor gasoline octane number distributions	10
5. Area 1: Premium motor gasoline octane number distributions	11
6. Area 2: Unleaded motor gasoline octane number distributions	12
7. Area 2: Regular motor gasoline octane number distributions	13
8. Area 2: Premium motor gasoline octane number distributions	14
9. Area 3: Unleaded motor gasoline octane number distributions	15
10. Area 3: Regular motor gasoline octane number distributions	16
11. Area 3: Premium motor gasoline octane number distributions	17
12. Area 4: Unleaded motor gasoline octane number distributions	18
13. Area 4: Regular motor gasoline octane number distributions	19
14. Area 4: Premium motor gasoline octane number distributions	20
15. Map showing locations and numbers of samples by districts and areas for the national motor gasoline survey, winter 1977-78.	78

TABLES

1. Summary of values, motor gasoline survey, winter 1977-78	21
2. Summary of values, motor gasoline survey, winter 1976-77	21
3. Average data for different brands, winter 1977-78	22
4. Average data for brands in each district	73
5. Cumulative percents of unleaded gasoline samples by districts, motor gasoline survey, winter 1977-78	76
6. Locations and numbers of samples by districts and areas for motor gasoline survey, winter 1977-78	77

MOTOR GASOLINES, WINTER 1977-78

by

Ella Mae Shelton¹

ABSTRACT

Analytical data for 2,738 samples of motor gasoline, from service stations throughout the country, were collected and analyzed under agreement between the Bartlesville Energy Technology Center and the American Petroleum Institute. The samples represent the products of 52 companies, large and small, which manufacture and supply gasoline. These data are tabulated by groups according to brands (unlabeled) and grades for 17 marketing areas and districts into which the country is divided. A map, included in this report, shows marketing areas, districts and sampling locations. The report also includes charts indicating the trends of selected properties of motor fuels since 1946. Twelve octane distribution percent charts for areas 1, 2, 3, and 4 for unleaded, regular, and premium grades of gasoline are presented in this report. The antiknock (octane) index $[(R+M)/2]$ averages of gasolines sold in this country were 88.4, 89.5, and 94.9 for unleaded, regular, and premium grades of gasolines, respectively.

INTRODUCTION

The properties of motor fuels sold through service stations in the United States are reported in accordance with a cooperative agreement between the American Petroleum Institute and the Bartlesville Energy Technology Center of the United States Department of Energy. By agreement with the American Petroleum Institute, identification of the data is confidential.

This report presents analytical data for 2,738 samples that represent the products of 52 companies. Company representatives collected the samples

¹Statistical Assistant.

during December 1977 and January and February 1978. As in previous surveys, the gasoline data in this survey include those from both large and small suppliers. Laboratories of various refiners, motor manufactures, and chemical companies obtained and submitted the data to the Bartlesville Energy Technology Center for analysis and compilation. Motor-gasoline survey reports published since 1968 are listed on page 6.

Analytical data required for a complete gasoline analysis were not available for many of the samples. Tests in this category, the number of test results available and used in this report, and the percent of the total samples represented for that test include the following:

<u>Test</u>	<u>Number of samples used</u>	<u>Percent of total samples</u>
Gravity	2,663	97.3
Sulfur content	1,185	43.3
Lead content	1,903	69.5
Vapor pressure	1,961	71.6
Distillation	1,992	72.8
Manganese (unleaded)	230	.8
Benzene	605	22.1

SUMMARY

The characteristics of motor gasolines for winter 1977-78 are summarized in table 1, and those for winter 1976-77 are shown in table 2 for comparison. Figures 1 and 2 show trends for several years of some of the more important characteristics.

The following data show trends of national average octane numbers for the last four gasoline surveys:

<u>Octane number</u>	<u>Grades of motor gasoline</u>								
	<u>Unleaded</u>			<u>Regular</u>			<u>Premium</u>		
	<u>Res.</u>	<u>Motor</u>	<u>(R+M)/2</u>	<u>Res.</u>	<u>Motor</u>	<u>(R+M)/2</u>	<u>Res.</u>	<u>Motor</u>	<u>(R+M)/2</u>
Semi-annual reports:									
Summer 1976	92.4	83.9	88.2	93.3	86.0	89.6	98.9	91.4	95.2
Winter 1976-77	92.6	84.1	88.4	93.2	86.1	89.7	98.8	91.4	95.1
Summer 1977	92.9	83.9	88.5	93.2	85.9	89.6	98.7	91.2	95.0
Winter 1977-78	92.9	83.9	88.4	93.2	85.7	89.5	98.8	91.0	94.9

Table 3 shows properties of unleaded, regular, and premium grades of gasolines sold during the winter of 1977-78 in each of the 17 marketing districts. Table 4 shows average data from each district and gives the national average for all properties for the above mentioned three grades of gasoline, unleaded, regular, and premium.

Cumulative percents for unleaded grade gasolines for the 17 districts are presented in table 5. Table 6 lists locations and numbers of samples represented in each area and district for all samples in this report.

DISCUSSION OF DATA

Terms used in the surveys have the following meanings:

Area: Selected by elevation and location in the United States. The areas are divided as: Area 1 - Eastern and Gulf Coast states, Area 2 - Central states, Area 3 - Mountain states, including elevations above 3,000 feet, and Area 4 - Western states. The areas are given in table 6 and indicated by a broken line in figure 15.

District: The designation of a marketing area for collecting samples and data. The present arrangement of 17 districts, developed by the CFR Committee², was selected with reference to the specifications on motor gasolines, refinery locations, population centers, and arteries of commerce such as navigable rivers. The states or parts of states in each district are indicated in the headings of table 3 and are shown in figure 15.

Brand: The gasoline sold within a given price group and by a given trade name.

Item: The index number assigned to a given brand in a given district. The data for each item represent the average of those submitted for that brand in that district. The number of samples represented follows the item number.

Sample: The supply of gasoline obtained at the service station and analyzed in the laboratory.

²Coordinating Fuel and Equipment Research Committee (formerly the Coordinating Fuel Research Committee) of the Coordinating Research Council, Inc. From 1935 to 1948 the motor-gasoline surveys were conducted under a cooperative agreement between the Coordinating Research Council and the Bureau of Mines.

Table 3 presents the following data by districts: gravity in degrees API, sulfur, gum, lead (for premium and regular grades), research- and motor-method octane numbers, the calculated property of the sum of research and motor octane numbers divided by two [antiknock (octane) index], Reid vapor pressure, calculated data for vapor-liquid ratio of 20, distillation characteristics, benzene and manganese (for unleaded grade) of the motor fuels collected. Benzene data are presented in this report for the first time. The tests were made according to American Society for Testing and Materials standards.³

Corrosion tests results are not included in the district tables as all the reported numbers are "1", according to the corrosion scale given in table 1 of ASTM D130.⁴

Gum test data are reported to the nearest whole number. The distillation temperatures, corrected to barometric pressure at 760 mm Hg, are those for percent evaporated.

Average values follow the tabulated data in table 3 for the respective grades of fuel shown in each district. The averages of the various properties were computed without reference to the total number of samples represented by each item.

The district averages from table 3 are shown in table 4 with the number of brands and number of samples for unleaded, regular, and premium grades of gasoline in each district. The national averages for each of the properties of fuels sold in each of the 17 districts are given at the end of the table.

Figures 1 and 2 illustrate trends in the national averages of certain properties of regular and premium grades of gasoline, respectively, since the summer of 1946. This report presents trend data of the calculated anti-knock index $[(R+M)/2]$ since 1970. Averages for the winter surveys are plotted on the lines that represent the years and average for the summer survey data

³American Society for Testing and Materials, 1977 Annual Book of ASTM Standards, Part 23, Petroleum Products and Lubricants (1), Philadelphia, Pa., 936 pp.

⁴American Society for Testing and Materials, Standard Method for Detection of Copper Corrosion From Petroleum Products by the Copper Strip Tarnish Test (D130): 1977 Annual Book of ASTM Standards, Part 23, pp. 97-103.

are plotted between the lines. Octane-number data points for successive surveys are connected, but the data for Reid vapor pressure and distillation temperatures are plotted separately for summer and winter surveys. Charts that show plots of these properties from 1935 (except winter 1941-42 and summer 1942) are presented in the survey report on motor gasolines for winter 1964-65 and preceding reports.⁵

Figures 3 through 14 show the research-method, motor-method, and antiknock [(R+M)/2] octane distribution percent curves for areas 1, 2, 3, and 4 for unleaded, regular, and premium grades of gasoline.

Table 5 lists cumulative percents for unleaded grade gasolines (0.00-0.04) for the data submitted for the 17 districts using ASTM D3237.⁶

The city locations, areas, districts, and numbers of samples of gasoline represented are listed in table 6 and shown on the map in figure 15. The locations are named for the principal cities in the respective vicinities, and include suburbs and adjacent communities. The area of the circle at each location is proportional to the number of samples obtained. The summary at the end of table 6 lists by district, the number of locations, samples, and the percentages of the latter based on the total reported.

This report does not discuss the significance of the data presented. Reference may be made to the ASTM specification⁷ for motor gasoline and its appendixes, "Significance of ASTM Specifications for Motor Gasoline," at a technical library.

⁵ Blade, O. C., *Motor Gasolines, Winter 1964-65*. Bureau of Mines Petroleum Products Survey No. 40, 38 pp. (in cooperation with the American Petroleum Institute).

⁶ American Society for Testing and Materials, *Standard Method of Test for Lead in Gasoline by Atomic Absorption Spectrometry (D3237)*: 1977 Annual Book of ASTM Standards, Part 25, pp. 109-110.

⁷ American Society for Testing and Materials, *Standard Specifications for Gasoline (D439)*: 1977 Annual Book of ASTM Standards, Part 23 (see footnote 3), pp. 219-231.

LIST OF MOTOR-GASOLINE SURVEY REPORTS, 1967-1977

<u>Author</u>	<u>Season and Year</u>	<u>PPS Report No.</u>	<u>Published</u>	<u>No. of Pages</u>
In cooperation with the American Petroleum Institute				
Blade, O. C.	Winter 1967-68	55	June 1968	39
Do.	Summer 1968	58	Jan. 1969	38
Do.	Winter 1968-69	60	July 1969	38
Blade, O. C. and Ella Mae Shelton	Summer 1969	63	Jan. 1970	38
Shelton, Ella Mae and C. M. McKinney	Winter 1969-70	66	Aug. 1970	47
Do.	Summer 1970	68	Jan. 1971	49
Do.	Winter 1970-71	70	June 1971	54
Shelton, Ella Mae	Summer 1971	73	Jan. 1972	59
Do.	Winter 1971-72	75	June 1972	53
Do.	Summer 1972	78	Jan. 1973	53
Do.	Winter 1972-73	80	June 1973	60
Do.	Summer 1973	83	Jan. 1974	59
Do.	Winter 1973-74	85	June 1974	59
Do.	Summer 1974	88	Jan. 1975	62
Do.	Winter 1974-75	75/1	June 1975	71
Do.	Summer 1975	76/1	Jan. 1976	72
Do.	Winter 1975-76	76/3	June 1976	72
Do.	Summer 1976	77/1	Jan. 1977	78
Do.	Winter 1976-77	77/3	June 1977	89
Do.	Summer 1977	78/1	Jan. 1978	89
Do.	Winter, 1977-78	This report		

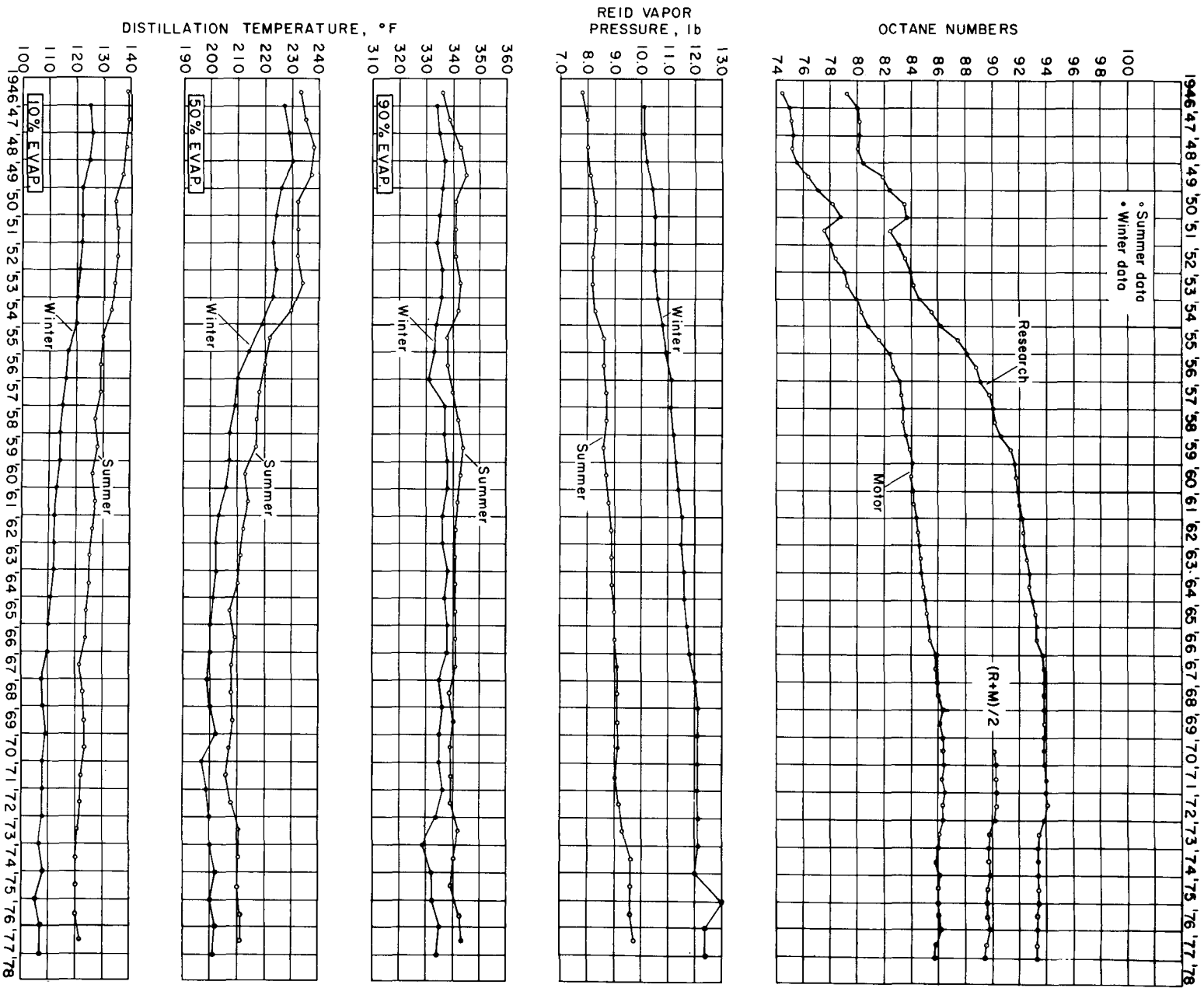


FIGURE 1.- Trends of certain characteristics of regular grade gasolines.

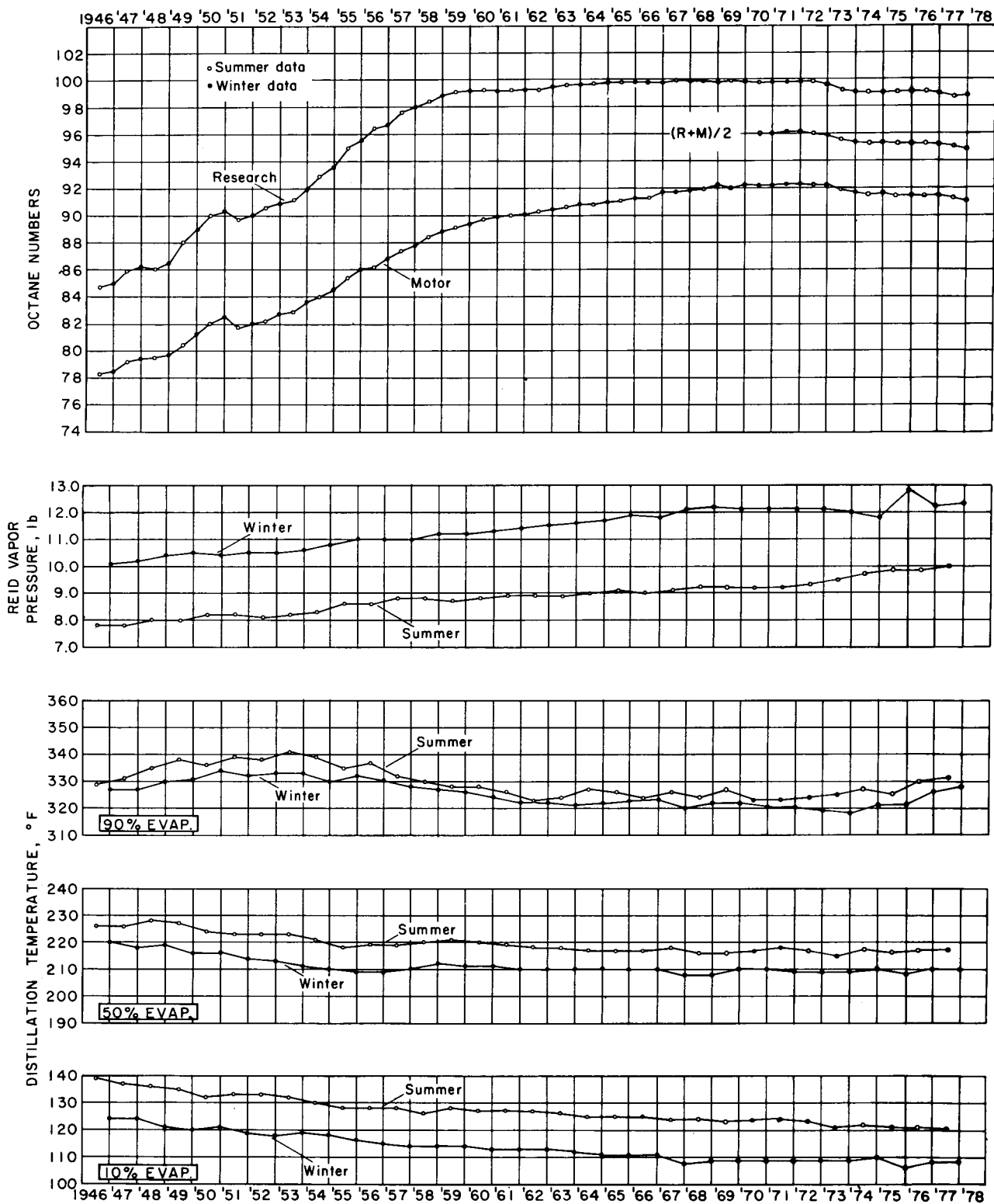


FIGURE 2.-Trends of certain characteristics of premium grade gasolines.

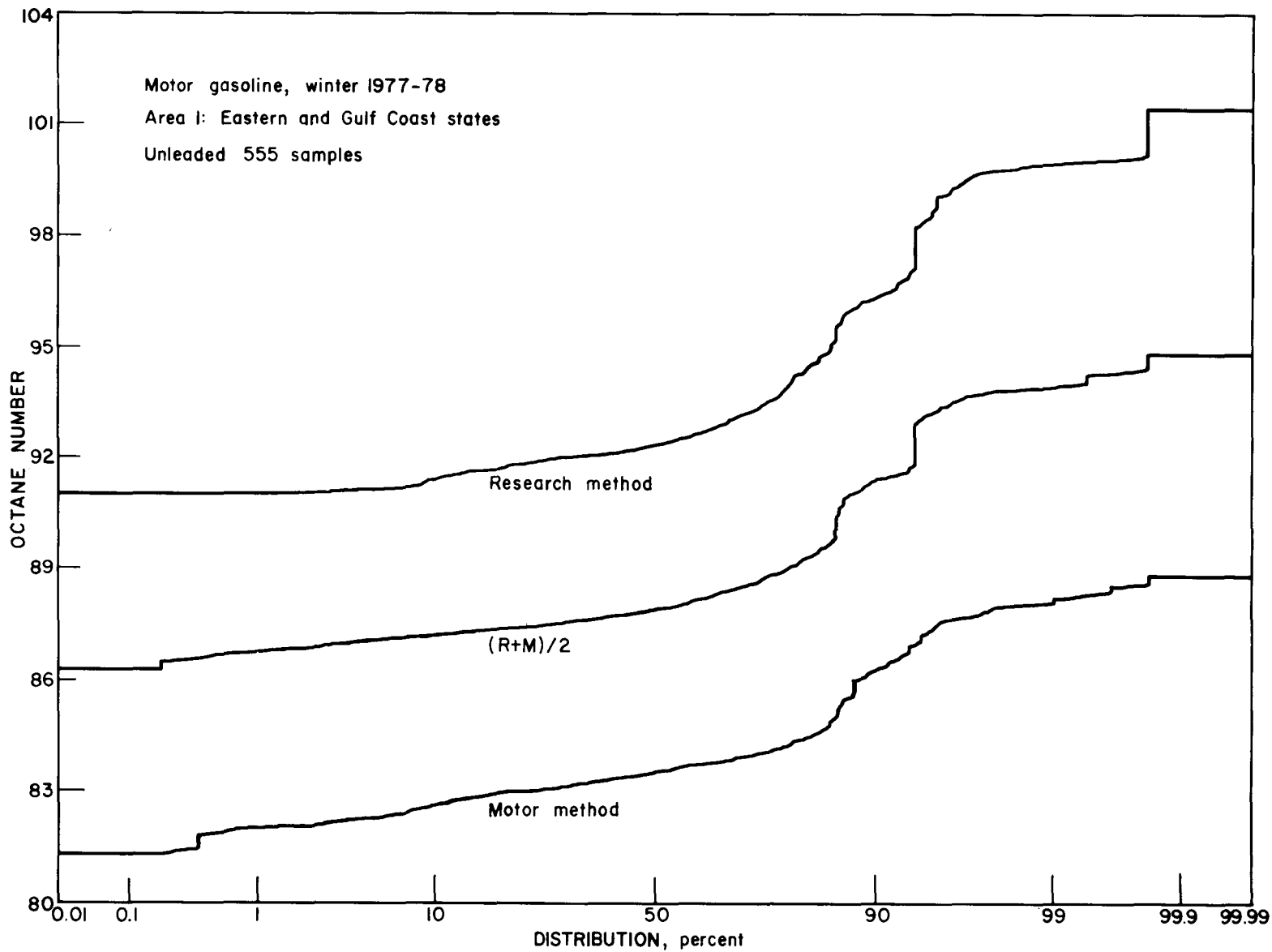


FIGURE 3.- Area I: Unleaded motor gasoline octane number distributions.

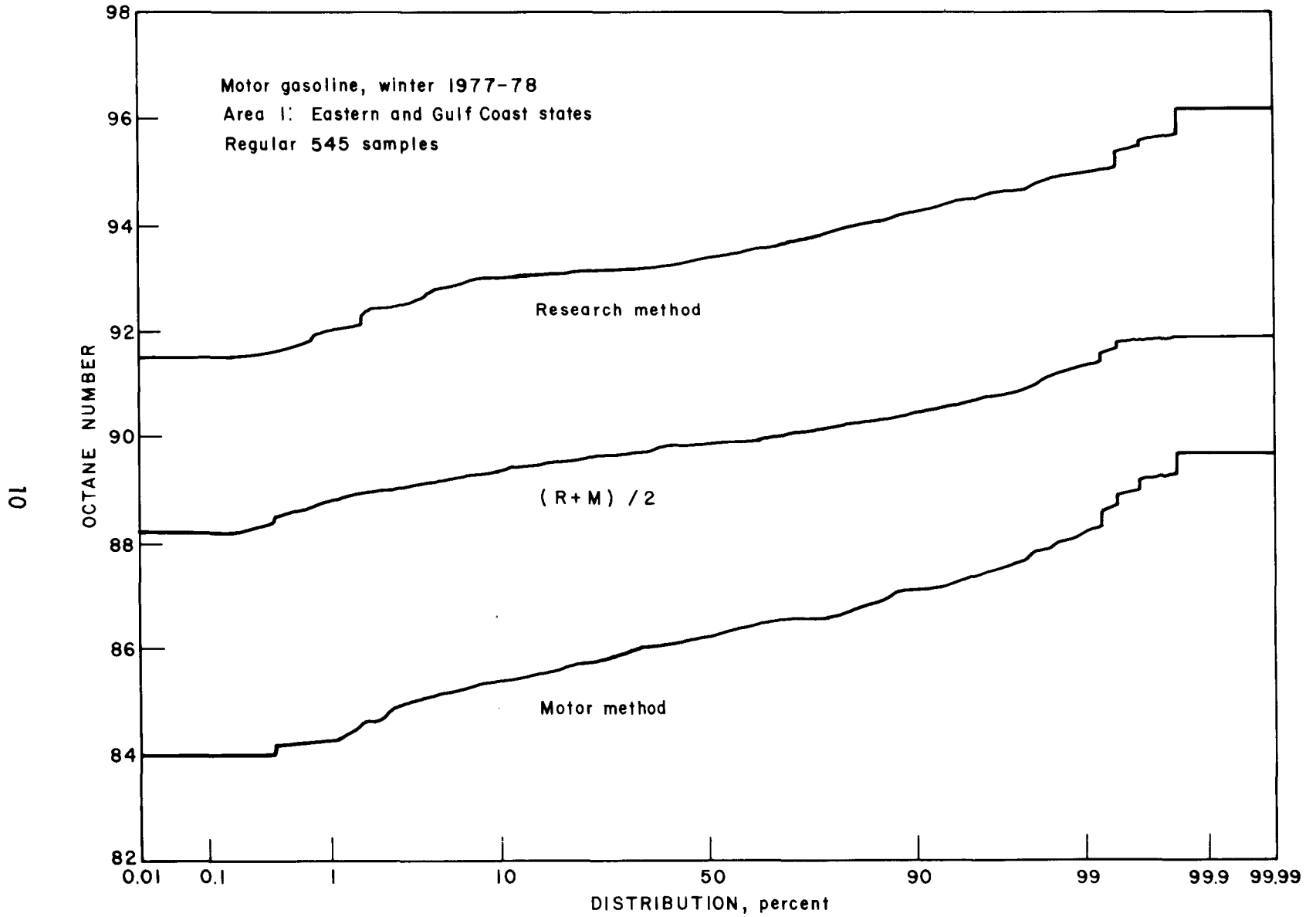


FIGURE 4.-Area I: Regular motor gasoline octane number distributions.

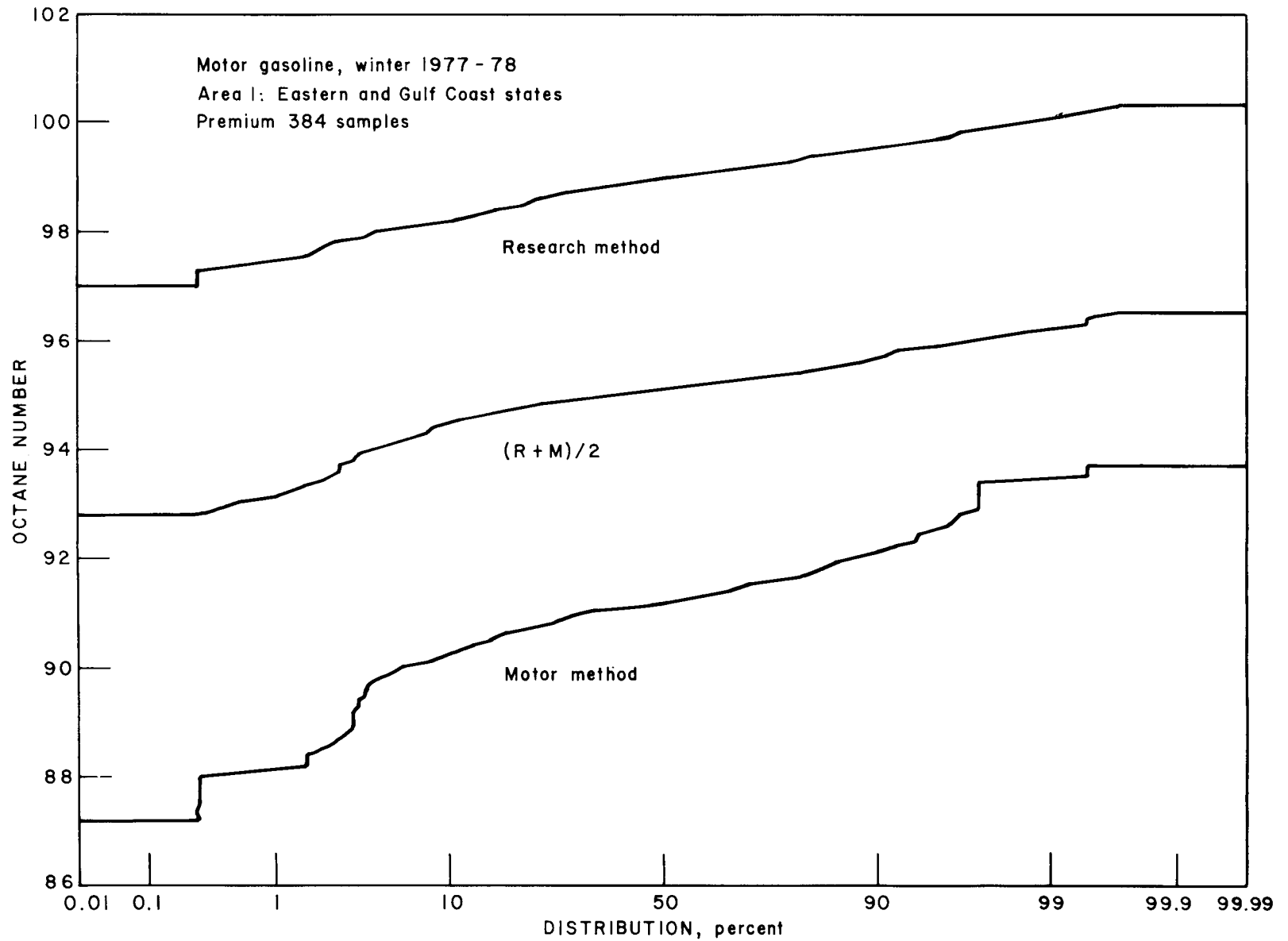


FIGURE 5.-Area I: Premium motor gasoline octane number distributions.

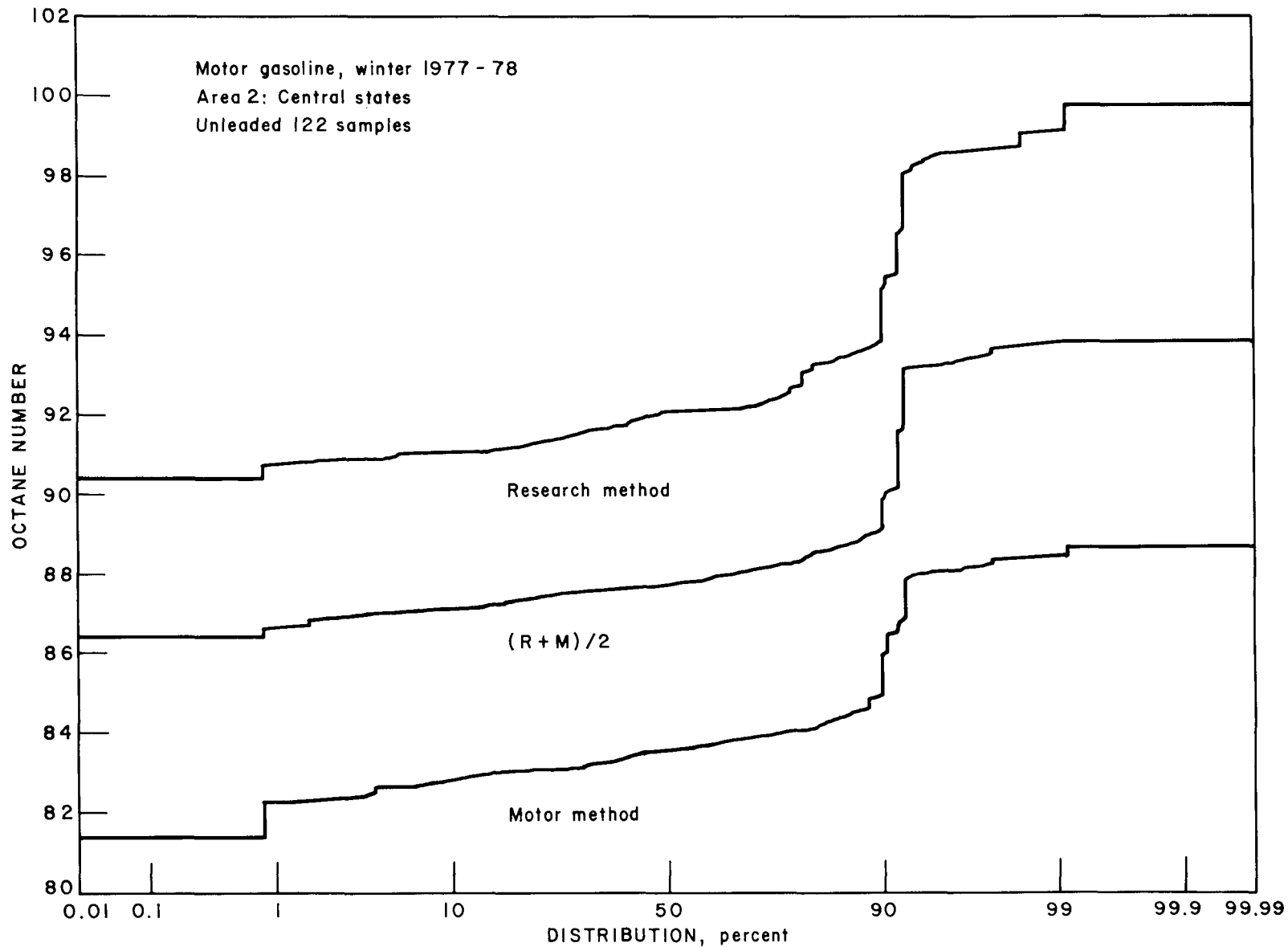


FIGURE 6.- Area 2: Unleaded motor gasoline octane number distributions.

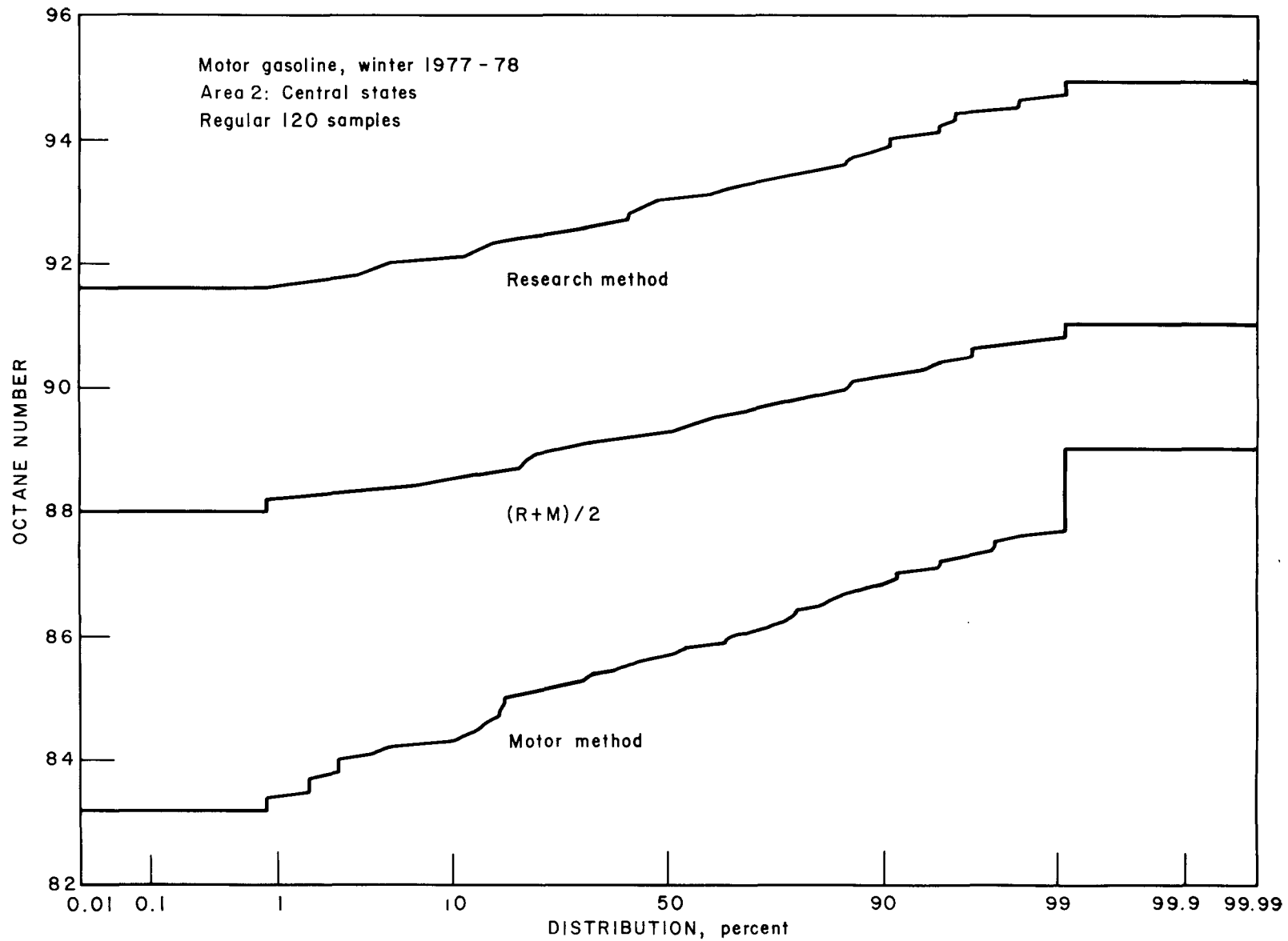


FIGURE 7.-Area 2: Regular motor gasoline octane number distributions.

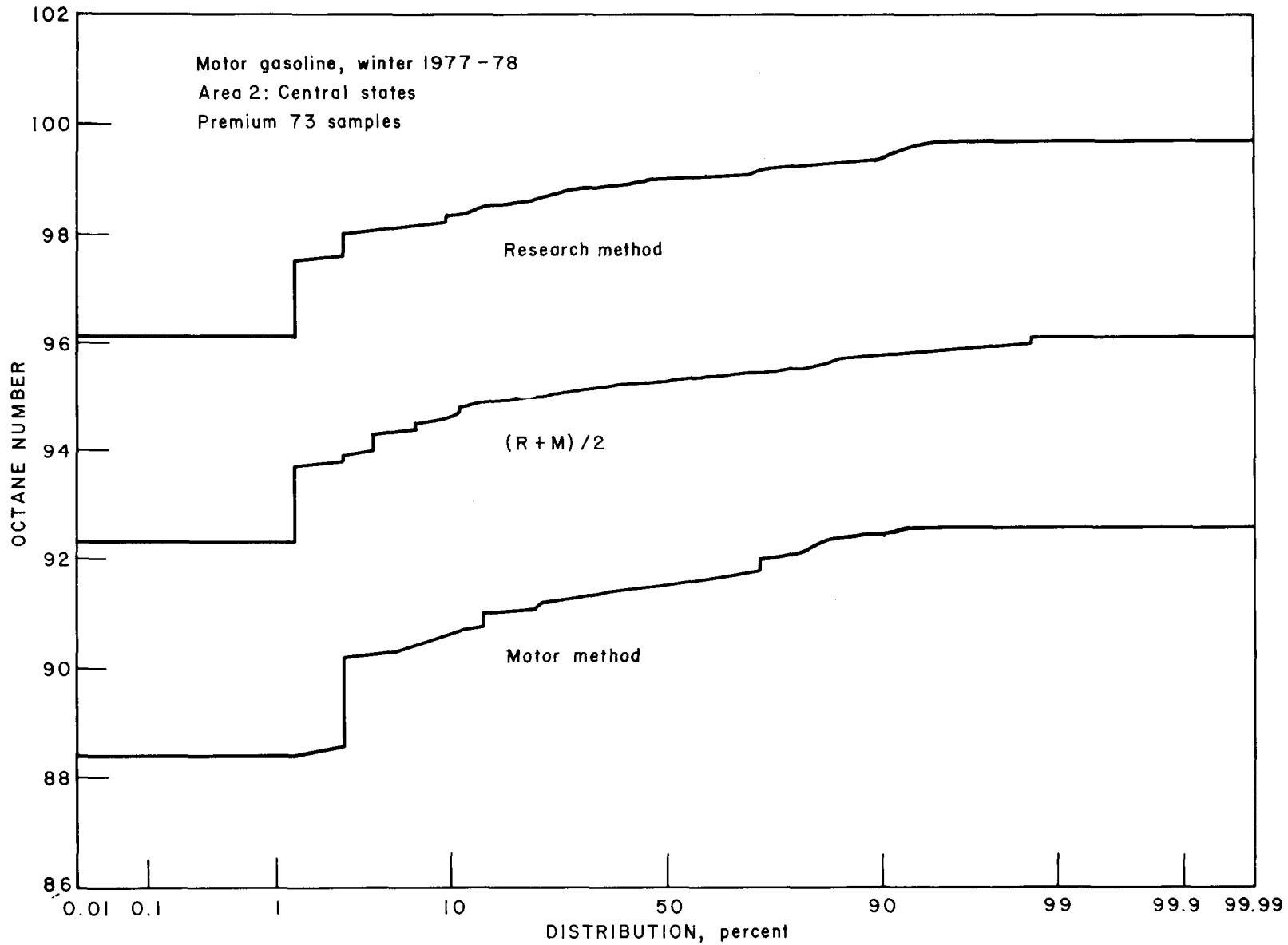


FIGURE 8.- Area 2: Premium motor gasoline octane number distributions.

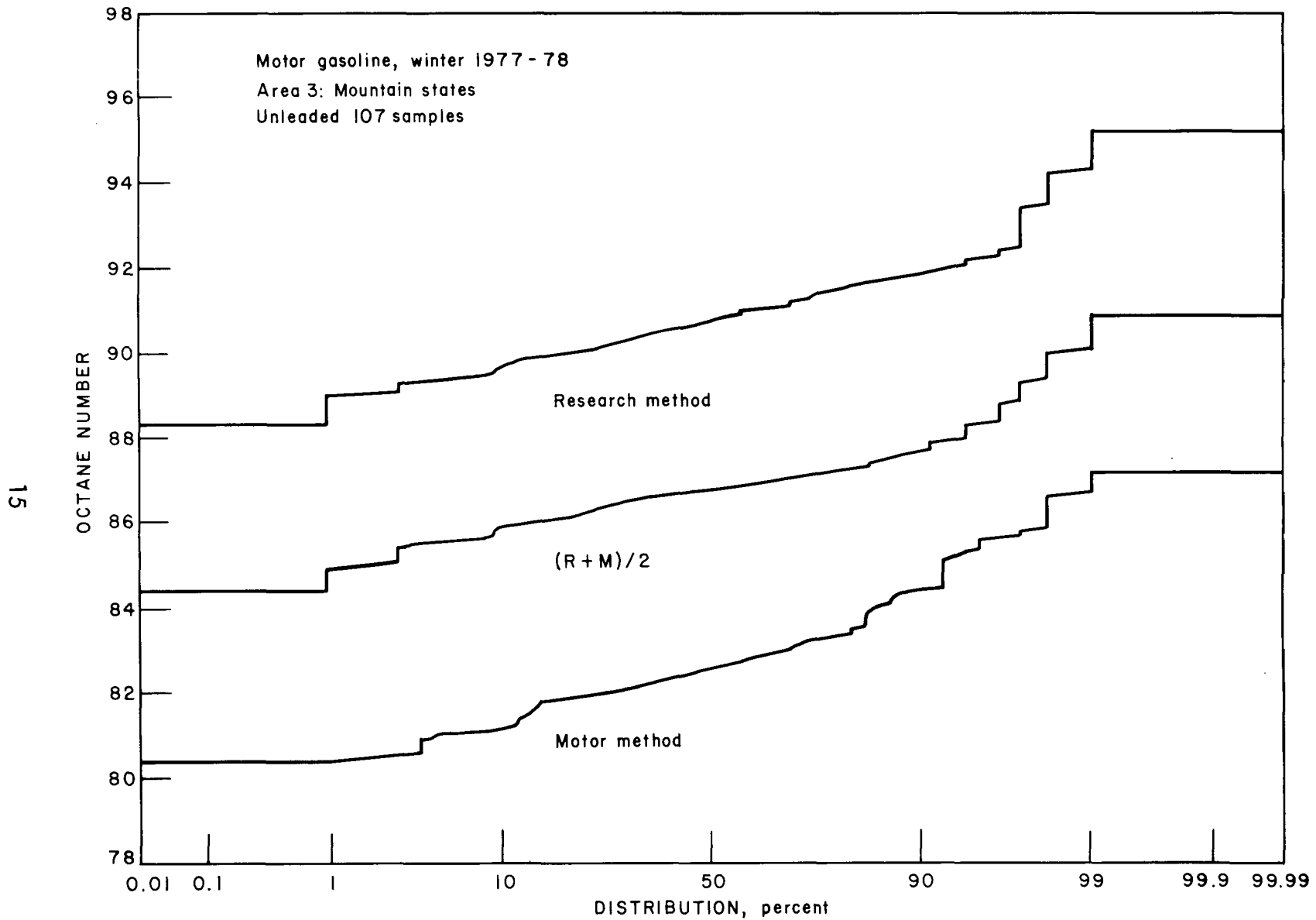


FIGURE 9.- Area 3: Unleaded motor gasoline octane number distributions.

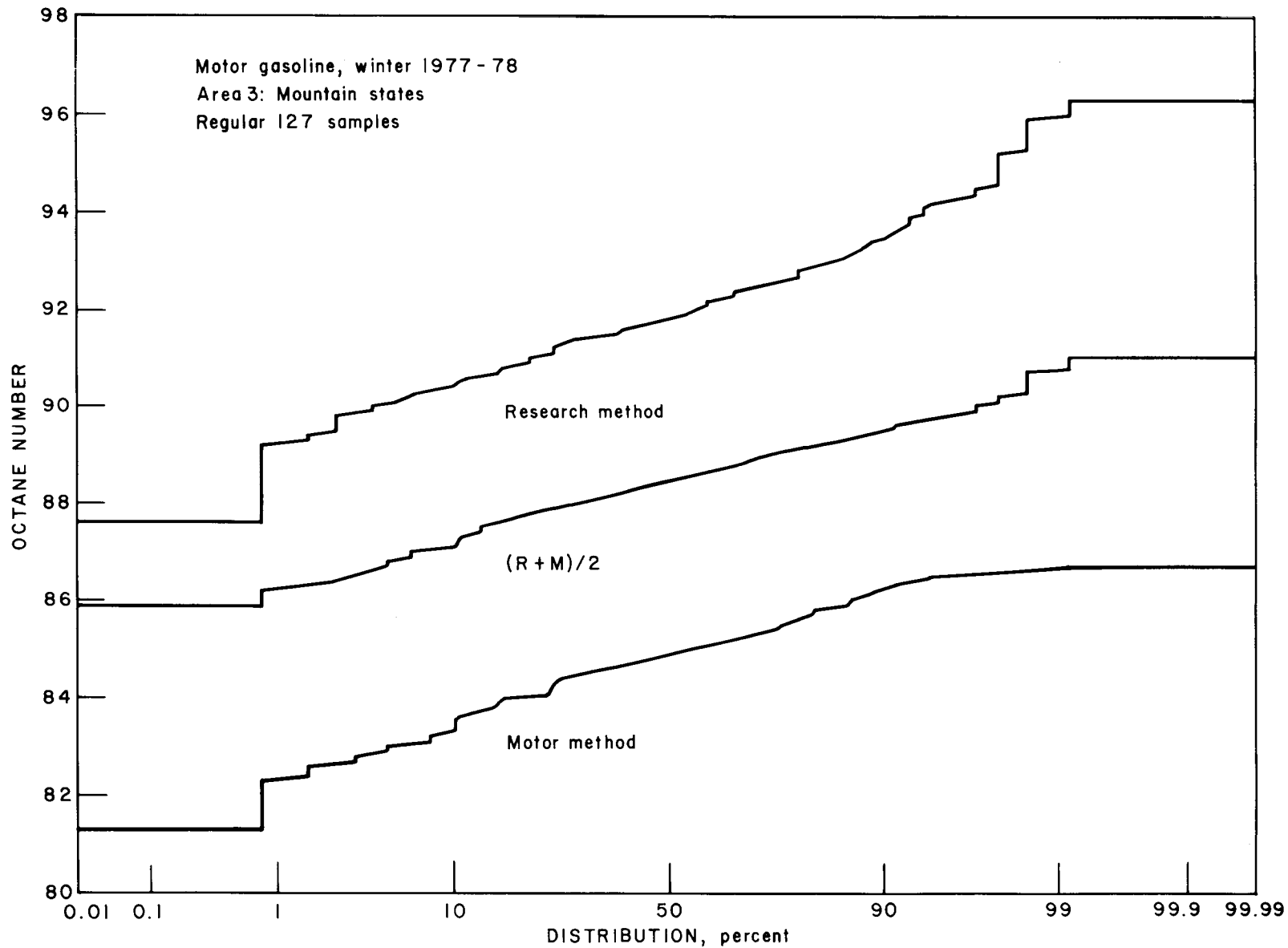


FIGURE 10.- Area 3: Regular motor gasoline octane number distributions.

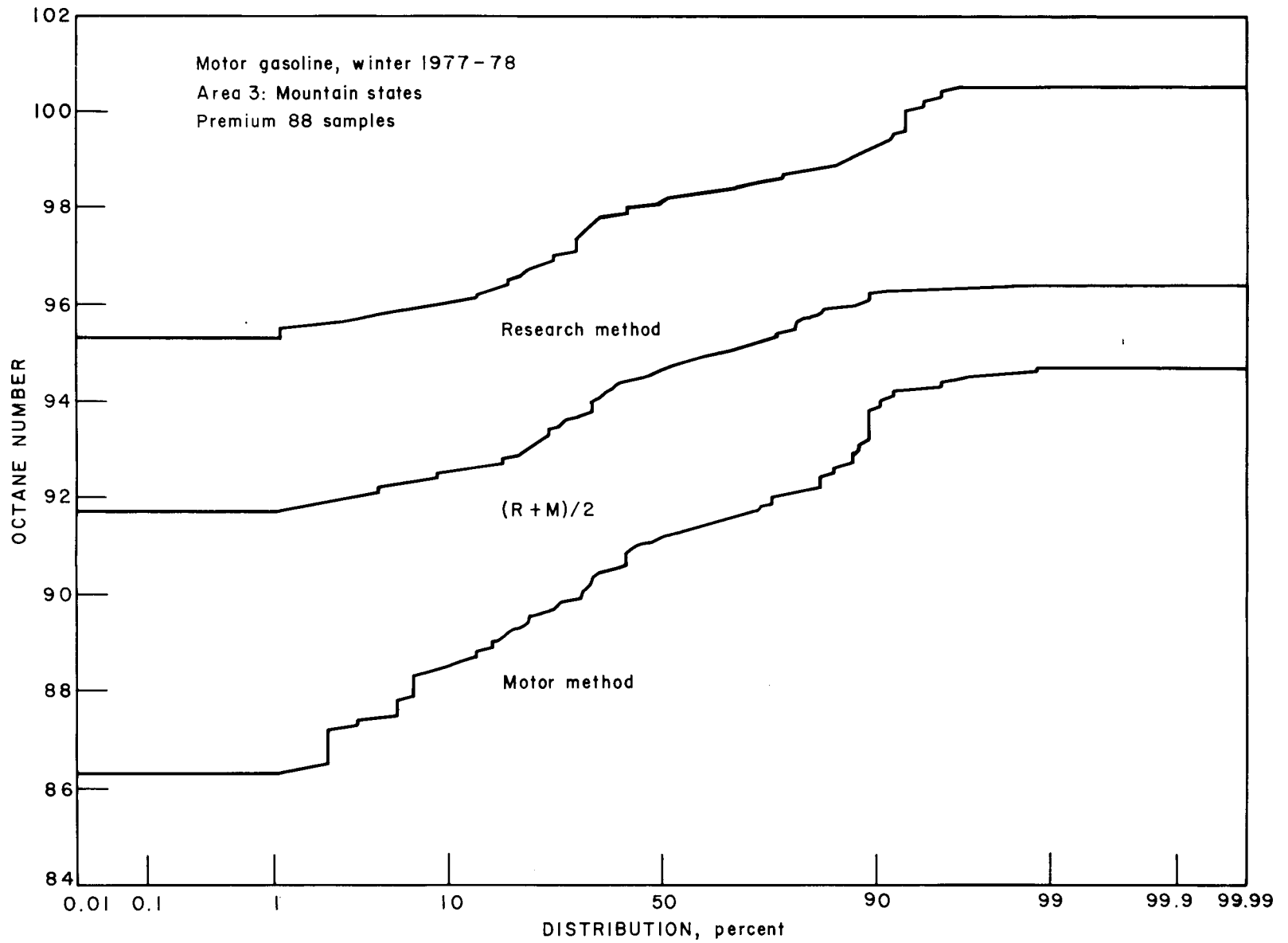


FIGURE 11.-Area 3: Premium motor gasoline octane number distributions.

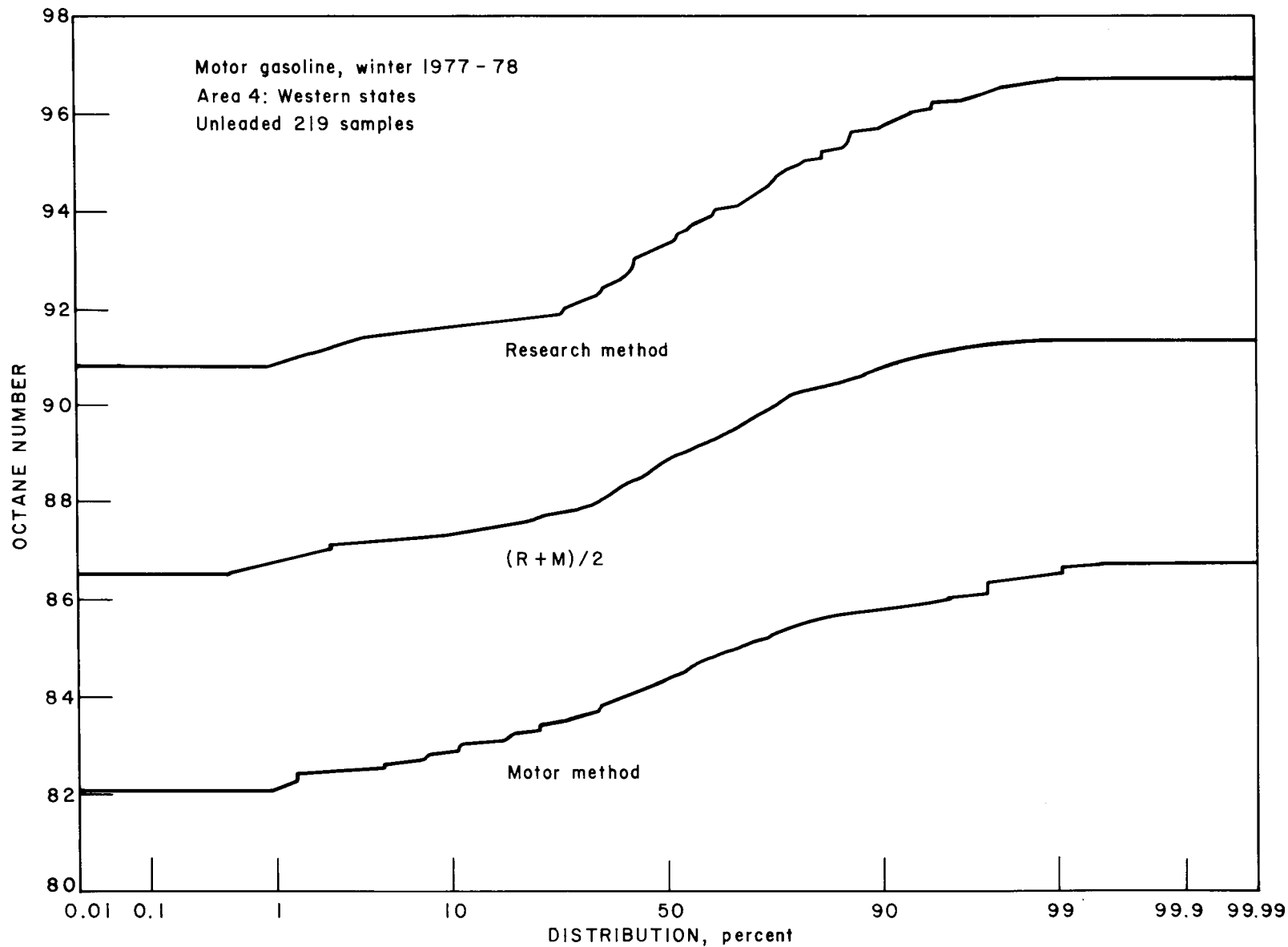


FIGURE 12.-Area 4: Unleaded motor gasoline octane number distributions.

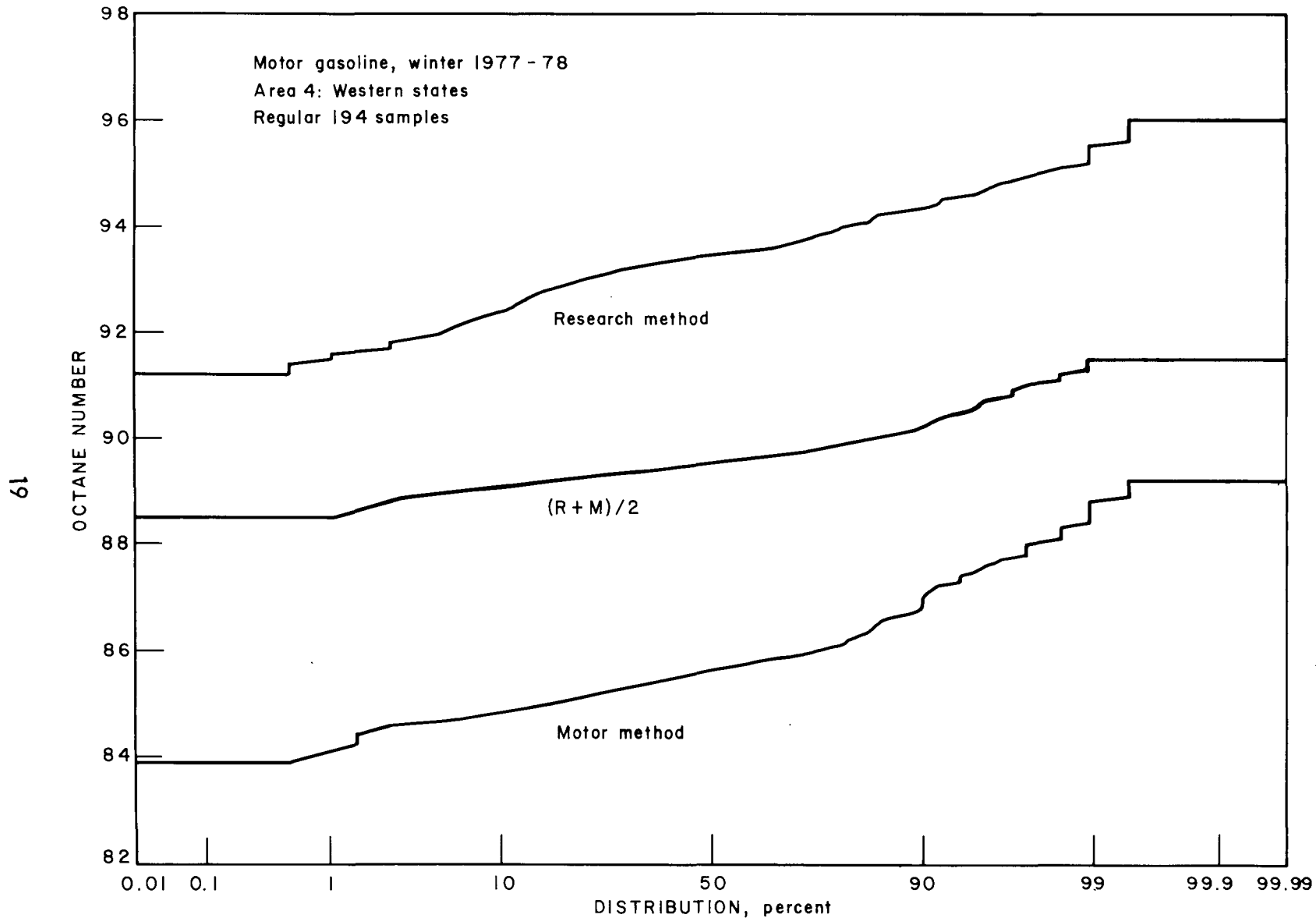


FIGURE 13.-Area 4: Regular motor gasoline octane number distributions.

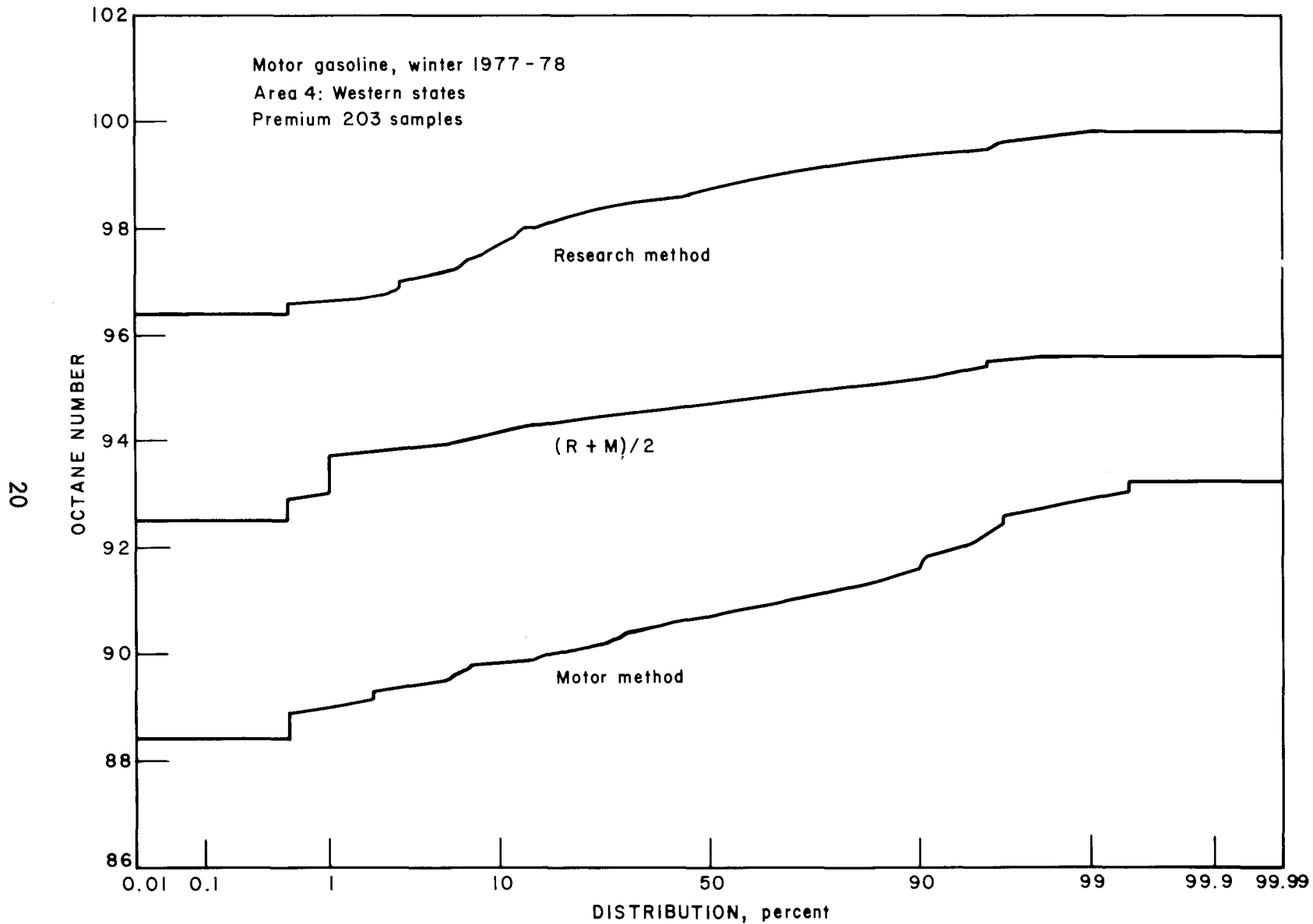


FIGURE 14.- Area 4: Premium motor gasoline octane number distributions.

TABLE 1. - Summary of values, motor gasoline survey, winter 1977-78

Test	ASTM method	Grades of motor gasolines		
		Unleaded Average	Regular Average	Premium Average
Gravity, °API	D287	60.9	62.2	62.6
Corrosion, No.	D130	1	1	1
Sulfur content, wt %	D1266	0.028	0.038	0.028
Gum, mg/100 ml	D381	1	1	1
Benzene	D3606	1.19	1.28	1.11
Manganese, AA, g/gal		0.03	-	-
Lead, g/gal	D526	-	1.56	2.15
Octane number, Research	D2699	92.9	93.2	98.8
Octane number, Motor	D2700	83.9	85.7	91.0
Antiknock index [(R+M)/2]		88.4	89.5	94.9
Reid vapor pressure, lb	D323	12.5	12.4	12.3
Vapor-liquid ratio of 20, °F	D439	122	120	122
Distillation	D86			
Temp, °F				
IBP		83	83	83
5% evaporated		95	95	95
10% Do.		107	107	108
20% Do.		130	127	131
30% Do.		157	150	158
50% Do.		212	201	210
70% Do.		259	258	256
90% Do.		329	334	328
95% Do.		363	370	363
End point		405	410	406
Residue, vol %		0.9	0.9	0.9
Loss, vol %		2.4	2.2	2.4

TABLE 2. - Summary of values, motor gasoline survey, winter 1976-77

Test	ASTM method	Grades of motor gasolines		
		Unleaded Average	Regular Average	Premium Average
Gravity, °API	D287	61.7	62.6	63.2
Corrosion, No.	D130	1	1	1
Sulfur content, wt %	D1266	0.028	0.040	0.027
Gum, mg/100 ml	D381	1	1	1
Benzene	D3606	-	-	-
Manganese, AA, g/gal		0.03	-	-
Lead, g/gal	D526	-	1.71	2.28
Octane number, Research	D2699	92.6	93.2	98.8
Octane number, Motor	D2700	84.1	86.1	91.4
Antiknock index [(R+M)/2]		88.4	89.7	95.1
Reid vapor pressure, lb	D323	12.4	12.4	12.2
Vapor-liquid ratio of 20, °F	D439	122	120	123
Distillation	D86			
Temp, °F				
IBP		83	83	83
5% evaporated		95	95	95
10% Do.		107	107	108
20% Do.		131	128	131
30% Do.		158	151	158
50% Do.		212	202	210
70% Do.		257	259	254
90% Do.		327	335	326
95% Do.		362	369	361
End point		404	409	404
Residue, vol %		0.9	0.9	0.9
Loss, vol %		2.2	2.1	2.2

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS

DIST. 1 NORTHEAST
 MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS		MANGA- NESE AA G/GAL
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										EP	% %	
											PERCENT EVAPORATED												
											18P	5	10	20	30	50	70	90	95				
1	2	58.3	0.008	-	-	93.6	83.9	88.8	12.4	121	81	92	103	127	157	217	268	331	362	411	0.5	2.5	-
2	2	57.2	.007	-	-	93.6	83.2	88.4	13.5	118	74	83	95	123	163	233	279	344	380	426	1.3	3.2	-
3	2	59.3	.014	-	-	92.5	83.1	87.8	13.4	116	81	88	97	119	147	211	255	330	358	408	.8	2.2	-
4	2	59.6	.008	-	-	96.4	86.1	91.3	13.4	116	80	88	98	117	142	210	246	310	342	390	.8	3.2	-
5	1	61.9	-	-	-	92.1	83.0	87.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	1	57.6	.016	-	1.00	91.9	83.0	87.5	12.5	120	84	97	105	125	150	212	257	327	368	397	1.0	1.5	-
7	2	62.1	.009	-	-	94.3	83.5	88.9	11.8	122	80	93	105	126	149	207	252	320	349	393	.7	1.8	-
8	3	59.6	.019	0	1.00	92.2	83.0	87.6	12.8	122	81	100	110	135	165	220	267	341	353	415	.9	2.4	0.04
9	1	59.3	-	-	-	93.0	83.8	88.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	2	60.5	.012	-	-	94.4	84.2	89.3	15.0	109	76	84	94	114	138	196	260	325	368	400	.5	2.5	-
11	3	62.7	.013	2	1.00	91.8	83.2	87.5	12.8	120	83	84	108	128	153	206	243	313	347	382	1.0	2.0	.06
12	1	64.1	.009	-	-	91.6	83.4	87.5	15.3	107	75	82	91	113	140	194	262	330	345	382	1.8	3.2	-
13	1	61.2	-	-	-	93.2	82.7	88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	2	59.2	.007	-	.65	99.9	87.5	93.7	13.3	115	82	90	99	118	141	199	232	304	334	371	.7	1.3	-
AVERAGE		60.2	.011	1	.91	93.6	83.8	88.7	13.3	117	80	89	100	122	150	210	256	325	355	398	.9	2.3	.05
MINIMUM		57.2	.007	0	.65	91.6	82.7	87.5	11.8	107													.04
MAXIMUM		64.1	.019	2	1.00	99.9	87.5	93.7	15.3	122													.06
SAMPLES	25																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 1 NORTHEAST--CONTINUED
 MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MDY, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
15	3	62.4	0.041	2	0.80	1.37	94.0	85.7	89.9	15.1	109	80	81	95	113	139	202	264	346	371	416	1.1	1.9
16	2	64.2	.023	-	-	1.61	94.6	86.2	90.4	15.0	107	74	82	91	110	134	189	250	329	359	394	1.2	2.8
17	1	63.6	-	-	-	1.45	94.2	86.7	90.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	1	61.9	-	-	-	1.12	93.4	85.7	89.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	2	63.4	.038	1	1.30	1.90	93.7	86.5	90.1	13.6	115	78	83	99	121	144	202	271	352	367	410	.9	2.4
20	2	64.0	.031	-	.95	2.43	93.8	86.2	90.0	13.5	112	84	93	100	119	138	181	242	334	362	406	.9	2.1
21	2	60.1	.017	-	-	1.32	94.2	84.8	89.5	13.4	117	76	85	97	126	157	219	285	355	388	431	1.1	2.4
22	2	62.7	.008	-	-	2.30	94.3	87.6	91.0	11.6	122	83	98	107	128	149	196	255	325	350	397	.6	1.4
23	1	62.1	-	-	-	1.49	93.3	85.3	89.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	2	61.3	.029	-	-	1.82	93.2	86.3	89.8	12.5	118	80	89	99	119	146	207	284	353	385	418	.7	1.3
25	2	64.1	.039	-	-	1.44	94.2	85.6	89.9	11.0	122	87	103	112	126	142	182	244	331	364	395	.5	1.5
26	2	62.2	.017	-	-	1.86	94.0	86.6	90.3	11.7	122	84	100	111	129	149	196	257	321	357	393	.6	1.4
AVERAGE		62.7	.027	2	1.02	1.68	93.9	86.1	90.0	13.0	116	81	90	101	121	144	197	261	338	367	407	.8	1.9
MINIMUM		60.1	.008	1	.80	1.12	93.2	84.8	89.3	11.0	107												
MAXIMUM		64.2	.041	2	1.30	2.43	94.6	87.6	91.0	15.1	122												

SAMPLES 22

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 1 NORTHEAST--CONTINUED
 MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
27	1	63.4	0.020	-	-	2.08	99.0	91.1	95.1	13.3	117	82	95	104	124	148	204	250	329	358	406	0.3	3.7
28	2	62.3	.012	-	-	2.05	99.3	91.5	95.4	13.3	118	80	91	103	128	159	210	261	333	376	404	1.2	2.8
29	2	60.2	.052	-	-	3.43	100.1	91.0	95.6	10.0	131	90	104	115	135	153	210	264	314	335	364	.4	1.6
30	1	62.9	-	-	-	1.88	98.9	91.3	95.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	2	62.5	.013	-	-	2.44	99.4	91.4	95.4	13.6	115	82	89	101	121	145	200	252	326	361	402	1.1	2.9
32	2	66.1	.034	-	-	1.29	97.4	89.7	93.6	15.0	108	76	86	95	114	136	187	242	312	357	398	1.2	3.2
33	2	62.6	.023	-	-	2.57	98.8	88.4	93.6	10.6	126	86	102	113	131	152	196	266	338	363	398	.3	1.7
34	2	62.2	.013	-	-	2.91	98.7	91.2	95.0	13.2	115	82	89	98	116	137	202	268	340	373	403	.7	1.8
35	3	61.0	.019	3	0.90	1.60	98.9	91.3	95.1	14.7	112	82	83	96	116	143	214	271	320	354	389	1.1	2.2
36	2	63.9	.022	-	-	2.85	98.8	91.6	95.2	13.8	116	82	94	104	122	144	214	256	330	374	411	.9	2.1
AVERAGE		62.7	.023	3	.90	2.31	98.9	90.9	94.9	13.1	118	82	93	103	123	146	204	259	327	361	397	.8	2.4
MINIMUM		60.2	.012	3	.90	1.29	97.4	88.4	93.6	10.0	108												
MAXIMUM		66.1	.052	3	.90	3.43	100.1	91.6	95.6	15.0	131												

SAMPLES 19

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 2 MID-ATLANTIC COAST
R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %	
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
37	10	61.2	0.022	0	1.10	92.0	83.2	87.6	12.5	121	82	95	107	129	155	210	264	343	374	420	0.9	2.0	0.04
38	10	60.4	.017	2	1.10	92.7	84.1	88.4	12.6	120	82	95	107	125	148	207	273	337	366	416	1.1	1.9	.04
39	6	60.5	.013	1	1.65	93.0	83.4	88.2	14.2	116	84	91	104	129	158	216	272	334	373	409	1.0	3.8	.04
40	11	58.5	.010	1	.39	99.5	87.8	93.7	12.9	117	81	93	103	121	142	204	254	331	356	390	.9	1.7	.05
41	8	59.0	.005	1	.80	96.4	85.9	91.2	12.9	119	82	92	104	124	148	210	252	312	353	391	.7	2.1	.06
42	10	58.1	.013	1	2.75	93.1	83.8	88.5	12.0	122	84	95	106	129	157	210	263	328	359	406	1.0	2.7	.05
43	1	56.0	-	2	-	91.8	83.6	87.7	12.3	126	84	92	108	139	176	237	292	356	393	433	1.5	2.5	-
44	11	59.0	.017	2	.49	93.2	83.8	88.5	12.2	125	83	95	108	133	164	229	277	339	372	415	1.0	2.3	.02
45	3	61.0	.030	-	-	92.4	83.6	88.0	11.7	123	82	94	105	126	152	208	263	343	375	408	.5	2.9	-
46	12	59.3	.019	2	1.41	92.4	83.2	87.8	13.4	120	82	91	108	133	158	218	269	337	362	411	1.1	2.7	.05
47	3	61.1	.023	1	1.00	92.2	83.2	87.7	13.6	117	74	87	98	123	151	217	274	349	387	430	.9	2.9	.05
48	10	62.1	.016	1	1.15	92.3	83.5	87.9	14.3	113	80	88	98	118	148	212	273	351	390	421	1.1	3.5	.07
49	1	59.0	.005	4	.70	95.9	86.0	91.0	13.0	119	84	94	104	128	154	212	254	346	372	395	1.3	3.9	.06
50	4	61.3	.034	-	-	91.9	83.3	87.6	13.0	117	83	91	102	123	145	205	259	336	370	409	1.1	1.6	-
51	8	62.7	.037	2	1.10	94.5	84.1	89.3	11.8	122	82	96	106	126	149	205	257	325	354	396	.8	1.9	.04
52	11	60.6	.021	0	.94	92.2	83.4	87.8	12.7	120	82	92	104	126	153	212	263	339	375	416	1.0	2.1	.02
53	10	59.8	.029	3	1.23	94.3	84.0	89.2	14.0	114	79	88	98	117	142	207	265	331	358	400	.9	2.7	.04
54	7	60.7	.021	1	1.10	92.1	83.3	87.7	13.7	115	79	88	98	119	148	210	271	341	374	416	.8	2.6	.07
55	2	61.5	.019	-	-	91.8	82.9	87.4	12.9	119	82	93	103	126	153	210	265	338	381	416	.4	1.6	-
56	11	63.4	.007	1	.63	92.4	83.4	87.9	12.7	120	83	97	109	132	157	206	249	305	330	373	.9	1.5	.00
AVERAGE		60.3	.019	1	1.10	93.3	84.0	88.7	12.9	119	82	92	104	126	153	212	265	336	369	409	.9	2.4	.04
MINIMUM		56.0	.005	0	.39	91.8	82.9	87.4	11.7	113													.00
MAXIMUM		63.4	.037	4	2.75	99.5	87.8	93.7	14.3	126													.07

SAMPLES 149

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 2 MID-ATLANTIC COAST--CONTINUED
 R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
57	3	62.3	0.035	-	-	1.92	93.1	85.8	89.5	12.4	119	83	94	104	124	144	200	262	349	382	419	0.5	2.0
58	10	62.1	.019	1	2.50	2.52	94.0	87.3	90.7	12.1	120	83	96	106	123	143	195	259	329	356	403	1.0	2.0
59	9	61.2	.018	4	.80	1.99	93.3	86.7	90.0	12.1	121	82	93	103	123	148	211	276	349	379	414	.7	2.1
60	11	63.3	.021	0	.67	1.65	93.8	86.2	90.0	11.7	123	85	100	112	130	153	199	253	320	345	389	.9	1.8
61	9	62.6	.029	1	1.30	1.82	92.6	86.2	89.4	12.6	118	83	94	106	124	147	198	257	339	374	421	.9	2.2
62	2	62.2	.032	-	-	1.58	93.0	85.8	89.4	12.9	118	81	96	106	127	147	200	258	341	376	416	.8	2.2
63	7	61.8	.030	0	.60	1.66	93.5	85.8	89.7	12.7	119	83	93	104	124	146	206	267	345	382	419	.6	2.4
64	1	59.6	-	0	-	.81	93.4	86.0	89.7	12.6	122	87	95	108	130	157	216	280	358	398	449	1.0	2.0
65	6	62.3	.027	0	1.20	1.78	93.9	86.0	90.0	13.5	115	78	86	98	120	145	200	267	344	381	415	1.0	3.5
66	10	62.5	.035	1	1.30	1.73	93.2	86.0	89.6	12.9	118	82	93	104	125	148	204	266	345	380	426	.8	1.8
67	11	62.3	.037	1	1.06	2.17	93.3	86.3	89.8	13.5	116	81	92	104	123	146	202	261	344	378	422	.9	2.6
68	9	62.9	.048	3	1.10	1.82	94.0	86.0	90.0	14.0	112	79	86	98	118	141	198	264	339	371	409	.9	2.6
69	12	62.9	.016	2	.63	1.52	93.6	86.4	90.0	13.8	114	80	86	97	117	142	202	272	355	386	425	1.0	3.2
70	11	60.5	.028	1	.51	1.63	93.9	85.6	89.8	12.7	122	83	94	108	132	162	220	278	356	391	426	1.0	2.3
71	11	62.3	.030	1	1.09	2.03	93.3	85.8	89.6	12.5	119	84	94	104	124	148	201	262	346	381	424	.9	1.8
72	5	62.7	.029	-	-	1.74	93.1	85.9	89.5	12.7	117	83	91	101	120	142	201	255	333	367	414	.8	1.6
AVERAGE		62.1	.029	1	1.06	1.77	93.4	86.1	89.8	12.8	118	82	93	104	124	147	203	265	343	377	418	.9	2.3
MINIMUM		59.6	.016	0	.51	.81	92.6	85.6	89.4	11.7	112												
MAXIMUM		63.3	.048	4	2.50	2.52	94.0	87.3	90.7	14.0	123												
SAMPLES	127																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 3 SOUTHEAST
 N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	MANGA- NESE AA G/GAL	
						RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
89	1	58.2	-	-	-	95.5	85.5	90.5	12.0	123	84	95	107	129	155	215	257	317	352	404	0.3	2.2	-
90	2	56.9	-	-	-	92.8	84.0	88.4	9.0	147	94	109	129	161	199	259	304	344	368	420	.5	2.0	-
91	3	60.8	-	-	-	91.9	82.8	87.4	13.2	118	83	92	102	122	147	211	269	342	369	424	.5	2.0	-
92	1	60.0	-	-	-	92.6	83.0	87.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	2	61.4	-	-	-	92.2	82.7	87.5	12.6	121	84	99	109	129	157	210	257	339	373	421	.7	2.3	-
94	6	60.2	0.017	1	0.63	92.3	83.2	87.8	11.0	127	84	96	109	130	154	212	269	337	362	405	1.0	1.7	-
95	6	58.4	.003	0	-	96.5	86.3	91.4	11.7	124	83	94	109	132	154	208	261	319	354	390	1.3	1.7	-
96	3	62.6	.013	1	-	91.6	83.7	87.7	10.7	127	87	99	110	127	147	203	253	345	380	423	.9	1.7	-
97	7	60.5	.013	1	-	91.9	83.0	87.5	11.9	124	84	95	108	136	160	208	272	343	367	416	.6	1.7	-
98	4	60.4	.010	2	1.00	91.8	83.4	87.6	10.5	131	88	100	115	137	162	215	269	332	376	396	.5	2.0	0.06
99	5	61.0	.006	-	-	92.4	83.6	88.0	11.1	128	86	100	111	135	165	216	264	322	350	392	.9	2.1	-
100	8	57.7	.006	1	-	92.6	83.5	88.1	11.4	126	83	97	109	130	153	219	272	329	352	390	1.1	1.9	-
101	6	59.7	.012	-	-	93.0	83.8	88.4	11.8	127	84	101	113	138	168	221	272	343	379	417	.7	1.5	-
102	5	58.7	.010	-	-	94.5	83.7	89.1	11.8	125	85	98	110	132	155	215	248	297	348	382	.7	1.6	-
103	2	61.5	-	-	-	91.8	82.7	87.3	11.8	123	85	96	107	130	155	208	260	332	353	420	1.4	3.6	-
104	3	60.0	.013	-	-	92.1	82.6	87.4	11.6	127	81	97	110	137	168	227	271	330	363	391	.7	1.3	-
105	5	59.7	-	0	-	92.3	83.0	87.7	11.1	129	84	102	113	136	163	224	272	335	364	406	.9	1.3	-
106	7	56.4	.006	3	.42	99.9	87.8	93.9	11.3	126	83	101	112	132	155	210	256	336	353	390	.9	.9	-
107	7	61.6	.024	0	1.70	92.0	83.2	87.6	11.6	127	85	101	113	138	165	216	271	342	369	416	.7	1.4	.04
108	4	60.3	.012	-	-	91.8	83.1	87.5	12.2	122	85	97	107	126	153	211	264	333	362	410	.8	2.3	-
109	4	58.4	.016	0	-	92.4	83.3	87.9	10.0	135	92	106	118	141	168	222	272	332	358	407	1.0	1.1	-
AVERAGE		59.7	.012	1	.94	93.0	83.7	88.4	11.4	127	85	99	111	134	160	217	267	332	363	406	.8	1.8	.05
MINIMUM		56.4	.003	0	.42	91.6	82.6	87.3	9.0	118													.04
MAXIMUM		62.6	.024	3	1.70	99.9	87.8	93.9	13.2	147													.06

SAMPLES 91

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 3 SOUTHEAST--CONTINUED
 N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
							IBP	5	10			20	30	50	70	90	95	EP					
110	7	60.4	0.024	-	-	1.62	93.8	85.6	89.7	11.8	124	84	96	108	129	154	212	267	334	367	409	0.9	1.9
111	8	62.8	.038	2	1.44	2.61	93.5	86.1	89.8	11.4	123	84	97	109	129	149	197	256	340	374	413	.8	1.7
112	4	61.4	.014	-	-	1.93	93.5	85.9	89.7	12.0	122	83	97	105	127	153	207	264	337	378	413	.7	1.9
113	9	60.8	.020	0	-	1.88	93.5	86.3	89.9	11.5	125	84	97	108	130	156	213	269	347	378	407	1.0	1.2
114	3	60.6	.048	-	-	2.28	93.6	86.2	89.9	12.1	122	84	96	108	132	161	210	260	333	371	414	.7	3.3
115	1	64.0	-	-	-	2.32	93.9	86.4	90.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
116	9	61.2	.006	1	-	1.98	93.6	86.8	90.2	10.6	126	83	96	108	129	151	199	259	327	354	399	.7	1.8
117	3	63.1	-	-	-	1.92	93.6	86.1	89.9	12.0	121	84	100	110	130	152	199	258	336	383	410	.7	1.8
118	7	61.9	.027	1	1.40	1.99	93.2	86.4	89.8	11.4	127	84	99	111	134	158	215	272	348	377	420	.9	1.9
119	4	61.2	.026	3	.90	1.72	93.6	86.5	90.1	12.2	123	81	96	106	129	158	219	270	332	368	410	.9	1.6
120	2	61.8	-	-	-	1.30	93.3	85.2	89.3	11.9	124	84	100	111	132	157	209	271	343	377	430	.4	1.6
121	6	62.1	.020	-	-	1.91	93.6	86.5	90.1	12.1	120	82	93	103	121	143	200	260	338	370	406	.8	1.8
122	3	61.2	.010	0	-	1.50	93.3	86.4	89.9	10.0	132	89	105	116	134	154	210	284	364	403	427	1.3	.3
123	7	62.3	.010	1	-	2.20	93.4	86.3	89.9	11.5	123	86	102	113	132	150	194	246	343	387	422	1.1	.8
124	2	60.2	-	-	-	2.77	93.8	87.3	90.6	9.5	134	94	112	123	143	161	203	254	327	353	405	.6	1.4
125	6	63.5	.013	-	-	2.43	93.6	86.4	90.0	11.7	124	84	97	110	133	157	208	264	335	367	408	.9	1.9
126	2	62.9	-	-	-	2.24	92.3	84.8	88.6	11.0	126	84	100	111	130	154	204	256	331	372	418	.3	1.7
127	4	61.3	.021	0	-	2.53	93.9	86.3	90.1	11.0	126	87	99	110	128	149	204	273	341	373	415	.8	1.7
AVERAGE		61.8	.021	1	1.25	2.06	93.5	86.2	89.9	11.4	125	85	99	110	131	154	206	264	339	374	413	.8	1.7
MINIMUM		60.2	.006	0	.90	1.30	92.3	84.8	88.6	9.5	120												
MAXIMUM		64.0	.048	3	1.44	2.77	93.9	87.3	90.6	12.2	134												

SAMPLES 87

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 3 SOUTHEAST--CONTINUED
N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MDT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
128	3	62.8	0.013	1	-	2.73	99.2	93.5	96.4	10.3	131	87	102	114	135	159	214	266	347	380	418	0.9	0.9
129	7	61.0	.012	1	-	2.70	98.7	90.8	94.8	11.4	125	85	98	109	129	153	211	268	344	375	407	.8	1.5
130	1	61.4	-	-	-	2.21	99.2	91.0	95.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
131	3	61.6	.019	3	0.80	1.86	99.0	91.1	95.1	12.8	119	85	-	101	120	146	214	-	314	-	380	1.0	1.0
132	5	60.6	.010	1	-	2.66	99.0	91.3	95.2	10.3	133	87	105	118	140	169	219	265	332	364	406	1.0	.9
133	5	58.0	.004	1	-	2.68	99.2	91.7	95.5	10.1	134	86	102	117	142	166	220	270	345	377	422	.9	1.6
134	1	61.5	-	-	-	2.28	99.2	91.1	95.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	2	61.9	-	-	-	2.24	99.1	91.2	95.2	10.6	127	84	96	107	127	154	212	254	325	357	398	.4	1.6
136	1	55.5	-	-	-	4.13	99.0	91.4	95.2	9.4	138	89	105	118	141	168	236	285	349	386	421	.8	1.2
137	5	61.6	.016	-	-	2.24	98.3	90.4	94.4	11.5	122	86	98	107	125	146	198	247	315	346	392	.7	1.4
138	1	59.7	-	-	-	2.33	99.2	91.0	95.1	11.9	121	82	89	100	123	148	209	256	321	351	401	.5	2.5
139	8	59.3	.005	1	-	2.24	99.0	91.2	95.1	10.5	130	85	101	112	133	155	214	258	319	346	393	.7	1.6
140	3	60.5	.010	-	-	2.69	99.3	91.6	95.5	12.0	123	83	99	110	132	155	210	251	324	353	401	.7	1.6
141	6	59.5	.015	-	-	2.53	99.3	90.9	95.1	11.0	129	85	99	113	138	166	219	268	337	369	404	.7	1.7
142	5	61.4	.011	-	-	2.76	99.1	91.3	95.2	11.2	127	84	97	110	133	160	214	257	315	344	376	.8	2.2
AVERAGE		60.4	.012	1	.80	2.55	99.1	91.3	95.2	11.0	128	85	99	110	132	157	215	262	330	362	401	.8	1.5
MINIMUM		55.5	.004	1	.80	1.86	98.3	90.4	94.4	9.4	119												
MAXIMUM		62.8	.019	3	.80	4.13	99.3	93.5	96.4	12.8	138												
SAMPLES	56																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN
 OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %	
											PERCENT EVAPORATED												
											I&P	5	10	20	30	50	70	90	95	EP			
143	1	62.7	-	-	-	91.8	82.0	86.9	12.6	118	84	95	103	122	149	202	257	336	376	410	1.2	1.8	-
144	2	56.9	-	-	-	93.4	83.2	88.3	12.7	123	83	95	105	131	159	231	289	330	348	414	.8	2.2	-
145	4	59.9	0.016	-	-	92.6	83.9	88.3	12.8	121	82	94	106	129	156	216	274	336	370	413	1.2	1.9	-
146	17	62.7	.012	3	1.33	92.0	83.5	87.8	14.5	109	79	81	94	114	138	193	251	322	349	406	1.0	4.8	0.04
147	1	62.7	-	-	-	91.9	82.9	87.4	13.4	114	80	87	97	117	138	201	256	341	381	418	.8	1.7	-
148	1	62.5	-	-	-	96.4	86.9	91.7	13.5	117	83	90	102	123	135	210	242	296	335	388	.6	2.9	-
149	3	63.8	-	-	-	92.3	82.9	87.6	12.6	118	80	91	101	124	147	199	242	308	334	377	.8	1.7	-
150	2	64.1	.025	-	-	92.3	83.3	87.8	12.4	118	81	91	101	122	147	200	246	342	380	420	1.4	1.6	-
151	2	64.3	.024	0	.97	91.8	83.4	87.6	14.7	112	81	87	97	116	137	211	263	334	367	421	1.0	3.6	.14
152	5	59.7	.013	2	3.02	92.4	83.5	88.0	12.8	121	83	96	108	134	162	210	260	319	361	390	.9	2.6	.02
153	4	63.7	.030	-	-	92.1	83.0	87.6	13.9	113	82	91	98	118	140	199	257	345	379	429	.6	2.2	-
154	4	60.8	.024	-	-	94.2	83.7	89.0	15.4	111	79	88	99	120	144	206	263	334	370	408	.7	2.3	-
155	1	58.7	-	-	.30	99.8	87.8	93.8	10.7	124	86	93	102	123	137	198	251	328	346	387	.7	1.8	-
156	1	64.4	.031	-	.90	92.3	82.8	87.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
157	1	61.0	-	-	-	92.0	83.3	87.7	15.8	107	76	79	90	115	141	201	262	337	362	428	.3	5.8	-
AVERAGE		61.9	.022	2	1.30	93.2	83.7	88.5	13.4	116	81	90	100	122	145	206	258	329	361	408	.9	2.6	.07
MINIMUM		56.9	.012	0	.30	91.8	82.0	86.9	10.7	107													.02
MAXIMUM		64.4	.031	3	3.02	99.8	87.8	93.8	15.8	124													.14
SAMPLES	49																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN--CONTINUED

OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
158	2	62.3	0.039	-	1.25	1.55	93.5	85.5	89.5	11.2	122	84	103	109	126	146	189	245	323	359	436	1.0	2.0
159	5	63.5	.019	2	.31	.99	93.1	85.6	89.4	13.5	116	86	96	108	126	145	194	263	318	372	394	.8	1.5
160	2	58.9	-	-	-	1.51	92.9	84.8	88.9	10.4	134	88	102	118	144	177	233	288	368	417	474	.9	2.1
161	2	61.2	.040	-	-	.68	93.8	84.1	89.0	12.7	117	84	93	102	122	144	196	269	351	389	431	1.1	1.9
162	3	62.3	-	-	-	-	93.5	86.5	90.0	14.5	110	77	87	97	117	140	193	255	338	372	414	.9	3.5
163	1	63.2	-	-	-	1.07	93.6	86.0	89.8	12.8	116	84	91	100	120	140	195	252	330	366	404	1.0	2.0
164	1	60.7	-	-	-	1.07	93.4	86.4	89.9	11.4	122	80	92	100	119	143	206	270	353	395	424	.8	1.2
165	17	62.0	.013	2	1.48	.82	93.6	86.2	89.9	14.2	110	80	85	95	114	137	191	251	324	351	407	1.0	4.5
166	3	61.4	-	-	-	1.33	93.1	85.8	89.5	13.1	117	81	92	101	122	144	201	260	339	376	412	.9	1.6
167	3	61.8	.035	-	-	1.25	94.4	85.6	90.0	12.5	119	83	98	107	128	150	201	262	344	377	416	.6	1.9
168	4	65.1	.018	-	-	1.67	93.0	86.0	89.5	11.2	122	85	98	109	125	143	187	233	318	360	400	1.2	2.1
169	4	61.9	.040	-	-	1.13	93.8	85.5	89.7	13.6	114	81	91	101	118	144	200	261	340	376	419	.8	2.0
170	2	62.0	.026	1	1.07	1.60	92.8	85.9	89.4	13.0	118	82	91	100	122	149	208	270	349	396	434	.9	2.7
AVERAGE		62.0	.029	2	1.03	1.22	93.4	85.7	89.6	12.6	118	83	94	104	123	146	200	260	338	377	420	.9	2.2
MINIMUM		58.9	.013	1	.31	.68	92.8	84.1	88.9	10.4	110												
MAXIMUM		65.1	.040	2	1.48	1.67	94.4	86.5	90.0	14.5	134												
SAMPLES	49																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN--CONTINUED
 OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D297 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
							IBP	5	10			20	30	50	70	90	95	EP					
171	1	61.4	0.006	1	1.27	2.20	98.5	92.2	95.4	14.6	113	73	84	98	121	151	210	263	332	365	418	1.2	4.8
172	1	61.1	-	-	-	2.11	98.3	90.8	94.6	13.0	119	79	92	103	127	154	216	268	348	397	419	1.3	2.2
173	1	63.4	-	-	-	2.62	99.6	90.8	95.2	14.0	113	80	88	97	116	142	201	256	337	378	420	.7	2.3
174	1	63.0	-	-	-	-	98.3	91.8	95.1	15.0	106	76	83	91	109	132	184	248	324	350	397	.7	3.7
175	17	61.0	.006	2	1.44	1.98	98.5	91.4	95.0	14.8	109	81	82	94	115	142	201	254	322	347	410	1.0	5.8
176	3	63.2	-	-	-	1.73	98.7	90.4	94.6	14.0	115	77	89	100	121	149	209	264	340	386	418	.9	1.6
177	4	61.0	.040	1	2.56	2.24	99.0	91.2	95.1	13.0	121	81	97	110	137	164	210	251	324	363	396	.7	3.0
178	2	62.5	-	-	-	2.63	99.2	91.0	95.1	13.2	116	80	88	100	120	148	203	259	344	381	430	.5	2.0
179	3	62.8	-	-	-	2.50	99.3	91.0	95.2	11.3	127	83	100	113	134	160	213	257	329	362	412	.9	2.2
180	3	60.2	-	-	-	1.84	98.7	91.1	94.9	11.6	123	85	92	102	127	154	212	264	332	367	411	.5	2.3
181	2	62.4	-	-	-	2.14	99.4	90.4	94.9	12.8	117	78	90	101	121	150	198	236	324	365	404	1.0	1.0
182	1	62.5	-	-	-	1.84	98.8	90.8	94.8	12.7	116	84	91	98	118	139	194	254	312	360	391	.9	2.1
AVERAGE		62.0	.017	1	1.76	2.17	98.9	91.1	95.0	13.3	116	80	90	101	122	149	204	256	331	368	411	.9	2.8
MINIMUM		60.2	.006	1	1.27	1.73	98.3	90.4	94.6	11.3	106												
MAXIMUM		63.4	.040	2	2.56	2.63	99.6	92.2	95.4	15.0	127												

SAMPLES 39

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 5 MICHIGAN

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS		MANGA- NESE AA G/GAL
						RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)												
											PERCENT EVAPORATED										EP	%	
						IBP	5	10			20	30	50	70	90	95							
183	4	63.1	0.020	1	-	91.8	83.5	87.7	14.5	112	80	85	99	121	146	204	263	343	380	425	0.9	3.2	0.03
184	1	62.5	-	0	-	91.8	83.5	87.7	13.4	118	82	86	104	126	152	213	273	351	385	436	1.5	4.0	-
185	2	62.0	.036	-	-	92.2	83.1	87.7	14.0	115	82	88	101	120	148	212	269	344	387	426	.8	3.0	.03
186	4	60.2	.086	2	1.18	92.0	83.5	87.8	13.8	117	80	87	99	124	157	216	269	345	382	428	1.0	3.5	.05
187	3	61.9	.007	0	-	92.5	83.5	88.0	12.9	116	85	95	108	127	147	189	231	288	316	375	1.0	2.1	.00
188	1	61.0	.017	-	-	95.8	86.0	90.9	13.5	116	82	92	102	123	152	208	241	297	330	396	.9	2.1	-
189	4	66.7	.031	1	.33	92.9	83.6	88.3	13.3	116	83	91	104	125	151	202	242	328	370	414	1.1	3.1	.01
190	4	64.7	.031	0	.51	91.6	83.4	87.5	14.9	112	81	88	98	117	145	210	261	346	382	423	1.0	3.1	.05
191	23	60.8	.007	1	1.20	91.2	83.6	87.4	13.9	128	84	117	132	165	194	235	274	370	393	426	.5	3.0	.07
192	2	57.4	.000	1	-	96.2	85.9	91.1	12.1	127	84	95	114	141	173	226	272	331	362	402	1.2	2.7	.11
193	3	64.2	.073	0	-	91.5	83.2	87.4	14.3	112	80	85	98	118	145	205	258	348	382	418	1.2	3.2	.00
194	3	63.5	.026	0	-	91.6	83.5	87.6	15.1	109	79	83	94	111	136	205	270	358	391	437	1.0	3.5	.00
195	1	56.8	.012	-	-	95.9	85.4	90.7	12.3	125	87	97	110	138	175	227	270	331	357	408	.8	2.2	-
196	1	61.5	.010	-	-	96.2	86.4	91.3	13.1	120	82	91	107	128	158	214	248	306	347	401	.9	2.8	.00
197	3	60.0	.011	0	.30	98.6	87.7	93.2	13.0	122	84	93	106	130	162	230	277	331	363	406	1.2	2.7	.01
198	3	61.5	.051	0	1.60	91.9	82.7	87.3	13.2	118	84	93	106	128	152	207	258	325	361	404	.9	2.3	.06
AVERAGE		61.7	.028	1	.85	93.4	84.3	88.9	13.6	118	82	92	105	128	156	213	261	334	368	414	1.0	2.9	.03
MINIMUM		56.8	.000	0	.30	91.2	82.7	87.3	12.1	109													.00
MAXIMUM		66.7	.086	2	1.60	98.6	87.7	93.2	15.1	128													.11
SAMPLES	62																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 5 MICHIGAN--CONTINUED

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
199	3	62.4	0.019	0	-	1.86	92.8	86.1	89.5	12.8	120	81	93	107	128	152	209	266	332	366	418	1.2	2.1
200	57	63.9	.068	1	1.00	2.36	93.1	86.5	89.8	14.1	115	87	107	115	132	147	192	268	375	425	440	1.0	2.5
201	3	62.1	.062	1	1.60	2.52	93.5	85.9	89.7	11.8	123	85	101	114	134	157	203	254	339	380	418	1.2	1.2
202	4	62.2	.021	1	1.52	1.35	93.0	86.0	89.5	13.4	118	82	90	106	130	159	211	260	333	374	417	1.1	3.6
203	4	60.9	.155	0	1.82	1.29	93.8	84.9	89.4	13.5	116	80	89	100	122	149	206	270	356	406	434	1.0	2.4
204	3	61.2	.022	0	-	.93	93.5	85.6	89.6	14.6	113	81	86	98	119	147	213	280	364	402	436	1.0	2.8
205	4	61.6	.015	1	-	.95	93.4	85.9	89.7	14.2	113	79	84	98	120	146	202	259	338	375	418	1.1	3.7
206	2	61.6	.049	-	-	1.09	93.1	85.6	89.4	13.3	117	80	91	102	121	145	208	278	351	388	423	1.0	1.5
207	2	61.8	.031	-	-	1.25	93.4	86.0	89.7	13.4	118	82	92	106	128	154	212	267	343	383	427	1.1	2.3
208	3	62.3	.037	0	-	1.65	93.3	85.7	89.5	11.9	123	84	98	111	133	157	206	261	337	374	426	1.0	1.5
209	4	63.0	.023	1	1.13	1.49	93.6	85.9	89.8	14.0	113	79	85	98	117	142	203	265	342	376	421	1.0	3.5
210	1	63.6	-	0	-	2.27	93.2	86.8	90.0	12.7	120	87	93	111	134	157	205	254	336	377	427	1.5	3.5
AVERAGE		62.2	.046	1	1.41	1.58	93.3	85.9	89.6	13.3	117	82	92	106	127	151	206	265	346	386	425	1.1	2.6
MINIMUM		60.9	.015	0	1.00	.93	92.8	84.9	89.4	11.8	113												
MAXIMUM		63.9	.155	1	1.82	2.52	93.8	86.8	90.0	14.6	123												

SAMPLES 90

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 5 MICHIGAN--CONTINUED

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VDL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %
												PERCENT EVAPORATED										EP	
												IBP	5	10	20	30	50	70	90	95			
211	3	61.7	0.016	1	-	1.91	98.8	90.9	94.9	14.7	113	81	87	98	121	147	213	266	341	381	422	1.2	2.3
212	3	66.4	.145	2	0.37	2.24	98.4	91.1	94.8	12.5	121	81	87	105	136	167	210	258	352	392	431	1.3	4.0
213	3	67.6	.033	0	.22	1.61	99.1	91.2	95.2	13.2	117	80	91	100	124	152	212	246	337	379	419	.9	3.4
214	3	63.6	.051	0	-	2.42	98.6	91.1	94.9	12.8	121	81	88	103	130	163	221	258	349	390	435	1.2	2.8
215	3	58.7	.015	0	-	2.45	98.9	90.7	94.8	10.6	132	87	101	118	143	170	217	258	319	354	378	1.3	2.2
216	1	61.1	-	0	-	2.01	98.7	91.3	95.0	11.3	129	84	97	114	144	174	226	273	352	399	446	1.5	2.0
217	4	62.0	.010	1	-	2.19	98.7	91.5	95.1	14.4	112	76	81	96	120	150	209	256	334	371	418	1.1	4.2
218	2	62.9	.022	-	-	2.08	98.6	90.7	94.7	13.0	117	84	98	109	125	144	196	249	324	366	419	.7	1.8
219	11	64.5	.038	1	1.20	3.20	98.1	92.8	95.5	14.1	122	87	108	120	146	173	224	260	365	392	422	1.0	3.9
220	4	64.5	.026	1	.42	1.88	99.1	90.8	95.0	12.1	123	87	96	109	131	158	209	248	331	366	409	1.3	3.0
AVERAGE		63.3	.040	1	.55	2.20	98.7	91.2	95.0	12.9	121	83	93	107	132	160	214	257	340	379	420	1.2	3.0
MINIMUM		58.7	.010	0	.22	1.61	98.1	90.7	94.7	10.6	112												
MAXIMUM		67.6	.145	2	1.20	3.20	99.1	92.8	95.5	14.7	132												

SAMPLES 37

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 6 NORTH ILLINOIS
 NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %	
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
221	1	54.6	-	-	-	95.8	85.1	90.5	11.2	130	86	103	116	140	159	227	273	331	357	402	0.7	0.8	-
222	2	57.3	-	2	-	96.2	86.2	91.2	12.0	127	84	95	113	140	170	226	278	334	368	408	1.5	2.5	-
223	3	60.5	0.005	0	5.00	92.4	83.8	88.1	12.0	121	81	96	110	131	153	195	236	297	321	362	1.0	2.0	0.00
224	2	61.8	-	-	-	91.5	83.2	87.4	12.0	119	79	88	98	122	154	199	253	346	384	423	.9	1.6	-
225	3	62.0	-	0	-	91.9	82.7	87.3	13.4	115	81	87	98	120	150	204	253	332	371	409	1.4	2.9	-
226	3	62.9	-	1	-	91.6	82.9	87.3	13.5	118	82	87	106	128	155	213	268	353	387	426	1.4	3.7	-
227	3	62.1	.084	7	1.50	91.8	83.4	87.6	13.0	120	82	92	104	128	161	216	262	345	386	420	1.1	2.2	.05
228	4	60.8	.048	5	1.50	92.2	83.0	87.6	13.1	120	82	92	107	130	158	213	265	329	362	402	1.0	2.2	.04
229	2	61.8	.015	1	.60	96.1	86.6	91.4	13.3	121	78	91	112	136	164	216	250	314	360	404	1.0	2.0	.01
230	3	62.6	-	0	-	91.7	83.4	87.6	12.6	122	80	89	105	132	165	219	262	352	392	429	1.4	2.6	-
231	4	60.5	.014	4	.22	98.6	87.7	93.2	12.9	122	82	91	107	130	161	228	277	330	361	415	1.1	2.4	-
232	2	62.4	-	1	-	95.8	86.6	91.2	13.4	116	82	89	101	122	148	203	243	306	343	394	1.3	2.8	-
233	2	63.5	-	-	-	91.2	82.7	87.0	12.8	118	87	98	106	123	152	201	265	345	381	416	.7	.8	-
234	4	60.9	.059	1	1.70	91.9	83.0	87.5	13.0	119	83	90	104	127	154	212	265	341	370	406	1.3	2.5	.05
AVERAGE		61.0	.038	2	1.75	93.5	84.3	88.9	12.7	121	82	92	106	129	157	212	261	333	367	408	1.1	2.2	.03
MINIMUM		54.6	.005	0	.22	91.2	82.7	87.0	11.2	115													.00
MAXIMUM		63.5	.084	7	5.00	98.6	87.7	93.2	13.5	130													.05

SAMPLES 38

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 6 NORTH ILLINOIS--CONTINUED
 NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP	%	%
235	3	62.9	-	-	-	1.69	93.8	86.0	89.9	12.9	115	79	89	99	118	140	191	251	335	368	412	1.2	2.9
236	4	61.4	0.058	1	0.40	1.17	93.2	86.1	89.7	13.4	116	81	92	102	120	142	205	282	354	390	428	1.1	1.5
237	3	62.8	-	0	-	1.31	93.4	85.7	89.6	13.6	113	81	87	98	117	139	191	250	346	382	424	1.3	2.5
238	3	63.0	.009	0	.80	1.59	93.3	86.1	89.7	12.9	118	80	91	105	123	147	203	272	333	364	381	1.1	1.4
239	2	62.8	-	-	-	1.62	94.0	86.4	90.2	13.3	117	79	90	103	126	153	206	259	341	380	420	.9	3.6
240	4	61.4	.049	3	.70	1.80	93.3	85.7	89.5	13.0	119	81	88	106	130	154	213	270	348	378	420	1.0	3.0
241	3	62.1	-	0	-	2.33	93.2	85.6	89.4	12.3	121	81	94	107	129	154	205	259	342	382	431	1.2	2.1
242	3	63.4	-	1	-	1.50	93.1	86.3	89.7	11.9	122	84	95	109	130	154	201	253	339	376	413	1.5	2.5
243	4	59.9	.073	3	1.47	2.48	93.3	85.5	89.4	12.5	119	83	92	107	129	154	200	252	337	376	418	1.1	2.3
244	3	62.3	.163	3	1.10	1.13	93.7	85.4	89.6	13.7	114	81	89	100	121	145	197	256	349	392	427	.9	1.6
AVERAGE		62.2	.070	1	.89	1.66	93.4	85.9	89.7	13.0	117	81	91	104	124	148	201	260	342	379	417	1.1	2.3
MINIMUM		59.9	.009	0	.40	1.13	93.1	85.4	89.4	11.9	113												
MAXIMUM		63.4	.163	3	1.47	2.48	94.0	86.4	90.2	13.7	122												

SAMPLES 32

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 6 NORTH ILLINOIS--CONTINUED

NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
							IBP	5	10			20	30	50	70	90	95						
245	2	63.6	-	-	-	3.55	99.3	91.7	95.5	11.6	121	81	92	102	122	146	204	248	326	362	415	0.6	2.4
246	3	63.3	0.055	3	0.30	2.34	98.7	91.0	94.9	11.9	124	84	95	112	133	158	209	261	353	382	428	1.3	2.5
247	3	65.6	.138	4	.10	2.17	98.9	91.2	95.1	12.5	122	79	93	109	136	169	213	251	352	398	428	1.1	2.0
248	3	64.5	-	1	-	2.52	99.5	92.5	96.0	13.3	118	81	86	100	127	162	217	261	335	367	409	1.2	3.8
249	1	65.5	-	-	-	1.96	99.5	92.5	96.0	13.8	116	80	88	100	126	169	215	253	323	363	406	1.2	2.8
250	4	63.1	.021	1	.50	1.67	98.5	91.3	94.9	13.2	116	82	93	103	124	147	199	254	327	365	410	1.2	1.8
251	2	64.1	-	0	-	1.81	99.3	90.8	95.1	12.6	122	81	89	107	134	167	215	250	340	378	424	1.4	2.9
252	2	60.0	.004	0	3.50	2.27	99.1	91.2	95.2	12.4	121	80	94	110	132	156	203	248	304	331	365	1.0	2.0
AVERAGE		63.7	.055	2	1.10	2.29	99.1	91.5	95.3	12.7	120	81	91	105	129	159	209	253	333	368	411	1.1	2.5
MINIMUM		60.0	.004	0	.10	1.67	98.5	90.8	94.9	11.6	116												
MAXIMUM		65.6	.138	4	3.50	3.55	99.5	92.5	96.0	13.8	124												

SAMPLES 20

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS---CONTINUED

DIST. 7 CENTRAL MISSISSIPPI
WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MD.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												RES %	LOSS %
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
253	4	61.0	0.043	3	1.17	92.7	82.8	87.8	13.0	118	82	94	104	125	149	208	252	325	348	386	1.2	2.8	0.04	
254	2	65.9	.038	-	-	92.9	83.7	88.3	12.1	122	88	95	106	134	165	209	242	334	375	401	1.4	1.6	-	
255	4	59.8	.021	1	.29	98.3	88.0	93.2	13.0	120	80	91	101	125	155	221	267	321	351	389	.9	2.8	-	
256	3	63.3	-	-	-	91.7	82.8	87.3	13.5	113	81	91	101	118	139	192	249	328	368	407	.8	2.3	-	
257	6	62.2	.037	2	.94	91.9	82.6	87.3	13.8	114	79	87	96	117	146	206	258	343	381	419	1.3	4.1	.03	
258	4	61.4	.032	-	-	92.1	82.7	87.4	13.3	117	82	93	103	123	152	204	254	329	367	411	.8	2.0	-	
259	1	60.6	-	-	-	91.6	82.4	87.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
260	1	61.9	-	-	-	92.3	81.9	87.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
261	1	63.5	-	-	-	91.3	82.7	87.0	13.0	113	84	91	99	113	130	182	248	326	373	450	1.0	2.0	-	
262	1	62.0	-	-	-	93.2	83.7	88.5	12.7	120	86	100	107	127	149	206	264	330	360	408	.9	2.1	-	
263	2	61.9	.029	-	-	91.9	83.0	87.5	13.8	114	84	92	99	118	143	202	252	334	370	408	.9	1.6	-	
264	1	61.1	-	-	-	92.3	83.9	88.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
265	1	57.0	-	-	-	94.9	83.6	89.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
266	4	60.6	.021	1	.73	96.2	86.5	91.4	13.2	116	83	91	100	119	143	205	240	299	337	387	1.1	2.2	.00	
267	1	61.0	-	-	-	92.2	83.2	87.7	13.2	119	86	92	105	127	156	217	262	327	354	414	.9	2.1	-	
268	2	62.7	-	-	-	92.0	82.6	87.3	13.8	115	79	91	101	122	147	206	264	362	400	436	.9	1.7	-	
269	1	68.0	-	-	-	91.1	82.9	87.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
270	2	64.2	.037	-	-	92.1	83.0	87.6	12.8	120	85	95	108	132	159	208	247	325	345	386	1.1	1.9	-	
271	1	61.0	-	-	-	92.1	83.7	87.9	12.6	121	82	98	109	130	158	213	265	339	371	414	.8	1.7	-	
272	1	61.3	.030	-	-	95.5	86.5	91.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
273	5	61.0	.013	1	.70	92.4	83.1	87.8	12.8	117	83	97	106	125	145	195	251	316	341	377	.8	1.7	.00	
274	1	62.6	-	-	-	91.6	83.8	87.7	13.0	114	82	94	103	115	130	190	248	322	365	429	.8	2.2	-	
AVERAGE		62.0	.030	2	.77	92.8	83.6	88.2	13.1	117	83	93	103	123	148	204	254	329	363	408	1.0	2.2	.02	
MINIMUM		57.0	.013	1	.29	91.1	81.9	87.0	12.1	113														.00
MAXIMUM		68.0	.043	3	1.17	98.3	88.0	93.2	13.8	122														.04

40

SAMPLES 49

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 7 CENTRAL MISSISSIPPI--CONTINUED
 WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MD.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
							IBP	5	10			20	30	50	70	90	95	EP					
275	1	62.1	-	-	-	1.74	93.0	86.4	89.7	11.6	123	82	97	108	128	148	201	251	337	383	414	0.6	1.9
276	1	62.7	-	-	-	1.60	93.2	85.7	89.5	13.0	117	84	96	106	125	146	196	253	329	366	415	.4	2.1
277	3	62.2	0.067	-	-	1.82	93.4	86.0	89.7	13.5	115	82	89	99	119	148	207	263	337	380	423	1.1	2.2
278	1	62.6	-	-	-	1.53	93.5	86.1	89.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
279	1	61.3	-	-	-	1.76	93.1	86.5	89.8	12.8	116	83	91	100	120	140	194	250	327	348	420	.7	1.8
280	1	62.9	-	-	-	1.29	93.5	85.7	89.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
281	6	62.1	.036	1	1.09	1.20	93.3	85.8	89.6	14.1	112	79	87	97	116	141	198	253	332	366	407	1.6	3.1
282	1	63.7	-	-	-	1.57	93.3	86.4	89.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
283	3	62.4	-	-	-	1.37	93.7	85.9	89.8	13.5	113	79	89	98	117	136	193	250	329	363	408	.7	3.0
284	2	59.7	.063	-	-	2.02	93.9	85.8	89.9	13.0	119	84	92	105	126	153	212	271	355	391	418	1.0	2.0
285	1	62.9	-	-	-	1.25	93.3	86.2	89.8	12.3	120	82	98	109	129	151	196	249	325	363	408	1.0	1.5
286	1	60.7	-	-	-	2.58	93.2	84.9	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
287	1	62.7	-	-	-	2.66	93.1	86.7	89.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
288	4	60.7	.047	3	.88	2.10	92.9	85.6	89.3	12.5	122	81	95	107	132	167	213	267	346	382	436	1.3	2.4
289	5	62.0	.022	3	1.54	1.60	93.0	86.1	89.6	12.2	119	81	96	106	128	152	196	238	298	324	357	1.1	2.2
290	2	62.3	.022	-	-	1.51	93.8	85.7	89.8	11.8	124	84	96	108	134	161	211	262	331	364	403	1.4	1.6
291	1	62.6	-	-	-	1.99	93.3	86.0	89.7	12.9	116	84	91	99	118	149	203	251	328	375	412	.7	1.8
292	4	62.1	.037	-	-	1.87	93.7	86.5	90.1	12.8	118	81	91	100	124	148	203	259	334	371	412	.9	1.9
293	5	61.1	.050	0	.65	1.22	93.3	86.1	89.7	13.2	116	83	92	102	119	142	199	273	351	390	424	1.1	2.4
AVERAGE		62.0	.043	2	1.04	1.72	93.3	86.0	89.7	12.8	118	82	93	103	124	149	202	256	333	369	411	1.0	2.1
MINIMUM		59.7	.022	0	.65	1.20	92.9	84.9	89.1	11.6	112												
MAXIMUM		63.7	.067	3	1.54	2.66	93.9	86.7	90.1	14.1	124												
SAMPLES	44																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 7 CENTRAL MISSISSIPPI--CONTINUED
WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MO.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %	
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
294	5	63.4	0.007	3	1.47	2.50	99.2	91.6	95.4	11.4	124	81	95	108	132	158	203	239	296	323	359	0.8	1.8	
295	6	64.3	.021	2	.84	1.65	99.2	90.8	95.0	13.7	115	80	89	101	123	150	205	245	318	365	412	1.4	3.9	
296	1	64.7	-	-	-	1.85	98.5	92.2	95.4	12.8	119	86	95	105	125	153	207	243	313	349	393	.9	1.6	
297	1	67.2	-	-	-	1.52	98.8	91.6	95.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
298	1	64.9	-	-	-	2.73	99.3	91.4	95.4	13.3	117	82	97	108	126	144	201	242	309	366	408	.6	1.9	
299	1	61.4	-	-	-	2.33	98.8	91.0	94.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300	1	65.3	-	-	-	2.47	98.9	92.4	95.7	12.8	121	84	93	109	130	162	213	246	316	365	420	1.1	1.9	
301	1	65.6	-	-	-	2.96	99.7	92.6	96.2	12.7	120	82	93	105	126	164	211	246	339	385	434	.8	2.2	
302	2	64.2	.034	-	-	1.91	99.7	90.6	95.2	13.5	111	76	81	88	105	136	209	261	321	352	390	1.3	2.7	
303	3	64.7	-	-	-	2.20	99.4	91.0	95.2	13.5	114	79	90	99	118	141	194	243	325	367	420	.6	2.8	
304	4	63.9	.033	-	-	2.59	99.1	91.1	95.1	12.7	121	83	95	106	132	163	214	251	331	371	418	.7	2.4	
305	1	59.7	-	-	-	3.04	99.6	92.1	95.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
306	2	62.6	.049	-	-	1.92	98.2	87.6	92.9	12.8	120	84	94	106	130	161	213	271	328	354	404	.8	1.7	
307	1	64.9	-	-	-	1.57	99.8	90.7	95.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
308	1	65.1	-	-	-	1.90	98.9	92.5	95.7	13.2	119	82	92	104	129	167	215	241	308	357	399	.5	2.5	
309	5	62.8	.029	1	.95	2.04	98.6	91.0	94.8	13.2	114	82	93	101	118	138	191	244	312	342	386	1.2	2.0	
AVERAGE		64.0	.029	2	1.09	2.20	99.1	91.3	95.2	13.0	118	82	92	103	125	153	206	248	318	358	404	.9	2.3	
MINIMUM		59.7	.007	1	.84	1.52	98.2	87.6	92.9	11.4	111													
MAXIMUM		67.2	.049	3	1.47	3.04	99.8	92.6	96.2	13.7	124													
SAMPLES	36																							

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 8 LOWER MISSISSIPPI
 MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL			
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %		
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
310	1	64.4	-	-	-	91.4	83.2	87.3	12.6	116	82	92	101	120	139	188	235	322	352	404	0.3	2.7	-	
311	3	62.4	0.022	-	-	92.4	83.4	87.9	12.0	123	84	96	108	131	158	210	251	306	328	374	.7	2.3	-	
312	3	58.7	.004	-	-	96.2	85.7	91.0	12.3	118	83	99	107	124	137	189	242	317	357	391	1.0	1.8	-	
313	4	57.4	.036	-	-	92.8	83.7	88.3	13.0	121	81	96	106	133	163	222	273	320	346	394	.6	2.4	-	
314	4	58.7	.040	-	-	94.5	84.1	89.3	13.4	119	80	89	104	124	152	224	266	313	346	389	.8	1.8	-	
315	4	57.8	.010	-	0.40	99.7	87.6	93.7	12.2	120	84	95	105	123	144	204	247	330	349	378	.7	1.8	-	
316	3	63.9	.055	-	-	91.5	82.5	87.0	13.1	117	80	92	102	119	156	214	254	329	366	396	.9	2.1	-	
317	2	60.7	-	-	-	92.0	83.3	87.7	12.8	118	80	89	100	123	150	207	259	328	355	402	.8	3.2	-	
318	4	59.3	.027	1	1.00	91.9	82.9	87.4	13.1	122	81	90	109	136	170	224	276	351	362	415	1.0	2.6	0.05	
319	1	62.5	-	-	-	92.1	82.9	87.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	5	57.4	.026	0	-	92.3	83.4	87.9	11.4	125	84	96	111	133	158	210	263	333	368	398	.8	1.9	-	
321	3	62.6	.032	-	.43	91.4	82.7	87.1	11.8	121	84	97	106	127	146	199	257	335	365	395	.9	1.7	-	
322	14	64.6	.020	0	.50	91.1	83.3	87.2	13.3	117	83	99	110	128	149	194	253	332	364	401	1.0	1.1	.05	
323	1	57.7	.017	-	-	91.6	82.2	86.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
324	3	62.0	.019	-	-	92.1	83.0	87.6	13.0	123	81	96	108	140	173	227	268	331	369	392	.9	2.1	-	
325	5	58.8	.011	0	-	92.6	83.8	88.2	11.7	124	84	97	111	131	155	206	262	329	357	407	.8	1.3	-	
AVERAGE		60.6	.025	0	.58	92.9	83.6	88.3	12.6	120	82	95	106	128	154	208	258	327	356	395	.8	2.1	.05	
MINIMUM		57.4	.004	0	.40	91.1	82.2	86.9	11.4	116														.05
MAXIMUM		64.6	.055	1	1.00	99.7	87.6	93.7	13.4	125														.05

SAMPLES 60

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 8 LOWER MISSISSIPPI--CONTINUED
 MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %		
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
326	3	65.3	0.031	-	-	3.19	93.2	87.4	90.3	11.9	116	86	98	107	120	132	170	222	310	356	391	0.9	1.1	
327	4	64.5	.046	-	-	2.03	93.4	86.9	90.2	13.0	116	84	92	102	121	139	195	255	330	362	395	.7	1.8	
328	3	61.2	.027	-	-	1.55	92.8	85.9	89.4	12.3	119	83	94	103	123	151	202	257	348	380	404	.6	2.4	
329	5	61.0	.015	2	-	1.44	93.5	86.7	90.1	11.7	123	85	99	110	131	153	202	254	324	355	399	1.0	1.1	
330	2	63.5	-	-	-	-	93.7	87.7	90.7	11.9	118	82	95	104	120	138	184	241	327	357	397	.8	2.3	
331	14	64.5	.020	0	0.50	3.13	93.2	87.3	90.3	13.3	122	80	100	116	140	170	214	272	339	387	413	1.0	1.2	
332	1	64.3	-	-	-	2.39	93.2	85.7	89.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
333	5	61.1	.054	1	-	1.41	93.5	86.5	90.0	12.3	121	85	96	107	129	152	200	258	331	365	411	1.0	2.4	
334	4	63.0	.022	-	-	2.44	93.6	86.5	90.1	11.8	121	85	99	109	128	148	194	252	329	364	393	.9	1.7	
335	1	63.4	-	-	-	2.71	93.6	87.1	90.4	12.7	121	83	100	109	129	151	211	266	336	366	407	1.0	2.0	
336	3	64.0	.037	-	-	2.50	94.1	86.3	90.2	12.6	118	81	89	101	122	153	204	255	329	374	392	.6	2.4	
337	4	63.7	.053	-	1.55	2.77	93.2	86.3	89.8	12.2	119	85	92	106	125	144	192	247	309	359	390	.6	1.5	
338	4	63.9	.031	1	1.00	2.01	93.2	86.3	89.8	13.7	114	78	90	102	119	142	199	257	352	398	419	1.1	1.5	
339	3	64.5	.040	-	-	2.61	93.3	86.6	90.0	12.4	119	82	97	106	125	147	197	253	320	351	392	.9	2.1	
AVERAGE		63.4	.034	1	1.02	2.32	93.4	86.7	90.1	12.4	119	83	95	106	126	148	197	253	330	367	400	.9	1.8	
MINIMUM		61.0	.015	0	.50	1.41	92.8	85.7	89.4	11.7	114													
MAXIMUM		65.3	.054	2	1.55	3.19	94.1	87.7	90.7	13.7	123													

SAMPLES 56

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 8 LOWER MISSISSIPPI--CONTINUED
 MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED										EP	
							5	10	20			30	50	70	90	95	IBP						
340	3	63.4	0.011	-	-	2.64	99.2	91.6	95.4	11.9	124	81	98	111	133	156	209	252	312	341	372	0.6	1.4
341	14	63.0	.020	0	0.50	3.20	99.1	91.5	95.3	13.2	118	82	99	110	130	154	201	265	338	376	408	1.0	1.1
342	2	62.1	.012	-	-	2.67	99.2	91.6	95.4	12.0	122	82	96	107	127	148	206	248	313	332	380	2.1	.9
343	2	64.1	-	-	-	-	99.2	91.0	95.1	12.7	118	81	91	101	123	148	203	248	331	368	401	.6	2.4
344	3	60.7	.038	-	-	2.75	98.7	91.0	94.9	12.6	121	82	93	103	128	153	219	270	321	347	392	.9	1.6
345	1	63.4	-	-	-	2.83	99.2	91.2	95.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
346	4	63.3	.018	-	-	2.17	99.1	91.3	95.2	12.5	117	83	89	98	120	143	197	232	296	333	374	.7	2.4
347	5	58.9	.002	1	-	2.21	99.1	91.3	95.2	11.5	124	85	97	108	129	151	205	254	323	352	398	.8	1.4
348	5	60.1	.045	1	-	2.37	99.2	91.3	95.3	11.9	122	82	92	103	128	154	208	255	329	361	411	1.0	2.2
349	3	62.2	.031	-	-	2.79	98.6	90.6	94.6	12.6	119	85	97	106	127	148	199	262	349	383	406	.5	1.5
350	3	61.8	.060	-	-	2.58	99.0	91.6	95.3	12.6	118	81	88	99	120	151	210	254	333	374	420	.4	3.1
AVERAGE		62.1	.026	1	.50	2.62	99.1	91.3	95.2	12.4	120	82	94	105	127	151	206	254	325	357	396	.9	1.8
MINIMUM		58.9	.002	0	.50	2.17	98.6	90.6	94.6	11.5	117												
MAXIMUM		64.1	.060	1	.50	3.20	99.2	91.6	95.4	13.2	124												
SAMPLES	45																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 9 NORTH PLAINS
 MINN., N. DAK., AND S. DAK.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MDI, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
351	1	62.2	0.030	-	-	92.1	83.0	87.6	12.7	121	85	96	107	128	156	219	265	332	380	420	1.0	2.0	-
352	1	60.5	.022	-	-	91.0	82.6	86.8	10.1	137	89	110	125	157	187	226	259	329	369	379	1.3	1.2	-
353	1	62.5	.041	-	-	92.0	83.0	87.5	12.7	120	85	97	108	127	145	207	263	333	390	416	.7	2.3	-
354	1	65.5	.039	-	1.80	93.5	83.5	88.5	13.0	116	82	96	106	125	146	191	229	293	321	359	1.2	1.3	-
355	1	60.9	.044	-	-	92.0	83.0	87.5	12.4	123	87	101	112	135	163	217	259	337	372	408	1.1	1.9	-
356	1	65.2	.059	-	-	91.1	82.8	87.0	13.4	116	84	96	107	129	150	199	238	325	377	403	.5	2.5	-
357	1	63.6	.069	-	-	92.0	82.9	87.5	13.1	117	84	92	102	124	148	205	249	331	362	404	1.2	2.8	-
358	1	63.8	.056	-	-	91.3	82.6	87.0	13.1	116	80	95	106	128	146	194	238	324	373	392	.4	2.1	-
359	1	62.4	.030	-	-	91.5	83.0	87.3	12.8	121	84	99	109	131	154	214	256	336	371	414	1.1	1.4	-
360	1	60.9	.021	-	-	90.4	82.8	86.6	10.1	132	89	107	119	139	166	209	250	320	338	386	1.5	2.5	-
361	1	63.6	.063	-	-	92.1	82.6	87.4	14.2	113	82	90	99	120	149	204	255	337	371	410	.7	2.3	-
AVERAGE		62.8	.043	-	1.80	91.7	82.9	87.3	12.5	121	85	98	109	131	155	208	251	327	366	399	1.0	2.0	-
MINIMUM		60.5	.021	-	1.80	90.4	82.6	86.6	10.1	113													-
MAXIMUM		65.5	.069	-	1.80	93.5	83.5	88.5	14.2	137													-
SAMPLES	11																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 9 NORTH PLAINS--CONTINUED
 MINN., N. DAK., AND S. DAK.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D923 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED										EP	
							IBP	5	10			20	30	50	70	90	95						
362	1	62.5	0.038	-	-	1.24	92.6	84.2	88.4	12.7	119	84	99	109	127	151	200	257	330	369	422	0.8	2.2
363	1	63.3	.028	-	-	1.31	92.5	84.5	88.5	12.9	117	83	96	106	125	146	196	249	329	366	418	.5	2.0
364	2	63.0	.050	-	-	1.30	92.8	84.2	88.5	12.5	120	85	95	107	129	152	203	260	340	384	422	1.3	1.6
365	3	65.7	.029	-	2.20	1.64	93.6	85.0	89.3	12.8	116	85	96	107	126	145	187	228	287	323	367	1.2	1.6
366	1	61.7	.060	-	-	1.02	93.0	84.0	88.5	13.4	117	81	93	104	126	153	210	259	331	360	402	.8	1.7
367	1	62.3	.052	-	-	.91	92.6	83.4	88.0	13.4	116	82	93	103	125	151	202	257	331	364	403	.6	2.4
368	1	62.9	.025	-	-	1.07	92.5	84.2	88.4	11.4	124	84	103	114	134	152	194	245	320	355	402	1.1	1.9
369	1	62.9	.025	-	-	2.52	92.4	84.2	88.3	11.3	124	92	104	115	133	151	194	244	321	356	390	.8	2.7
370	1	62.9	.072	-	-	.59	92.6	84.0	88.3	14.0	113	80	88	98	118	142	199	250	326	360	418	.5	2.0
371	1	62.6	.045	-	-	1.19	92.4	84.2	88.3	12.7	116	82	93	105	125	145	188	246	330	360	422	.7	2.3
372	1	62.4	.060	-	-	.93	93.4	83.2	88.3	13.7	112	82	91	102	121	147	182	237	313	324	363	.9	2.1
AVERAGE		62.9	.044	-	2.20	1.25	92.8	84.1	88.4	12.8	118	84	96	106	126	149	196	248	323	356	403	.8	2.0
MINIMUM		61.7	.025	-	2.20	.59	92.4	83.2	88.0	11.3	112												
MAXIMUM		65.7	.072	-	2.20	2.52	93.6	85.0	89.3	14.0	124												

SAMPLES 14

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 9 NORTH PLAINS--CONTINUED
 MINN., N. DAK., AND S. DAK.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES. ASTM D2699	MOT. ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
							IBP	5	10			20	30	50	70	90	95	EP					
373	1	62.7	0.024	-	-	1.57	98.8	91.2	95.0	10.8	132	85	105	116	153	176	217	246	317	362	412	1.2	1.8
374	1	64.9	.052	-	-	2.78	99.7	91.0	95.4	12.3	122	86	101	111	135	160	204	239	324	364	414	.8	2.2
375	1	64.2	.032	-	-	2.20	99.2	91.4	95.3	12.0	123	83	99	110	138	165	206	238	318	363	402	.9	1.6
376	1	64.1	.035	-	-	2.57	99.3	91.5	95.4	12.0	122	82	97	107	130	159	206	244	323	374	396	1.2	1.8
377	1	66.4	.055	-	-	2.70	99.6	91.2	95.4	13.0	117	84	96	106	128	155	199	273	330	365	418	.3	2.7
378	1	64.9	.035	-	-	2.05	99.1	91.4	95.3	13.3	120	86	104	115	133	162	209	243	312	360	403	.6	1.4
379	2	64.6	.052	-	-	1.66	98.6	91.5	95.1	11.8	125	86	99	112	137	164	211	248	324	363	406	.8	2.0
380	1	-	-	-	-	-	99.0	88.4	93.7	13.2	129	85	108	125	157	191	248	297	366	387	412	1.0	.7
381	2	63.1	.042	-	-	2.20	99.1	91.1	95.1	11.8	127	88	103	118	142	170	212	249	328	368	404	.8	2.2
AVERAGE		64.4	.041	-	-	2.22	99.2	91.0	95.1	12.2	124	85	101	113	139	167	212	253	327	367	407	.8	1.8
MINIMUM		62.7	.024	-	-	1.57	98.6	88.4	93.7	10.8	117												
MAXIMUM		66.4	.055	-	-	2.78	99.7	91.5	95.4	13.3	132												
SAMPLES	11																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 10 CENTRAL PLAINS
 NEBR., CENTRAL AND WESTERN IOWA, NW MO., AND NORTHERN KANS.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOY, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %	
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
382	6	61.2	0.053	0	2.60	93.0	83.6	88.3	11.8	121	81	92	106	129	150	196	233	289	311	365	0.8	2.7	-
383	1	61.4	.010	-	-	91.4	83.5	87.5	13.0	119	82	93	103	123	150	215	266	328	364	400	.5	1.5	-
384	4	63.7	.020	-	-	92.0	83.2	87.6	13.4	113	83	92	101	115	134	194	241	338	384	426	.4	2.1	-
385	6	65.0	.031	1	-	91.8	83.4	87.6	12.8	116	81	91	102	118	140	199	247	344	380	424	.6	2.5	-
386	3	63.8	.024	-	-	91.9	83.5	87.7	12.7	119	82	97	103	121	157	210	244	324	358	412	.7	2.3	-
387	1	66.5	-	-	-	92.0	84.0	88.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
388	5	62.9	.027	-	-	92.0	83.5	87.8	12.0	125	84	99	112	135	167	218	262	331	367	414	.5	1.8	-
389	4	61.3	.010	-	-	91.8	83.7	87.8	12.4	124	85	95	112	138	162	216	257	322	350	398	.5	2.6	-
390	6	61.8	.035	1	1.04	98.4	88.1	93.3	11.4	126	83	95	108	133	162	215	241	305	337	397	.7	2.6	-
391	2	64.5	.024	-	-	91.8	83.4	87.6	13.1	116	84	91	100	118	139	202	249	328	367	414	1.0	2.0	-
392	4	63.8	.024	-	-	91.9	83.5	87.7	12.4	121	83	94	105	127	153	210	254	333	365	417	.7	1.8	-
AVERAGE		63.3	.026	1	1.82	92.5	83.9	88.3	12.5	120	83	94	105	126	151	208	249	324	358	407	.6	2.2	-
MINIMUM		61.2	.010	0	1.04	91.4	83.2	87.5	11.4	113													-
MAXIMUM		66.5	.053	1	2.60	98.4	88.1	93.3	13.4	126													-
SAMPLES	42																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 10 CENTRAL PLAINS--CONTINUED
 NEBR., CENTRAL AND WESTERN IOWA, NW MO., AND NORTHERN KANS.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES %	LOSS %
							RES, ASTM D2699	MON, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
393	5	63.9	0.024	-	-	1.44	93.4	85.9	89.7	12.4	120	82	95	104	124	149	202	254	329	367	406	0.6	2.2
394	1	65.4	-	-	-	1.01	92.4	84.8	88.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
395	3	63.7	.016	-	-	1.66	93.4	86.1	89.8	11.9	119	80	94	105	121	150	190	248	333	367	414	.8	1.7
396	6	60.3	.142	0	2.58	2.62	93.8	85.2	89.5	12.6	120	81	94	107	130	155	204	262	338	377	406	.9	2.2
397	3	63.7	.019	-	-	1.67	92.8	85.9	89.4	11.5	123	84	100	111	131	151	197	256	334	371	421	.4	1.6
398	2	65.2	.021	-	-	1.34	93.0	85.6	89.3	13.2	112	84	91	98	114	132	182	238	314	365	397	.8	2.2
399	1	63.3	-	-	-	1.93	92.3	86.7	89.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	2	63.0	.022	-	-	1.56	92.7	85.6	89.2	12.1	119	84	101	110	129	145	188	244	335	368	421	.6	1.4
401	6	65.2	.020	0	-	1.13	92.6	85.4	89.0	13.4	112	82	90	100	117	135	180	234	309	346	392	.8	2.4
402	4	63.6	.015	-	-	1.34	92.2	85.2	88.7	12.0	119	82	91	102	121	144	197	257	335	367	413	1.1	2.7
403	4	64.4	.029	-	-	1.67	92.5	85.4	89.0	12.7	115	83	94	102	120	139	187	242	329	367	409	1.0	1.8
AVERAGE		63.8	.034	0	2.58	1.58	92.8	85.6	89.2	12.4	118	82	94	104	123	144	192	248	328	366	409	.8	2.0
MINIMUM		60.3	.015	0	2.58	1.01	92.2	84.8	88.6	11.5	112												
MAXIMUM		65.4	.142	0	2.58	2.62	93.8	86.7	89.8	13.4	123												

SAMPLES 37

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 10 CENTRAL PLAINS--CONTINUED
 NEBR., CENTRAL AND WESTERN IOWA, NW MO., AND NORTHERN KANS.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
404	2	64.5	-	-	-	2.15	98.8	91.3	95.1	11.9	124	80	97	108	132	156	218	256	330	367	405	0.4	1.6
405	2	65.4	0.014	-	-	2.02	98.6	90.9	94.8	11.8	125	86	102	111	133	162	217	261	335	368	409	.6	1.9
406	2	62.3	.005	-	-	2.02	99.0	91.3	95.2	12.1	122	85	94	103	130	161	216	256	323	355	402	.3	2.5
407	1	69.8	-	-	-	1.34	99.4	91.2	95.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
408	4	67.9	.032	0	-	1.96	98.9	91.4	95.2	12.5	115	79	87	97	114	133	189	239	324	369	415	.7	2.8
409	2	63.6	.013	-	-	2.29	97.6	90.0	93.8	11.8	124	84	98	109	128	158	211	259	336	369	412	.7	1.6
410	1	64.8	.015	-	-	2.25	99.0	91.2	95.1	11.7	122	86	94	104	124	145	209	256	340	375	422	.8	1.2
411	2	63.7	.014	-	-	2.24	98.9	91.3	95.1	11.5	126	84	101	112	131	166	217	253	328	363	411	.9	1.9
AVERAGE		65.3	.016	0	-	2.03	98.8	91.1	95.0	11.9	123	83	96	106	127	154	211	254	331	367	411	.6	1.9
MINIMUM		62.3	.005	0	-	1.34	97.6	90.0	93.8	11.5	115												
MAXIMUM		69.8	.032	0	-	2.29	99.4	91.4	95.3	12.5	126												

SAMPLES 16

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 11 SOUTH PLAINS
 SOUTHERN KANS., SW MO., WESTERN ARK., OKLA., AND NORTHERN TEX.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											MANGA- NESE AA G/GAL		
						RES. ASTM D2699	MDT. ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												RES %	LOSS %
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
412	1	60.7	-	0	-	91.0	83.6	87.3	12.3	121	80	87	102	122	148	218	270	338	370	408	1.0	3.0	-	
413	1	61.6	-	0	-	91.1	84.8	88.0	11.9	128	84	93	118	150	180	221	258	323	356	403	1.0	3.5	-	
414	6	64.2	0.025	-	-	91.7	83.4	87.6	12.9	117	81	89	100	122	151	203	240	320	365	403	.5	2.8	-	
415	1	59.1	-	-	2.40	91.6	84.2	87.9	12.6	119	84	92	102	126	165	210	251	307	341	383	.3	2.2	-	
416	4	63.7	.056	-	-	93.0	84.1	88.6	12.7	119	78	90	103	129	158	209	255	316	360	407	1.0	3.5	-	
417	1	61.0	.064	-	-	92.6	82.3	87.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
418	3	62.6	.021	-	-	91.0	83.5	87.3	12.1	123	84	96	106	127	152	216	260	328	362	404	.7	2.1	-	
419	2	60.1	.071	-	-	91.9	82.9	87.4	11.2	129	86	99	111	136	169	227	279	351	378	414	.4	2.1	-	
420	5	61.9	.015	2	3.24	91.3	83.9	87.6	11.9	125	89	96	112	138	166	215	250	313	350	393	.5	2.9	-	
421	3	64.3	.023	2	-	91.2	83.6	87.4	12.1	124	83	94	109	135	165	216	256	337	377	418	1.1	2.4	-	
422	6	64.1	.027	1	-	91.6	83.8	87.7	11.5	126	82	97	112	140	169	211	249	323	367	414	.9	2.2	0.03	
423	3	67.6	-	0	-	91.3	83.2	87.3	12.7	118	81	93	102	129	157	202	235	321	364	410	.7	3.3	-	
424	2	63.8	.023	1	-	93.1	84.4	88.8	13.5	116	81	89	104	125	150	201	244	329	371	417	1.0	3.0	-	
425	1	63.5	-	-	.70	99.0	88.3	93.7	12.7	120	86	94	104	127	156	212	244	312	343	397	.5	2.0	-	
426	1	57.7	.014	-	-	96.4	86.2	91.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
427	2	61.7	.021	1	-	91.2	83.7	87.5	10.4	134	83	94	116	147	179	229	273	344	375	410	1.0	3.0	-	
428	3	63.7	.038	-	-	91.6	83.5	87.6	12.6	121	86	98	108	131	163	214	256	331	360	417	1.0	3.0	-	
429	1	61.0	.030	-	-	94.2	84.9	89.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
430	4	65.8	.034	1	-	91.1	83.2	87.2	13.3	117	78	92	101	123	149	211	255	341	380	414	.8	3.2	.03	
431	4	61.3	.059	1	-	92.1	82.5	87.3	12.2	123	82	92	107	133	161	215	263	334	370	419	1.0	2.8	-	
432	3	64.3	.024	1	-	91.0	83.5	87.3	12.7	121	82	93	102	130	161	215	261	338	371	422	.8	4.8	-	
433	5	58.9	.016	0	-	93.3	84.0	88.7	11.6	127	88	97	112	141	175	218	254	316	335	370	.7	3.0	-	
AVERAGE		62.4	.033	1	2.11	92.4	84.0	88.2	12.3	123	83	93	107	132	162	214	255	327	363	406	.8	2.9	.03	
MINIMUM		57.7	.014	0	.70	91.0	82.3	87.2	10.4	116													.03	
MAXIMUM		67.6	.071	2	3.24	99.0	88.3	93.7	13.5	134													.03	

SAMPLES 62

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 11 SOUTH PLAINS--CONTINUED
 SOUTHERN KANS., SW MO., WESTERN ARK., OKLA., AND NORTHERN TEX.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENTY EVAPORATED											
							IBP	5	10			20	30	50	70	90	95	EP					
434	4	62.3	0.051	1	-	1.88	93.4	85.8	89.6	12.2	121	82	96	109	132	154	199	247	319	363	407	0.7	1.8
435	3	64.9	.021	-	-	1.17	92.5	85.2	88.9	12.6	116	82	92	102	118	136	188	246	333	365	412	1.2	1.6
436	3	63.4	.054	-	-	1.85	93.1	85.8	89.5	12.5	117	81	91	103	123	140	192	259	327	357	407	.9	2.1
437	1	65.3	-	0	-	2.04	93.0	86.5	89.8	13.0	114	82	93	104	121	139	183	241	324	358	413	1.5	1.5
438	1	67.6	-	0	-	.70	93.3	86.0	89.7	12.7	115	80	90	101	117	136	186	240	333	375	410	1.5	2.0
439	2	62.1	.021	0	-	1.70	92.5	85.7	89.1	10.4	129	88	106	119	138	156	200	251	326	353	400	1.0	1.0
440	5	64.2	.025	2	1.19	1.42	92.3	85.7	89.0	13.4	115	81	95	102	118	137	200	256	325	366	385	.8	1.8
441	1	62.1	.039	-	-	1.29	94.5	86.4	90.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
442	6	63.0	.030	0	-	1.88	92.5	85.5	89.0	12.0	122	83	99	111	133	155	203	254	331	371	415	1.0	1.9
443	1	64.2	-	-	.90	1.05	92.1	85.5	88.8	13.5	113	82	90	100	117	139	192	251	327	357	408	.8	2.2
444	3	62.9	.023	1	-	1.72	94.5	87.1	90.8	12.6	119	80	87	102	125	148	204	260	337	368	415	.8	3.3
445	1	61.7	.077	-	-	3.23	93.2	86.4	89.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
446	3	63.9	.032	2	-	1.90	92.3	85.7	89.0	12.8	118	81	92	104	125	146	201	254	333	373	406	1.1	2.2
447	5	63.1	.024	1	-	1.82	92.9	86.1	89.5	12.2	119	84	97	110	129	152	192	238	305	328	360	.9	2.3
448	1	62.7	.038	-	-	2.43	93.8	86.0	89.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
449	3	64.0	-	0	-	1.72	92.2	84.5	88.4	12.6	119	82	90	105	128	155	205	253	333	370	408	.9	2.6
450	4	65.3	.059	1	-	2.33	92.2	86.7	89.5	13.4	113	78	89	100	117	139	187	247	327	361	402	.8	2.6
451	7	63.6	.027	-	-	1.47	93.2	85.6	89.4	12.9	116	81	90	101	121	141	193	250	333	366	405	.7	2.8
452	4	64.1	.068	-	-	2.66	93.9	86.1	90.0	11.9	119	78	91	103	125	145	194	246	310	349	394	1.0	3.2
453	2	63.2	.037	1	-	1.57	93.3	86.3	89.8	12.2	117	81	89	100	118	138	186	246	326	361	406	1.5	2.0
454	1	60.1	.031	-	-	2.10	93.3	86.6	90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
455	2	64.6	.061	-	-	3.06	93.4	87.1	90.3	12.6	113	84	91	99	113	129	173	222	303	354	382	1.0	2.0
AVERAGE		63.6	.040	1	1.05	1.86	93.1	86.0	89.6	12.5	118	82	93	104	123	144	193	248	325	361	402	1.0	2.2
MINIMUM		60.1	.021	0	.90	.70	92.1	84.5	88.4	10.4	113												
MAXIMUM		67.6	.077	2	1.19	3.23	94.5	87.1	90.8	13.5	129												

SAMPLES 63

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 11 SOUTH PLAINS--CONTINUED
 SOUTHERN KANS., SW MO., WESTERN ARK., OKLA., AND NORTHERN TEX.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %		
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
456	2	64.0	0.015	-	-	1.54	98.2	91.5	94.9	12.2	121	84	96	106	126	147	204	238	298	340	390	0.6	1.9	
457	4	61.6	.016	0	-	2.79	99.5	91.6	95.6	11.9	125	85	94	111	138	169	215	248	310	339	391	.9	2.7	
458	1	63.0	-	1	-	2.43	98.7	92.3	95.5	12.0	124	83	-	107	138	169	215	252	326	352	402	1.0	5.5	
459	1	65.5	.019	-	-	1.13	98.0	91.1	94.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
460	2	66.5	.026	-	-	2.16	98.7	92.1	95.4	11.8	122	82	93	103	127	155	205	239	313	357	396	.6	2.2	
461	4	60.4	.026	2	2.38	2.02	98.6	91.1	94.9	12.0	124	83	96	109	134	163	215	255	318	359	401	.5	2.3	
462	6	65.6	.022	-	-	2.29	99.2	91.5	95.4	12.5	119	80	93	105	127	154	204	239	320	362	407	.5	2.3	
463	3	67.6	-	0	-	1.58	98.8	91.2	95.0	12.6	121	83	97	109	135	166	207	236	323	365	411	1.0	3.1	
464	2	61.4	.011	0	-	2.91	98.8	91.8	95.3	11.4	129	83	93	115	143	174	225	272	343	373	407	1.0	3.0	
465	4	60.7	.023	-	-	2.30	99.2	91.8	95.5	10.8	129	79	93	108	133	163	219	265	324	360	401	1.0	3.2	
466	1	59.1	.025	-	-	2.42	99.6	91.2	95.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
467	2	65.4	.025	0	-	2.71	98.5	92.7	95.6	11.2	130	84	106	120	148	176	214	248	327	371	413	1.1	2.1	
468	3	62.8	.019	1	-	1.76	98.5	91.0	94.8	11.6	126	82	94	113	139	169	212	243	319	362	417	.9	3.1	
469	1	59.4	.013	-	-	2.47	98.3	91.1	94.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
470	1	68.6	-	1	-	1.96	98.0	92.0	95.0	11.6	123	80	93	108	128	152	201	236	316	358	409	1.0	2.0	
471	2	61.6	.027	-	-	2.55	99.1	91.3	95.2	11.4	128	86	99	113	141	171	220	258	330	362	415	.6	2.4	
472	4	66.6	.037	1	-	2.82	98.7	92.2	95.5	12.9	119	80	93	102	127	155	209	252	321	368	406	.9	2.8	
AVERAGE		63.5	.022	1	2.38	2.23	98.7	91.6	95.2	11.9	124	82	95	109	135	163	212	249	321	359	405	.8	2.8	
MINIMUM		59.1	.011	0	2.38	1.13	98.0	91.0	94.6	10.8	119													
MAXIMUM		68.6	.037	2	2.38	2.91	99.6	92.7	95.6	12.9	130													
SAMPLES																								

54

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
473	5	59.9	0.010	2	0.96	92.8	83.6	88.2	11.6	127	86	100	113	139	171	223	260	307	335	377	0.7	1.9	0.05
474	1	58.9	.009	0	.67	95.9	86.1	91.0	12.9	118	80	89	101	122	153	213	243	312	352	398	1.0	2.0	.06
475	5	60.3	.010	2	1.00	92.2	83.3	87.8	11.6	124	85	94	107	129	155	214	264	327	359	399	.7	2.0	.06
476	2	62.4	-	-	-	91.8	82.5	87.2	13.2	120	84	95	106	132	160	216	262	354	376	421	1.0	1.5	-
477	2	59.0	-	-	-	92.6	82.5	87.6	11.4	121	88	99	107	124	141	190	274	345	383	408	.9	1.6	-
478	1	56.6	.027	4	.76	91.9	82.7	87.3	10.8	129	89	102	114	132	161	218	299	361	392	416	1.0	1.5	.03
479	3	61.5	-	-	-	92.7	83.0	87.9	12.1	121	85	96	105	125	147	206	254	324	364	405	.7	2.3	-
480	3	60.2	.026	4	.58	94.4	83.8	89.1	12.8	119	83	95	105	127	151	208	257	319	347	385	.9	1.9	.04
481	4	60.7	.048	3	1.16	92.9	83.8	88.4	11.8	125	83	94	107	132	161	217	264	334	365	401	.9	1.6	.04
482	2	62.5	-	-	-	91.8	82.8	87.3	12.9	119	82	92	103	128	160	214	255	339	383	414	1.0	2.0	-
483	2	59.2	-	-	-	92.7	83.0	87.9	11.2	124	86	99	111	125	145	206	253	314	342	394	1.0	2.0	-
484	4	59.8	-	1	-	92.2	82.9	87.6	11.6	124	86	97	109	131	156	212	272	349	379	418	1.0	2.0	-
485	2	61.8	-	-	-	92.7	82.6	87.7	12.6	117	82	92	101	117	135	197	254	326	360	396	.9	2.1	-
486	3	56.1	-	0	-	96.7	86.1	91.4	12.1	125	83	98	110	133	162	222	251	318	350	399	.8	1.8	-
AVERAGE		59.9	.022	2	.86	93.1	83.5	88.3	12.0	122	84	96	107	128	154	211	262	331	363	402	.9	1.9	.05
MINIMUM		56.1	.009	0	.58	91.8	82.5	87.2	10.8	117													.03
MAXIMUM		62.5	.048	4	1.16	96.7	86.1	91.4	13.2	129													.06
SAMPLES	39																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS--CONTINUED

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												18P	5	10	20	30	50	70	90	95	EP		
487	3	61.9	-	2	-	1.75	93.4	86.4	89.9	12.1	121	81	93	106	124	146	208	259	336	377	412	1.5	1.6
488	1	62.7	0.027	2	1.03	1.50	92.8	86.2	89.5	12.0	118	86	102	114	127	141	176	237	342	375	422	1.0	1.0
489	6	59.7	.027	1	.48	2.05	93.8	86.9	90.4	11.5	126	85	99	112	132	157	216	275	340	369	409	1.0	1.7
490	1	61.5	-	-	-	1.90	93.2	86.2	89.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
491	2	62.6	-	-	-	1.32	93.8	86.1	90.0	12.8	117	81	90	100	121	149	201	255	342	368	410	.4	4.1
492	2	65.0	-	-	-	.63	93.9	85.7	89.8	12.7	112	80	90	98	112	128	171	240	321	361	408	.8	2.2
493	4	63.1	-	-	-	1.87	93.4	86.3	89.9	11.7	122	83	96	108	128	149	199	252	333	368	401	.8	1.6
494	2	64.3	-	-	-	1.52	93.7	85.6	89.7	13.0	117	84	93	103	124	148	200	252	335	378	412	.6	2.4
495	6	65.1	.027	2	1.09	2.49	93.6	86.8	90.2	11.4	123	84	100	112	131	151	195	249	320	354	399	1.0	1.5
496	6	60.8	.073	3	1.11	2.16	93.9	86.0	90.0	11.3	126	85	99	111	132	156	208	259	333	370	411	1.0	1.6
497	2	65.5	-	-	-	1.68	92.5	87.0	89.8	12.8	110	82	88	94	109	126	170	229	313	352	394	1.1	2.9
498	5	61.1	.040	2	.90	1.56	93.6	85.8	89.7	11.8	123	83	98	108	129	154	210	268	349	386	415	1.1	1.5
499	4	60.9	.020	0	.47	.80	94.1	86.2	90.2	12.2	122	84	95	109	131	156	209	264	329	355	389	.8	2.4
AVERAGE		62.6	.036	2	.85	1.63	93.5	86.2	89.9	12.1	120	83	95	106	125	147	197	253	333	368	407	.9	2.0
MINIMUM		59.7	.020	0	.47	.63	92.5	85.6	89.5	11.3	110												
MAXIMUM		65.5	.073	3	1.11	2.49	94.1	87.0	90.4	13.0	126												

SAMPLES 44

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS--CONTINUED

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
500	6	60.4	0.015	3	0.50	2.65	99.7	90.8	95.3	11.9	125	84	101	114	134	163	221	262	317	343	387	0.8	1.7	
501	2	65.3	-	-	-	1.50	99.7	91.9	95.8	13.2	116	82	89	101	118	139	206	245	307	345	382	1.1	1.4	
502	3	61.5	-	2	-	2.48	98.7	90.8	94.8	12.0	123	84	94	108	131	156	210	262	342	371	417	.8	2.3	
503	5	59.8	.020	3	.80	1.99	99.1	91.0	95.1	12.3	124	86	99	108	130	159	219	268	331	368	399	1.1	1.3	
504	2	61.1	-	-	-	2.38	99.2	90.7	95.0	13.2	120	81	93	103	133	164	221	266	346	382	419	.9	2.1	
505	1	61.0	.020	2	.95	2.05	98.4	91.7	95.1	12.5	119	82	98	110	126	144	197	269	352	378	418	1.0	1.0	
506	4	66.3	.013	4	.36	1.00	98.1	91.1	94.6	12.3	122	84	96	109	129	154	209	248	314	348	392	1.0	1.6	
507	5	59.6	.015	2	.76	2.24	98.3	90.9	94.6	11.8	124	85	98	109	130	153	212	271	338	369	411	1.0	1.5	
508	2	61.2	-	-	-	2.54	99.3	90.6	95.0	13.2	121	78	85	108	144	177	218	255	345	381	422	1.5	2.5	
509	4	63.8	-	-	-	1.97	98.9	91.1	95.0	11.8	124	85	100	112	135	157	207	249	313	349	393	.9	1.6	
510	6	60.4	.024	2	1.68	2.38	99.2	91.0	95.1	11.0	128	87	101	114	137	163	214	257	328	362	405	1.1	1.4	
AVERAGE		61.9	.018	3	.84	2.11	99.0	91.1	95.0	12.3	122	83	96	109	132	157	212	259	330	363	404	1.0	1.7	
MINIMUM		59.6	.013	2	.36	1.00	98.1	90.6	94.6	11.0	116													
MAXIMUM		66.3	.024	4	1.68	2.65	99.7	91.9	95.8	13.2	128													

SAMPLES 40

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 13 SOUTH MOUNTAIN STATES
 SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	MANGA- NESE AA G/GAL	
						RES, ASTM D2699	MOY, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
511	1	59.1	0.025	-	-	91.1	82.4	86.8	11.5	125	88	100	114	132	153	206	268	349	380	414	1.4	1.6	0.00
512	7	60.4	.019	-	1.49	94.5	85.2	89.9	11.5	128	89	104	116	142	171	216	251	318	357	408	1.1	1.5	.00
513	13	65.1	.010	1	-	90.4	82.2	86.3	12.0	121	80	91	103	126	154	207	255	342	396	426	1.0	2.9	.06
514	8	59.3	.028	-	.95	92.6	83.7	88.2	10.7	131	90	105	119	143	169	216	263	333	368	412	1.0	1.5	.00
515	5	63.8	-	2	-	89.9	82.8	86.4	12.4	121	83	93	105	128	153	214	262	346	384	420	1.0	2.0	-
516	1	53.4	-	-	-	96.2	85.6	90.9	10.6	135	89	105	119	149	184	236	273	317	347	393	1.1	1.9	-
517	4	64.1	-	-	-	90.8	82.1	86.5	12.0	120	85	94	105	120	147	206	257	354	393	424	.7	2.1	-
518	4	58.6	.036	-	-	92.4	83.3	87.9	10.1	136	89	108	121	149	174	231	280	342	376	421	1.1	1.4	-
519	7	62.6	.036	-	-	91.1	82.3	86.7	11.7	123	83	93	104	125	155	211	261	344	386	421	.9	2.2	-
520	2	59.5	-	-	-	90.4	83.0	86.7	11.3	123	80	89	100	120	149	215	268	324	349	406	.8	1.7	-
521	13	61.8	.020	-	.98	91.2	82.5	86.9	11.1	127	88	102	114	136	159	207	252	320	354	392	1.0	1.5	.00
522	5	63.6	.610	-	.58	91.5	83.2	87.4	11.9	124	84	98	110	133	161	217	261	329	359	398	.9	2.2	-
523	1	60.0	-	-	-	96.0	85.7	90.9	11.7	122	85	98	110	130	155	198	239	303	341	371	1.0	2.5	-
524	3	59.2	.059	-	-	92.8	83.8	88.3	11.1	129	86	102	115	139	165	217	267	335	368	412	.9	1.4	-
525	6	60.9	.050	-	2.40	91.5	83.5	87.5	11.9	125	85	96	110	136	164	217	261	336	375	416	.8	1.7	.03
526	3	63.3	-	2	-	90.3	81.1	85.7	11.0	129	87	101	114	138	165	216	270	344	376	415	.6	2.0	-
527	4	63.2	-	-	-	90.5	83.3	86.9	11.3	130	87	102	117	148	175	220	259	328	370	398	.6	3.2	-
528	2	54.4	-	-	-	96.1	85.3	90.7	10.8	134	88	104	119	146	182	237	274	316	347	383	.8	2.7	-
529	15	60.7	.023	9	1.22	91.6	83.5	87.6	11.1	129	88	102	117	141	169	219	263	343	378	414	1.1	2.1	.02
530	12	59.2	.016	-	1.20	92.2	83.6	87.9	11.6	130	89	105	120	148	176	226	271	326	365	403	1.0	2.0	.02
531	8	63.6	.059	2	-	90.6	82.5	86.6	12.1	119	83	94	105	124	144	195	250	342	386	422	.9	1.7	-
532	6	60.8	.025	-	.83	92.5	84.3	88.4	11.3	129	88	100	115	143	177	222	269	337	384	428	1.1	2.4	.01
AVERAGE		60.8	.073	3	1.21	92.1	83.4	87.8	11.4	127	86	99	112	136	164	216	262	333	370	409	.9	2.0	.02
MINIMUM		53.4	.010	1	.58	89.9	81.1	85.7	10.1	119													.00
MAXIMUM		65.1	.610	9	2.40	96.2	85.7	90.9	12.4	136													.06

SAMPLES 130

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 13 SOUTH MOUNTAIN STATES--CONTINUED

SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												IRP	5	10	20	30	50	70	90	95	EP		
533	8	65.5	0.053	1	-	1.23	91.2	85.0	88.1	11.6	119	83	95	104	120	139	186	236	327	375	419	1.0	1.8
534	12	65.2	.010	1	6.77	2.00	91.3	86.1	88.7	12.0	121	82	96	108	127	150	197	249	323	362	402	.9	2.5
535	12	60.3	.030	-	1.40	2.12	93.2	85.6	89.4	11.1	130	87	100	118	144	170	218	265	331	364	408	1.0	2.3
536	5	60.6	.049	-	-	1.17	93.2	84.9	89.1	11.0	127	88	99	113	133	155	210	272	355	375	422	1.0	2.1
537	4	64.1	-	-	-	1.65	91.2	84.7	88.0	12.3	120	86	98	109	129	152	198	249	321	359	392	.8	1.8
538	15	61.0	.043	6	1.99	1.28	92.5	85.3	88.9	11.2	126	88	101	114	134	158	211	262	328	366	409	1.1	1.8
539	19	61.8	.055	-	1.58	1.63	92.6	84.9	88.8	10.5	131	89	105	119	142	166	213	263	332	366	399	1.0	1.4
540	1	61.6	.070	-	-	.81	92.8	84.9	88.9	12.5	120	90	99	109	128	148	199	254	317	359	392	1.3	1.7
541	3	63.4	-	-	-	1.45	93.3	85.3	89.3	11.0	130	87	96	114	143	172	222	267	339	401	415	1.1	3.0
542	8	62.3	.026	-	1.27	1.22	92.4	85.3	88.9	11.3	124	88	101	113	133	153	199	254	337	380	420	.8	1.6
543	4	63.1	-	-	.65	1.32	92.6	84.7	88.7	12.2	120	83	96	107	126	149	197	246	328	368	407	.9	2.1
544	3	63.4	-	1	-	1.62	91.1	84.3	87.7	11.7	125	85	94	108	134	163	214	267	337	374	409	.8	1.7
545	4	64.3	-	-	-	1.74	91.7	84.8	88.3	11.5	121	84	96	106	126	150	194	244	323	359	400	.8	1.3
546	5	64.8	-	2	-	1.50	90.9	84.7	87.8	12.2	120	85	97	107	125	148	196	252	330	370	412	.9	1.9
547	17	61.4	.019	-	1.10	1.35	93.0	85.3	89.2	10.9	129	88	101	116	139	164	210	259	335	369	408	1.0	1.9
548	2	66.2	-	-	-	.45	91.8	83.3	87.6	12.9	114	84	91	101	115	135	182	241	344	383	426	.9	1.6
549	1	58.6	.028	3	-	3.85	87.6	84.1	85.9	8.7	148	112	137	156	172	187	218	251	321	358	-	1.0	1.0
550	3	60.6	.053	-	-	1.19	92.7	85.3	89.0	11.4	125	88	102	113	132	154	202	257	343	380	416	1.1	1.5
551	6	63.5	.060	-	-	1.28	91.9	84.4	88.2	11.7	123	86	101	111	131	152	198	245	332	380	415	1.0	1.5
552	11	60.7	.051	-	.87	1.42	92.7	85.5	89.1	11.0	127	88	103	115	133	155	205	262	334	367	412	1.1	1.6
AVERAGE		62.6	.042	2	1.95	1.51	92.0	84.9	88.5	11.4	125	88	100	113	133	156	203	255	332	371	410	1.0	1.8
MINIMUM		58.6	.010	1	.65	.45	87.6	83.3	85.9	8.7	114												
MAXIMUM		66.2	.070	6	6.77	3.85	93.3	86.1	89.4	12.9	148												

SAMPLES 143

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 13 SOUTH MOUNTAIN STATES--CONTINUED
 SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)									RES %	LOSS %	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
553	1	65.2	-	-	0.40	1.51	98.5	89.8	94.2	11.1	129	88	101	117	143	170	214	250	331	359	410	1.0	3.0
554	12	60.5	0.018	-	.89	2.23	98.0	90.3	94.2	11.2	130	88	102	118	143	171	221	267	333	368	409	1.0	2.1
555	6	69.1	-	1	-	1.30	96.6	91.4	94.0	11.3	124	83	96	108	131	155	202	234	311	361	406	1.1	2.4
556	8	59.2	.022	-	1.01	3.11	98.6	91.3	95.0	11.1	131	88	103	120	144	172	226	275	338	369	414	1.1	1.7
557	15	62.4	.026	-	.81	2.06	98.0	90.2	94.1	10.2	133	91	106	119	143	167	213	254	322	358	399	.9	1.5
558	8	66.1	.017	-	.77	1.59	98.1	92.0	95.1	11.5	125	85	99	113	135	158	206	246	318	369	416	.8	1.7
559	8	60.5	.024	-	.83	2.16	98.4	91.2	94.8	11.7	127	87	101	116	140	167	218	264	334	374	414	.9	1.7
560	13	63.1	.030	4	.86	2.03	98.0	90.9	94.5	11.1	126	88	99	112	135	161	213	254	324	366	415	1.0	1.8
561	6	64.8	.047	-	-	1.88	97.7	89.7	93.7	11.9	123	84	96	108	130	156	211	254	335	376	413	.8	2.6
562	2	61.3	.049	-	-	1.80	98.1	90.8	94.5	11.1	127	89	99	112	134	160	213	252	331	367	408	.7	2.3
563	5	65.4	.044	-	-	1.78	98.4	91.4	94.9	11.0	129	86	101	114	138	165	217	255	333	372	407	.8	1.7
564	8	61.1	.031	-	.89	2.09	98.1	91.0	94.6	11.3	128	89	103	116	141	168	216	265	347	387	420	1.2	1.9
565	4	65.1	-	1	-	2.29	96.3	88.9	92.6	12.4	119	83	93	104	124	150	205	248	338	385	424	1.2	2.2
566	1	58.0	.019	-	-	2.03	98.3	91.2	94.8	12.0	124	88	97	109	134	157	214	265	334	374	412	1.2	1.8
567	7	70.3	.050	1	-	1.70	97.9	93.8	95.9	12.0	121	84	98	109	129	154	202	237	303	355	410	1.0	2.6
568	1	69.0	-	-	-	1.34	97.0	89.1	93.1	12.2	119	80	92	102	120	144	202	225	308	363	421	.9	2.1
569	2	68.8	-	-	-	1.53	98.6	92.5	95.6	11.9	122	81	94	107	134	151	199	234	305	363	405	.8	.7
AVERAGE		64.1	.031	2	.81	1.91	97.9	90.9	94.4	11.5	126	86	99	112	135	160	211	252	326	369	412	1.0	2.0
MINIMUM		58.0	.017	1	.40	1.30	96.3	88.9	92.6	10.2	119												
MAXIMUM		70.3	.050	4	1.01	3.11	98.6	93.8	95.9	12.4	133												

SAMPLES 107

09

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 14 NORTH MOUNTAIN STATES
 WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL			
						RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %	
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
570	2	63.1	0.063	-	-	91.8	82.3	87.1	13.6	115	81	90	100	122	149	206	250	319	349	387	1.1	4.9	-	
571	6	63.0	.031	0	0.93	92.1	83.3	87.7	12.5	120	83	93	106	129	155	202	242	326	364	408	1.1	3.9	-	
572	2	61.2	-	-	-	91.7	83.4	87.6	11.4	128	86	102	115	140	176	223	261	326	370	412	.9	2.6	-	
573	4	63.7	.030	0	-	91.4	82.1	86.8	12.0	121	81	96	104	125	150	201	243	316	357	399	.8	3.3	-	
574	4	63.4	.034	0	-	91.2	84.0	87.6	11.7	124	82	98	108	133	161	209	243	323	367	405	.9	4.1	-	
575	2	63.6	-	-	-	91.6	83.4	87.5	12.9	121	85	96	109	136	168	215	248	313	343	385	.9	4.6	-	
576	5	63.2	.036	0	-	91.5	82.4	87.0	11.6	126	84	99	110	134	160	211	256	333	371	407	.7	3.8	-	
577	3	63.5	.088	-	-	91.5	83.6	87.6	12.7	123	82	99	113	140	174	219	257	327	377	392	1.1	3.9	-	
578	4	64.3	.015	0	-	91.3	83.9	87.6	11.5	125	84	97	110	135	163	208	240	301	334	376	1.0	3.5	-	
579	1	65.5	.060	0	-	90.7	84.2	87.5	11.7	121	84	-	100	123	151	204	239	325	366	410	1.1	4.9	-	
580	6	65.8	.040	0	-	91.1	83.5	87.3	11.9	123	82	99	112	134	164	207	240	330	369	397	.9	4.1	-	
581	2	62.8	.035	0	-	90.7	82.9	86.8	11.7	121	83	94	105	123	147	201	248	326	355	402	.8	3.3	-	
582	5	64.9	.039	0	-	90.9	83.0	87.0	12.1	123	84	99	111	137	165	210	244	328	374	399	.9	4.1	-	
583	4	64.9	.036	0	-	90.9	84.0	87.5	11.6	124	86	92	109	132	158	206	242	319	352	398	1.0	3.8	-	
584	2	62.1	-	-	-	91.6	83.4	87.5	11.9	126	88	103	117	142	171	216	256	319	357	383	.5	3.5	-	
AVERAGE		63.7	.042	0	.93	91.3	83.3	87.3	12.1	123	84	97	109	132	161	209	247	322	360	397	.9	3.9	-	
MINIMUM		61.2	.015	0	.93	90.7	82.1	86.8	11.4	115														-
MAXIMUM		65.8	.088	0	.93	92.1	84.2	87.7	13.6	128														-

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 14 NORTH MOUNTAIN STATES--CONTINUED
 WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
												PERCENT EVAPORATED											
												IRP	5	10	20	30	50	70	90	95	EP		
585	5	63.6	0.055	1	0.73	1.04	93.1	84.7	88.9	12.5	118	83	92	102	123	145	195	245	328	368	396	1.1	3.6
586	2	63.6	-	-	-	1.43	92.7	85.7	89.2	12.7	117	82	95	106	125	146	190	240	315	366	404	1.1	2.9
587	2	63.2	-	-	-	1.35	92.4	85.4	88.9	12.5	118	85	97	107	125	146	190	240	318	363	390	1.0	3.0
588	2	64.8	-	-	-	1.45	93.4	86.9	90.2	12.7	118	83	95	107	125	148	195	239	316	340	400	1.1	3.9
589	3	63.3	.112	-	-	1.22	92.3	85.3	88.8	12.7	117	92	95	106	125	145	190	242	322	367	409	1.1	2.4
590	6	63.4	.041	1	-	1.82	91.5	84.7	88.1	12.0	119	82	92	103	125	147	195	244	328	367	417	.9	3.3
591	3	62.8	.035	0	-	.94	93.5	85.0	89.3	12.9	118	82	92	101	122	148	203	253	332	369	406	.8	4.8
592	1	63.2	.028	0	-	1.04	93.0	84.7	88.9	12.6	117	84	92	104	120	143	190	240	312	344	384	.7	4.8
593	5	63.7	.021	0	-	1.35	93.0	85.2	89.1	11.8	121	85	98	107	127	148	192	240	305	343	364	1.0	3.4
594	6	63.9	.054	0	-	1.54	92.6	85.6	89.1	11.8	124	83	101	115	134	159	202	257	331	377	402	.9	3.2
595	6	63.2	.037	1	-	1.43	91.7	84.7	88.2	12.1	121	83	95	109	130	155	199	252	331	371	406	1.0	2.5
596	8	62.9	.060	1	-	.97	92.8	84.3	88.6	11.8	123	84	93	108	131	156	206	254	330	359	397	1.0	3.4
597	6	64.2	.034	1	-	1.42	92.1	84.9	88.5	12.4	123	85	100	113	137	163	208	256	342	385	420	1.0	2.9
598	3	63.4	.090	-	-	.90	93.3	84.9	89.1	14.6	110	79	85	93	116	141	202	257	338	368	408	1.0	6.0
AVERAGE		63.5	.052	1	.73	1.28	92.7	85.1	88.9	12.5	119	83	94	106	126	149	197	247	325	363	400	1.0	3.6
MINIMUM		62.8	.021	0	.73	.90	91.5	84.3	88.1	11.8	110												
MAXIMUM		64.8	.112	1	.73	1.82	93.5	86.9	90.2	14.6	124												

SAMPLES 58

22

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 14 NORTH MOUNTAIN STATES--CONTINUED
 WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MON, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED										EP	
							IBP	5	10			20	30	50	70	90	95						
599	6	66.4	0.062	0	-	2.05	99.0	91.1	95.1	11.7	124	80	96	111	133	168	206	237	333	371	404	0.9	3.8
600	2	65.6	-	-	-	1.80	98.9	90.9	94.9	12.9	121	81	92	106	137	173	214	243	324	360	416	.7	5.8
601	7	64.8	.063	2	-	1.51	97.8	90.1	94.0	11.7	126	84	97	113	140	173	214	252	345	381	420	.8	4.5
602	3	68.7	.044	-	-	1.06	97.0	89.3	93.2	14.5	112	78	86	96	120	149	203	231	294	340	405	.7	6.8
603	4	62.5	.060	0	-	2.21	98.5	91.2	94.9	11.6	122	83	93	104	127	150	205	245	306	335	375	1.0	3.5
604	4	68.9	.037	0	-	1.78	98.4	90.8	94.6	12.1	122	85	96	107	129	158	203	234	313	355	401	.9	4.1
605	2	65.1	-	-	-	2.01	99.1	90.8	95.0	12.3	122	82	96	108	135	172	212	243	318	362	412	1.0	4.0
606	2	65.0	-	-	-	1.85	99.0	90.8	94.9	12.7	120	82	90	102	132	167	215	241	315	352	400	.5	4.5
607	4	66.9	.036	0	-	2.00	99.0	91.0	95.0	11.5	123	83	96	105	129	156	201	235	314	358	401	1.0	3.6
608	3	65.5	.048	1	-	2.02	98.6	91.1	94.9	12.2	125	81	100	114	140	174	214	248	347	391	418	1.2	3.6
609	4	64.6	.053	1	-	1.98	98.5	90.8	94.7	11.2	125	84	93	105	131	162	207	241	332	376	420	1.1	4.0
610	1	65.1	.106	-	-	1.35	98.3	89.8	94.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
611	7	68.0	.037	1	-	1.65	98.1	90.3	94.2	11.1	127	87	98	112	136	163	209	246	325	360	398	1.0	3.0
612	3	63.8	.057	1	-	2.11	98.2	90.1	94.2	10.8	129	83	99	113	140	169	211	250	342	387	422	.8	2.8
AVERAGE		65.8	.055	1	-	1.81	98.5	90.6	94.6	12.0	123	83	95	107	133	164	209	242	324	364	407	.9	4.2
MINIMUM		62.5	.036	0	-	1.06	97.0	89.3	93.2	10.8	112												
MAXIMUM		68.9	.106	2	-	2.21	99.1	91.2	95.1	14.5	129												

SAMPLES 52

68

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 15 PACIFIC NORTHWEST
 WESTERN WASH. AND WESTERN OREG.

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL			
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %	
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
613	1	62.5	0.005	-	1.49	96.0	86.3	91.2	12.3	124	82	97	113	143	170	216	249	307	342	407	1.0	1.0	0.00	
614	5	57.8	.008	1	1.09	93.3	84.7	89.0	13.5	117	80	88	98	121	148	219	288	336	369	409	1.0	2.7	.01	
615	4	61.0	.017	-	.85	94.0	85.4	89.7	14.1	117	81	90	103	129	150	217	266	329	375	416	1.1	3.4	.00	
616	5	63.8	.009	2	.59	92.0	82.8	87.4	12.7	120	83	96	109	129	154	205	251	311	347	385	1.0	2.0	.00	
617	1	63.3	.015	-	-	92.0	83.6	87.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
618	6	60.5	.032	2	1.04	91.8	83.5	87.7	12.3	126	80	96	110	139	170	217	263	332	368	414	1.1	2.3	.02	
619	4	63.0	.012	2	.40	92.9	84.0	88.5	12.4	115	74	84	94	116	140	192	242	307	330	364	1.0	2.0	.00	
620	4	62.3	.014	1	.20	95.8	86.4	91.1	12.4	120	82	93	105	130	156	203	239	294	330	377	.8	2.4	.00	
621	4	58.2	.027	-	1.18	92.2	83.6	87.9	12.0	129	88	102	122	150	180	230	276	339	378	426	.9	1.9	.02	
AVERAGE		61.4	.015	2	.86	93.3	84.5	88.9	12.7	121	81	93	107	132	159	212	259	319	355	400	1.0	2.2	.01	
MINIMUM		57.8	.005	1	.20	91.8	82.8	87.4	12.0	115														.00
MAXIMUM		63.8	.032	2	1.49	96.0	86.4	91.2	14.1	129														.02

SAMPLES 34

64

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 15 PACIFIC NORTHWEST--CONTINUED
 WESTERN WASH. AND WESTERN OREG.

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
622	5	60.2	0.036	1	1.39	0.69	93.2	85.6	89.4	12.6	118	85	95	106	123	144	193	266	355	387	429	1.0	1.7
623	4	60.1	.024	-	1.94	1.43	93.0	86.9	90.0	12.3	126	85	100	121	146	169	218	266	327	370	413	1.2	2.5
624	5	62.5	.022	3	.90	1.34	93.5	85.3	89.4	13.0	121	85	96	109	133	162	217	272	339	368	403	1.0	2.8
625	1	63.1	.030	-	-	1.60	93.2	85.5	89.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
626	3	61.2	.023	1	.70	1.00	92.9	85.6	89.3	13.2	116	75	88	101	122	150	200	256	334	360	396	.0	2.5
627	6	60.1	.028	3	1.62	1.07	92.1	86.0	89.1	12.0	127	86	103	114	141	166	210	259	334	373	419	1.0	1.7
628	5	59.8	.015	1	1.91	1.43	92.8	86.6	89.7	12.5	125	85	100	116	144	168	220	268	330	367	411	.9	2.6
AVERAGE		61.0	.025	2	1.41	1.22	93.0	85.9	89.5	12.6	122	84	97	111	135	160	210	265	337	371	412	.9	2.3
MINIMUM		59.8	.015	1	.70	.69	92.1	85.3	89.1	12.0	116												
MAXIMUM		63.1	.036	3	1.94	1.60	93.5	86.9	90.0	13.2	127												
SAMPLES	29																						

65

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 15 PACIFIC NORTHWEST--CONTINUED
 WESTERN WASH. AND WESTERN OREG.

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES %	LOSS %
												PERCENT EVAPORATED										EP		
												IBP	5	10	20	30	50	70	90	95				
629	5	63.6	0.010	2	1.48	0.96	99.1	89.7	94.4	12.2	120	83	96	109	129	150	196	235	293	321	373	0.9	1.9	
630	3	62.4	.014	1	.30	1.63	98.4	89.8	94.1	12.4	119	80	95	107	127	150	199	250	312	336	369	1.0	1.5	
631	1	63.1	.017	-	-	2.20	98.7	89.8	94.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
632	4	58.6	.011	-	1.78	1.57	98.5	91.0	94.8	11.9	127	84	94	110	137	162	230	286	332	370	416	1.0	3.5	
633	6	59.2	.027	2	.96	2.09	98.7	91.1	94.9	12.4	124	82	95	109	135	168	223	271	327	361	411	1.0	2.8	
634	5	64.3	.011	2	.63	2.27	99.3	90.8	95.1	12.3	121	84	96	109	130	156	204	247	310	348	386	.7	2.3	
635	5	56.5	.009	2	1.48	2.01	98.4	91.1	94.8	12.9	122	81	92	107	133	162	222	277	334	364	411	1.1	2.9	
636	4	62.0	.010	-	1.68	1.62	99.5	90.8	95.2	12.4	121	86	97	110	130	153	203	251	309	342	394	1.0	2.3	
AVERAGE		61.2	.014	2	1.19	1.79	98.8	90.5	94.7	12.4	122	83	95	109	132	157	211	260	317	349	394	1.0	2.5	
MINIMUM		56.5	.009	1	.30	.96	98.4	89.7	94.1	11.9	119													
MAXIMUM		64.3	.027	2	1.78	2.27	99.5	91.1	95.2	12.9	127													

SAMPLES 33

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 16 NORTH CALIFORNIA

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %	
											PERCENT EVAPORATED												
											IBP	5	10	20	30	50	70	90	95	EP			
637	1	55.9	-	-	-	94.3	84.8	89.6	10.4	135	87	105	121	149	179	233	279	337	369	420	1.0	2.0	-
638	7	56.6	0.006	1	1.01	93.6	84.4	89.0	11.8	130	83	100	116	149	180	234	279	334	373	417	1.0	2.4	0.00
639	7	61.4	.014	1	1.32	96.5	85.7	91.1	11.4	124	87	99	114	134	156	200	237	300	334	385	1.0	1.8	.00
640	6	56.9	.008	0	1.29	93.9	84.6	89.3	10.8	135	88	109	124	153	182	234	279	338	373	414	1.2	1.2	.00
641	3	57.3	-	-	-	93.5	84.3	88.9	11.3	130	89	102	116	143	175	225	269	332	365	409	1.0	4.2	-
642	6	58.5	.011	1	1.49	94.5	85.3	89.9	11.7	126	84	96	111	136	164	220	268	324	361	402	1.1	2.4	.00
643	6	58.4	.021	0	1.13	93.3	84.1	88.7	11.3	131	88	103	118	145	175	228	272	330	364	409	1.1	2.1	.00
644	6	59.4	.015	0	1.88	94.8	85.3	90.1	12.0	126	85	98	115	139	166	218	260	325	360	398	1.1	2.0	.00
645	4	58.6	.007	1	-	92.4	83.5	88.0	11.2	131	87	103	121	149	178	222	264	332	367	406	1.0	2.0	.00
646	7	54.7	.004	1	.97	94.9	85.5	90.2	12.8	124	86	99	113	141	168	228	285	335	370	417	1.0	2.4	.00
AVERAGE		57.8	.011	1	1.30	94.2	84.8	89.5	11.5	129	86	101	117	144	172	224	269	329	364	408	1.1	2.3	.00
MINIMUM		54.7	.004	0	.97	92.4	83.5	88.0	10.4	124													.00
MAXIMUM		61.4	.021	1	1.88	96.5	85.7	91.1	12.8	135													.00
SAMPLES	53																						

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 16 NORTH CALIFORNIA--CONTINUED

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED										EP	
							IBP	5	10			20	30	50	70	90	95						
647	6	59.7	0.007	0	1.46	1.11	94.1	86.5	90.3	11.7	127	86	103	119	145	170	213	261	320	358	413	1.1	2.7
648	6	58.8	.038	2	1.19	1.22	93.9	85.3	89.6	10.4	132	88	103	120	144	164	213	262	331	363	407	1.0	2.1
649	7	59.4	.017	1	1.52	1.14	93.7	86.6	90.2	11.6	127	84	98	117	143	168	216	264	326	361	413	1.0	3.0
650	6	58.5	.029	1	1.12	1.01	93.5	85.4	89.5	11.1	127	86	97	109	130	155	221	288	351	382	424	.9	1.5
651	5	58.5	.014	0	-	1.25	93.9	85.8	89.9	12.0	127	85	97	116	144	173	223	271	333	361	398	.9	3.3
652	1	59.4	-	-	-	1.04	93.9	85.6	89.8	10.8	130	86	105	121	143	167	213	258	320	358	393	1.0	2.5
653	6	59.7	.019	1	1.41	.76	94.6	86.2	90.4	12.3	121	81	92	109	132	156	203	252	321	361	397	.9	2.8
654	5	59.5	.023	1	1.30	.88	94.1	85.5	89.8	11.8	124	84	97	111	135	159	207	262	330	367	413	1.2	2.0
655	2	64.4	-	-	-	1.80	92.9	86.9	89.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AVERAGE		59.8	.021	1	1.33	1.13	93.8	86.0	89.9	11.5	127	85	99	115	140	164	214	265	329	364	407	1.0	2.5
MINIMUM		58.5	.007	0	1.12	.76	92.9	85.3	89.5	10.4	121												
MAXIMUM		64.4	.038	2	1.52	1.80	94.6	86.9	90.4	12.3	132												
SAMPLES	44																						

89

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 16 NORTH CALIFORNIA--CONTINUED

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED										EP	
							IBP	5	10			20	30	50	70	90	95						
656	5	59.4	0.010	1	0.92	1.54	99.0	90.5	94.8	11.4	127	84	96	110	136	163	214	260	323	359	410	1.0	2.8
657	5	59.3	.011	1	1.66	.70	99.3	90.0	94.7	12.2	122	82	91	107	130	156	211	254	311	344	399	1.0	3.3
653	6	60.5	.005	1	1.34	2.73	97.4	90.9	94.2	11.2	125	87	102	115	136	157	201	252	322	352	406	1.0	1.8
659	5	58.9	.007	1	1.09	2.00	98.6	91.0	94.8	11.3	129	87	100	118	144	168	218	264	323	358	409	1.0	2.8
660	6	58.5	.006	1	1.26	2.31	98.6	90.7	94.7	11.7	128	86	100	116	142	167	220	268	324	359	407	1.0	2.3
661	6	60.1	.015	1	1.50	1.78	99.2	89.9	94.6	11.5	124	84	98	110	129	151	199	252	322	353	405	1.0	1.9
662	4	58.5	.004	1	-	1.58	98.3	90.4	94.4	11.3	131	85	101	121	149	177	223	268	332	362	405	1.0	2.7
663	1	57.8	-	-	-	1.28	99.0	90.3	94.7	10.3	134	88	105	121	145	174	222	263	322	348	410	.7	2.3
664	2	60.2	-	-	-	1.45	99.3	90.3	94.8	11.8	122	85	97	107	126	152	202	249	318	343	402	.7	3.3
665	5	59.4	.017	1	2.09	.96	99.1	90.2	94.7	11.9	126	85	98	114	138	166	217	256	318	352	407	1.0	2.3
AVERAGE		59.3	.009	1	1.41	1.63	98.8	90.4	94.6	11.5	127	85	99	114	138	163	213	259	322	353	406	.9	2.6
MINIMUM		57.8	.004	1	.92	.70	97.4	89.9	94.2	10.3	122												
MAXIMUM		60.5	.017	1	2.09	2.73	99.3	91.0	94.8	12.2	134												

69

45

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 17 SOUTH CALIFORNIA

UNLEADED GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											MANGA- NESE AA G/GAL		
						RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												RES LOSS % %	
											PERCENT EVAPORATED													
											IBP	5	10	20	30	50	70	90	95	EP				
666	6	57.8	0.036	1	0.90	91.6	82.9	87.3	11.6	126	84	98	111	136	164	219	272	334	358	390	0.9	1.9	0.00	
667	4	56.7	.014	1	.85	95.1	85.4	90.3	12.2	127	84	100	117	146	178	227	271	323	356	396	.9	2.5	.00	
668	3	56.8	.035	0	1.20	92.0	83.3	87.7	11.8	127	83	96	110	137	165	225	279	337	368	407	1.1	2.2	.00	
669	4	56.6	.032	1	1.26	92.1	83.3	87.7	11.6	127	82	96	111	137	164	222	276	334	365	408	1.1	2.0	.00	
670	3	53.5	.020	1	1.22	96.4	85.6	91.0	12.1	129	90	101	112	144	183	242	282	324	359	401	1.0	1.8	.00	
671	2	54.9	.042	0	-	92.9	83.7	88.3	10.5	138	90	108	130	165	197	240	283	344	380	425	.8	2.5	-	
672	5	57.5	.024	1	1.55	92.6	84.0	88.3	12.4	123	82	94	110	131	156	214	271	330	370	414	1.1	2.4	.00	
673	7	57.4	.011	1	1.02	94.2	85.0	89.6	11.5	129	87	101	117	144	173	222	264	321	362	411	1.0	2.5	.00	
674	7	55.7	.027	1	1.07	93.7	84.0	88.9	11.5	130	85	100	116	143	177	238	283	333	363	413	1.0	2.1	.00	
675	1	56.1	.032	-	-	92.5	84.2	88.4	11.3	130	84	100	114	141	172	229	278	337	371	419	.6	2.4	-	
676	8	55.7	.029	3	1.45	92.8	83.6	88.2	12.0	127	84	99	113	139	166	226	283	347	382	423	1.0	1.9	.00	
677	7	60.3	.021	1	1.01	95.5	85.7	90.6	11.3	129	86	103	118	142	168	215	252	310	346	398	1.0	1.5	.00	
AVERAGE		56.6	.027	1	1.15	93.5	84.2	88.9	11.7	129	85	100	115	142	172	227	275	331	365	409	1.0	2.1	.00	
MINIMUM		53.5	.011	0	.85	91.6	82.9	87.3	10.5	123													.00	
MAXIMUM		60.3	.042	3	1.55	96.4	85.7	91.0	12.4	138													.00	

SAMPLES 57

70

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED
 DIST. 17 SOUTH CALIFORNIA--CONTINUED

REGULAR GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	RENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % %	
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
678	5	57.2	0.046	2	0.49	0.99	93.5	84.8	89.2	11.2	131	86	102	116	145	175	232	286	342	365	396	0.8	1.7
679	4	60.6	.062	1	1.00	1.18	93.4	85.4	89.4	11.2	126	85	100	113	134	157	204	263	340	375	412	1.0	2.0
680	1	60.5	.084	-	-	1.10	92.5	85.2	88.9	11.2	125	86	101	112	131	151	201	274	356	386	429	.9	1.6
681	7	57.3	.059	3	1.24	.40	94.3	84.7	89.5	11.8	126	86	98	109	136	159	220	281	351	385	430	1.1	1.6
682	7	59.6	.035	1	.71	1.30	93.4	85.5	89.5	11.0	129	86	103	117	139	162	206	263	345	385	425	1.1	1.7
683	5	58.7	.068	1	1.09	1.13	93.3	85.6	89.5	12.1	120	84	96	108	127	148	199	270	348	386	425	1.0	1.4
684	1	58.3	.056	-	-	1.20	93.3	85.3	89.3	10.7	128	86	101	114	138	163	206	253	337	382	415	.6	2.4
685	7	62.0	.021	1	1.13	1.31	93.3	86.0	89.7	12.1	120	84	96	109	130	151	198	251	311	343	378	1.0	2.2
686	3	58.8	.055	0	1.10	1.23	93.2	85.6	89.4	11.4	125	82	97	112	135	162	206	269	342	378	413	.9	1.9
687	7	60.1	.081	1	.97	1.14	93.5	85.1	89.3	11.2	125	86	100	113	131	154	204	269	352	384	419	1.0	1.8
AVERAGE		59.3	.057	1	.97	1.10	93.4	85.3	89.4	11.4	126	85	99	112	135	158	208	268	342	377	414	.9	1.8
MINIMUM		57.2	.021	0	.49	.40	92.5	84.7	88.9	10.7	120												
MAXIMUM		62.0	.084	3	1.24	1.31	94.3	86.0	89.7	12.1	131												

SAMPLES 47

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 17 SOUTH CALIFORNIA--CONTINUED

PREMIUM GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES %	LOSS %
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
688	1	60.0	0.104	-	-	1.95	97.6	90.4	94.0	11.5	126	85	96	109	135	167	220	268	337	363	426	0.5	3.5
689	7	60.8	.009	1	0.97	2.36	98.4	90.8	94.6	12.0	123	86	99	112	133	156	206	258	315	362	401	1.1	2.0
690	7	59.8	.022	1	1.19	1.67	98.9	90.1	94.5	11.2	127	86	101	115	138	161	206	253	322	356	411	1.0	2.1
691	5	60.3	.031	1	1.17	1.75	98.7	91.3	95.0	12.0	127	84	99	115	142	172	221	267	331	373	414	1.0	2.6
692	1	53.9	.070	-	-	2.42	98.9	89.3	94.1	10.7	137	86	104	123	162	195	241	287	356	379	428	.8	3.2
693	8	61.7	.053	2	1.37	1.17	99.2	90.1	94.7	12.2	122	83	97	109	133	158	209	254	324	359	416	1.0	2.3
694	7	58.0	.045	2	1.06	2.30	98.9	90.5	94.7	11.9	128	85	97	112	142	173	228	274	337	370	413	1.0	2.5
695	3	55.9	.041	0	.90	2.31	98.2	89.6	93.9	11.4	131	84	95	114	150	182	234	283	343	369	414	1.0	3.1
696	4	59.0	.030	1	.87	2.08	98.7	90.9	94.8	11.9	126	86	100	113	140	172	224	269	335	373	418	1.0	2.5
697	7	60.3	.011	1	1.12	2.45	97.2	90.9	94.1	11.8	123	87	102	113	134	155	198	253	350	387	425	1.2	2.0
698	5	59.3	.006	2	.80	1.90	98.2	91.7	95.0	11.6	128	88	102	116	142	168	223	268	330	366	397	1.0	1.9
AVERAGE		59.0	.038	1	1.05	2.03	98.4	90.5	94.5	11.7	127	85	99	114	141	169	219	267	335	369	415	1.0	2.5
MINIMUM		53.9	.006	0	.80	1.17	97.2	89.3	93.9	10.7	122												
MAXIMUM		61.7	.104	2	1.37	2.45	99.2	91.7	95.0	12.2	137												

SAMPLES 55

72

TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR BRANDS IN EACH DISTRICT

UNLEADED GASOLINE

DISTRICT NO. AND NAME	NO. OF BRANDS	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										MANGA- NESE AA G/GAL				
							RES. ASTM D2699	MOT. ASTM D2700	R+M --- 2			TEMPERATURE, F (CORRECTED TO 760 MM HG)											RES LOSS % %			
												PERCENT EVAPORATED														
												IBP	5	10	20	30	50	70	90	95	EP					
1	NORTHEAST	14	25	60.2	0.011	1	0.91	93.6	83.8	88.7	13.3	117	80	89	100	122	150	210	256	325	355	398	0.9	2.3	0.05	
2	MID-ATLANTIC COAST	20	149	60.3	.019	1	1.10	93.3	84.0	88.7	12.9	119	82	92	104	126	153	212	265	336	369	409	.9	2.4	.04	
3	SOUTHEAST	21	91	59.7	.012	1	.94	93.0	83.7	88.4	11.4	127	85	99	111	134	160	217	267	332	363	406	.8	1.8	.05	
4	APPALACHIAN	15	49	61.9	.022	2	1.30	93.2	83.7	88.5	13.4	116	81	90	100	122	145	206	258	329	361	408	.9	2.6	.07	
5	MICHIGAN	16	62	61.7	.028	1	.85	93.4	84.3	88.9	13.6	118	82	92	105	128	156	213	261	334	368	414	1.0	2.9	.03	
6	NORTH ILLINOIS	14	38	61.0	.038	2	1.75	93.5	84.3	88.9	12.7	121	82	92	106	129	157	212	261	333	367	408	1.1	2.2	.03	
7	CENTRAL MISSISSIPPI	22	49	62.0	.030	2	.77	92.8	83.6	88.2	13.1	117	83	93	103	123	148	204	254	329	363	408	1.0	2.2	.02	
8	LOWER MISSISSIPPI	16	60	60.6	.025	0	.58	92.9	83.6	88.3	12.6	120	82	95	106	128	154	208	258	327	356	395	.8	2.1	.05	
9	NORTH PLAINS	11	11	62.8	.043	-	1.80	91.7	82.9	87.3	12.5	121	85	98	109	131	155	208	251	327	366	399	1.0	2.0	-	
10	CENTRAL PLAINS	11	42	63.3	.026	1	1.82	92.5	83.9	88.3	12.5	120	83	94	105	126	151	208	249	324	358	407	.6	2.2	-	
11	SOUTH PLAINS	22	62	62.4	.033	1	2.11	92.4	84.0	88.2	12.3	123	83	93	107	132	162	214	255	327	363	406	.8	2.9	.03	
12	SOUTH TEXAS	14	39	59.9	.022	2	.86	93.1	83.5	88.3	12.0	122	84	96	107	128	154	211	262	331	363	402	.9	1.9	.05	
13	SOUTH MOUNTAIN STATES	22	130	60.8	.073	3	1.21	92.1	83.4	87.8	11.4	127	86	99	112	136	164	216	262	333	370	409	.9	2.0	.02	
14	NORTH MOUNTAIN STATES	15	52	63.7	.042	0	.93	91.3	83.3	87.3	12.1	123	84	97	109	132	161	209	247	322	360	397	.9	3.9	-	
15	PACIFIC NORTHWEST	9	34	61.4	.015	2	.86	93.3	84.5	88.9	12.7	121	81	93	107	132	159	212	259	319	355	400	1.0	2.2	.01	
16	NORTH CALIFORNIA	10	53	57.8	.011	1	1.30	94.2	84.8	89.5	11.5	129	86	101	117	144	172	224	269	329	364	408	1.1	2.3	.00	
17	SOUTH CALIFORNIA	12	57	56.6	.027	1	1.15	93.5	84.2	88.9	11.7	129	85	100	115	142	172	227	275	331	365	409	1.0	2.1	.00	
AVERAGE			60.9	.028	1	1.19	92.9	83.9	88.4	12.5	122	83	95	107	130	157	212	259	329	363	405	.9	2.4	.03		
MINIMUM			56.6	.011	0	.58	91.3	82.9	87.3	11.4	116														.00	
MAXIMUM			63.7	.073	3	2.11	94.2	84.8	89.5	13.6	129															.07

SAMPLES 1,003

TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR BRANDS IN EACH DISTRICT--CONTINUED

DISTRICT NO. AND NAME		NO. OF BRANDS	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											RES LOSS % %	
									RES, ASTM D2699	MDT, ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)												
														PERCENT EVAPORATED												
									IBP	5	10			20	30	50	70	90	95	EP						
1	NORTHEAST	12	22	62.7	0.027	2	1.02	1.68	93.9	86.1	90.0	13.0	116	81	90	101	121	144	197	261	338	367	407	0.8	1.9	
2	MID-ATLANTIC COAST	16	127	62.1	.029	1	1.06	1.77	93.4	86.1	89.8	12.8	118	82	93	104	124	147	203	265	343	377	418	.9	2.3	
3	SOUTHEAST	18	87	61.8	.021	1	1.25	2.06	93.5	86.2	89.9	11.4	125	85	99	110	131	154	206	264	339	374	413	.8	1.7	
4	APPALACHIAN	13	49	62.0	.029	2	1.03	1.22	93.4	85.7	89.6	12.6	118	83	94	104	123	146	200	260	338	377	420	.9	2.2	
5	MICHIGAN	12	90	62.2	.046	1	1.41	1.58	93.3	85.9	89.6	13.3	117	82	92	106	127	151	206	265	346	386	425	1.1	2.6	
6	NORTH ILLINOIS	10	32	62.2	.070	1	.89	1.66	93.4	85.9	89.7	13.0	117	81	91	104	124	148	201	260	342	379	417	1.1	2.3	
7	CENTRAL MISSISSIPPI	19	44	62.0	.043	2	1.04	1.72	93.3	86.0	89.7	12.8	118	82	93	103	124	149	202	256	333	369	411	1.0	2.1	
8	LOWER MISSISSIPPI	14	56	63.4	.034	1	1.02	2.32	93.4	86.7	90.1	12.4	119	83	95	106	126	148	197	253	330	367	400	.9	1.8	
9	NORTH PLAINS	11	14	62.9	.044	-	2.20	1.25	92.8	84.1	88.4	12.8	118	84	96	106	126	149	196	248	323	356	403	.8	2.0	
10	CENTRAL PLAINS	11	37	63.8	.034	0	2.58	1.58	92.8	85.6	89.2	12.4	118	82	94	104	123	144	192	248	328	366	409	.8	2.0	
11	SOUTH PLAINS	22	63	63.6	.040	1	1.05	1.86	93.1	86.0	89.6	12.5	118	82	93	104	123	144	193	248	325	361	402	1.0	2.2	
12	SOUTH TEXAS	13	44	62.6	.036	2	.85	1.63	93.5	86.2	89.9	12.1	120	83	95	106	125	147	197	253	333	368	407	.9	2.0	
13	SOUTH MOUNTAIN STATES	20	143	62.6	.042	2	1.95	1.51	92.0	84.9	88.5	11.4	125	88	100	113	133	156	203	255	332	371	410	1.0	1.8	
14	NORTH MOUNTAIN STATES	14	58	63.5	.052	1	.73	1.28	92.7	85.1	88.9	12.5	119	83	94	106	126	149	197	247	325	363	400	1.0	3.6	
15	PACIFIC NORTHWEST	7	29	61.0	.025	2	1.41	1.22	93.0	85.9	89.5	12.6	122	84	97	111	135	160	210	265	337	371	412	.9	2.3	
16	NORTH CALIFORNIA	9	44	59.8	.021	1	1.33	1.13	93.8	86.0	89.9	11.5	127	85	99	115	140	164	214	265	329	364	407	1.0	2.5	
17	SOUTH CALIFORNIA	10	47	59.3	.057	1	.97	1.10	93.4	85.3	89.4	11.4	126	85	99	112	135	158	208	268	342	377	414	.9	1.8	
AVERAGE				62.2	.038	1	1.28	1.56	93.2	85.7	89.5	12.4	120	83	95	107	127	150	201	258	334	370	410	.9	2.2	
MINIMUM				59.3	.021	0	.73	1.10	92.0	84.1	88.4	11.4	116													
MAXIMUM				63.8	.070	2	2.58	2.32	93.9	86.7	90.1	13.3	127													
SAMPLES				986																						

TABLE 4. - MOTOR GASOLINE SURVEY, WINTER 1977-78
AVERAGE DATA FOR BRANDS IN EACH DISTRICT---CONTINUED

PREMIUM GASOLINE

DISTRICT NO. AND NAME	NO. OF BRANDS	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	BENZENE ASTM D3606 VOL. %	LEAD ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												
								RES. ASTM D2699	MOT. ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)									RES LOSS			
													PERCENT EVAPORATED									EP	%	%	
												IBP	5	10	20	30	50	70	90	95					
1	NORTH-EAST	10	19	62.7	0.023	3	0.90	2.31	98.9	90.9	94.9	13.1	118	82	93	103	123	146	204	259	327	361	397	0.8	2.4
2	MID-ATLANTIC COAST	16	95	61.6	.022	1	1.13	2.37	98.8	91.0	94.9	13.0	118	83	94	104	125	151	207	260	333	365	408	.9	2.3
3	SOUTHEAST	15	56	60.4	.012	1	.80	2.55	99.1	91.3	95.2	11.0	128	85	99	110	132	157	215	262	330	362	401	.6	1.5
4	APPALACHIAN	12	39	62.0	.017	1	1.76	2.17	98.9	91.1	95.0	13.3	116	80	90	101	122	149	204	256	331	368	411	.9	2.8
5	MICHIGAN	10	37	63.3	.040	1	.55	2.20	98.7	91.2	95.0	12.9	121	83	93	107	132	160	214	257	340	379	420	1.2	3.0
6	NORTH ILLINOIS	8	20	63.7	.055	2	1.10	2.29	99.1	91.5	95.3	12.7	120	81	91	105	129	159	209	253	333	368	411	1.1	2.5
7	CENTRAL MISSISSIPPI	16	36	64.0	.029	2	1.09	2.20	99.1	91.3	95.2	13.0	118	82	92	103	125	153	206	248	318	358	404	.9	2.3
8	LOWER MISSISSIPPI	11	45	62.1	.026	1	.50	2.62	99.1	91.3	95.2	12.4	120	82	94	105	127	151	206	254	325	357	396	.9	1.8
9	NORTH PLAINS	9	11	64.4	.041	-	-	2.22	99.2	91.0	95.1	12.2	124	85	101	113	139	167	212	253	327	367	407	.8	1.8
10	CENTRAL PLAINS	8	16	65.3	.016	0	-	2.03	98.8	91.1	95.0	11.9	123	83	96	106	127	154	211	254	331	367	411	.6	1.9
11	SOUTH PLAINS	17	43	63.5	.022	1	2.38	2.23	98.7	91.6	95.2	11.9	124	82	95	109	135	163	212	249	321	359	405	.8	2.8
12	SOUTH TEXAS	11	40	61.9	.018	3	.84	2.11	99.0	91.1	95.0	12.3	122	83	96	109	132	157	212	259	330	363	404	1.0	1.7
13	SOUTH MOUNTAIN STATES	17	107	64.1	.031	2	.81	1.91	97.9	90.9	94.4	11.5	126	86	99	112	135	160	211	252	326	369	412	1.0	2.0
14	NORTH MOUNTAIN STATES	14	52	65.8	.055	1	-	1.81	98.5	90.6	94.6	12.0	123	83	95	107	133	164	209	242	324	364	407	.9	4.2
15	PACIFIC NORTHWEST	8	33	61.2	.014	2	1.19	1.79	98.8	90.5	94.7	12.4	122	83	95	109	132	157	211	260	317	349	394	1.0	2.5
16	NORTH CALIFORNIA	10	45	59.3	.009	1	1.41	1.63	98.8	90.4	94.6	11.5	127	85	99	114	138	163	213	259	322	353	406	.9	2.6
17	SOUTH CALIFORNIA	11	55	59.0	.038	1	1.05	2.03	98.4	90.5	94.5	11.7	127	85	99	114	141	169	219	267	335	369	415	1.0	2.5
AVERAGE				62.6	.028	1	1.11	2.15	98.8	91.0	94.9	12.3	122	83	95	108	131	158	210	256	328	363	406	.9	2.4
MINIMUM				59.0	.009	0	.50	1.63	97.9	90.4	94.4	11.0	116												
MAXIMUM				65.8	.055	3	2.38	2.62	99.2	91.6	95.3	13.3	128												
SAMPLES						749																			

TABLE 5. - Cumulative percents of unleaded gasoline samples by districts,
motor gasoline survey, winter 1977-78

<u>District</u>	<u>Lead content, grams/gallon</u>				
	<u>0.00</u>	<u>0.01</u>	<u>0.02</u>	<u>0.03</u>	<u>0.04</u>
1	75.0	100.0			
2	55.0	87.5	100.0		
3	57.1	100.0			
4	70.0	100.0			
5	84.2	94.7	97.4	97.4	100.0
6		66.7	83.3	100.0	
7	87.5	100.0			
8	100.0				
9					
10					
11	75.0	100.0			
12	50.0	100.0			
13	81.3	96.9	100.0		
14	36.4	86.4	100.0		
15	66.7	95.2	95.2	100.0	
16	73.9	95.7	95.7	100.0	
17	63.6	90.9	100.0		
Cumulative total samples	192	265	279	282	283

TABLE 6. - Location and numbers of samples by districts and areas for motor gasoline survey, winter 1977-78

State	Location	Area	Samples	State	Location	Area	Samples	
<u>District 1 (Northeast)</u>				<u>District 11 (South Plains)</u>				
Massachusetts	Boston area	1	66	Kansas	Wichita	2	44	
	1 location		66	Oklahoma	Bartlesville	2	8	
					Oklahoma City	2	15	
<u>District 2 (Mid-Atlantic Coast)</u>					Tulsa	2	56	
D. C., Maryland, & Virginia	Washington area	1	18	Texas	Dallas-Fort Worth	1	45	
Maryland	Baltimore	1	39		5 locations		188	
New Jersey and New York	New York City area	1	85	<u>District 12 (Southern Texas)</u>				
Pennsylvania and New Jersey	Philadelphia area	1	147	Texas	Beaumont	1	3	
Virginia	Richmond	1	82		Corpus Christi	1	11	
	5 locations		371		Houston	1	91	
<u>District 3 (Southeast)</u>					San Antonio	1	18	
Alabama	Birmingham	1	61		4 locations		123	
Florida	Jacksonville	1	8	<u>District 13 (South Mountain States)</u>				
	Miami area	1	87	Arizona	Phoenix	4	46	
	Tampa	1	17		Tucson	4	39	
Georgia	Atlanta	1	45	California	Bakersfield	4	37	
South Carolina	Charleston	1	16		Fresno area	4	14	
	6 locations		234	Colorado	Denver	3	81	
<u>District 4 (Appalachian)</u>					Nevada	Las Vegas	4	10
New York	Buffalo	1	33		Reno	3	9	
Ohio	Cincinnati	1	6	New Mexico	Albuquerque	3	37	
	Cleveland	1	53		Hobbs	3	1	
	Columbus	1	9	Texas	Amarillo	3	48	
	Lima	1	9		El Paso	3	9	
	Toledo	1	3		Lubbock	3	6	
Pennsylvania	Pittsburgh	1	24	Utah	Salt Lake City	3	43	
	7 locations		137		13 locations		380	
<u>District 5 (Michigan)</u>				<u>District 14 (North Mountain States)</u>				
	Central Michigan	1	88	Idaho	Boise	3	59	
	Detroit	1	101	Montana	Billings	3	18	
	2 locations		189		Great Falls	3	3	
<u>District 6 (North Illinois)</u>					Washington	Spokane	4	73
Illinois and Indiana	Chicago area	1	94		Wyoming	Casper	3	6
Iowa	Davenport	2	2			Cody	3	3
	2 locations		96			6 locations		162
<u>District 7 (Central Mississippi)</u>				<u>District 15 (Pacific Northwest)</u>				
Indiana	Indianapolis	1	59	Oregon	Portland	4	51	
Kentucky	Louisville	1	32	Washington	Bellingham	4	18	
Missouri and Illinois	St. Louis area	2	32		Seattle	4	27	
	3 locations		123		3 locations		96	
<u>District 8 (Lower Mississippi)</u>				<u>District 16 (Northern California)</u>				
Arkansas	Little Rock	2	27	California	San Francisco Bay area	4	142	
Louisiana	Lake Charles	1	2		1 location		142	
	New Orleans	1	71	<u>District 17 (Southern California)</u>				
Tennessee	Memphis	1	61	California	Los Angeles area	4	142	
	4 locations		161		San Diego	4	17	
					2 locations		159	
<u>District 9 (North Plains)</u>				<hr/>				
Minnesota	Minneapolis-St Paul	2	30	Total	70 locations		2,738	
North Dakota	Fargo	2	5	<hr/>				
	Williston	2	1	District	Locations	Samples	Percent	
	3 locations		36	1	1	66	2.4	
<u>District 10 (Central Plains)</u>				2	5	371	13.6	
Iowa	Des Moines	2	29	3	6	234	8.5	
Kansas and Missouri	Kansas City area	2	48	4	7	137	5.0	
Nebraska	Omaha	2	18	5	2	189	6.9	
	3 locations		95	6	2	96	3.5	
				7	3	123	4.5	
				8	4	161	5.9	
				9	3	36	1.3	
				10	3	95	3.5	
				11	5	168	6.1	
				12	4	123	4.5	
				13	13	380	13.9	
				14	6	162	5.9	
				15	3	96	3.5	
				16	1	142	5.2	
				17	2	159	5.8	
				Total	70	2,738	100.0	

