CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

APPENDIX VI

Exhibit VI-2

Reservoir Fluid Study

for

K.R.M. PETROLEUM CORPORATION

G.C. Lemon No. 6 Well
Lemon Ranch Pool Field
Comanche County, Kansas

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75207
June 22, 1979

RESERVOIR FLUID DIVISION

K.R.M. Petroleum Corporation
817 17th Street
Suite 820
Denver, Colorado 80202

Attention: Mr. Jerry C. Simmons

Subject: Reservoir Fluid Study
G.C. Lemon No. 6 Well
Lemon Ranch Pool Field
Comanche County, Kansas
Our File Number: RFL 79352

Gentlemen:

Duplicate subsurface fluid samples were collected from the subject well by a representative of Tefteller, Inc. on May 21, 1979. These samples were submitted to our Dallas laboratory for use in a reservoir fluid study. Presented to you in the following report are the results of this study.

As a quality check, the room temperature saturation pressure of each subsurface sample was initially determined. At 72°F., the two subsurface samples were found to have bubble point pressures of 1473 psig and 1475 psig. These values were considered to be in excellent agreement with one another and the sample having the higher room temperature saturation pressure was selected for use in the reservoir fluid study.

The hydrocarbon composition of the reservoir fluid was measured by low temperature fractional distillation. The results of this distillation in terms of both mol percent and weight percent are presented on page two.

A portion of the subsurface fluid was initially subjected to constant composition expansion at the reservoir temperature of 125°F. During this expansion, a bubble point pressure of 1695 psig was determined. The results of the pressure-volume measurements at the reservoir temperature are presented on page four.

During differential pressure depletion at the reservoir temperature, the fluid liberated a total of 845 cubic feet of gas at 14.65 psia and 60°F. per barrel of residual oil at 60°F. The relative oil volume associated with this test was 1.490 barrels of saturated fluid per barrel of residual oil. In addition, the

oil density and the properties of the evolved gases were measured at each point during the depletion. A summary of the differential pressure depletion data may be found on page five.

Viscosity measurements were then performed on the reservoir fluid at 125°F. in a rolling ball viscosimeter. The viscosity of the fluid was found to vary from a minimum of 0.388 centipoise at the saturation pressure to a maximum of 1.390 centipoises at atmospheric pressure.

Four single-stage separator tests were then performed at 70°F. to determine the effect of separator pressure upon gas/oil ratio, stock tank oil gravity, formation volume factor and separator gas composition. The results of the four separator tests are tabulated on page seven and the associated chromatographic analyses of the separator gas samples may be found on page eight. The separator data indicates that optimum separation should occur near 90 psig at 70°F. and near optimum separation should occur over pressures ranging from 60 psig to 100 psig.

It has been our pleasure to perform this reservoir fluid study for K.R.M. Petroleum Corporation. Should you have any questions or if we may be of further assistance in any matter, please feel free to call upon us.

Very truly yours,

Core Laboratories, Inc.

P. L. Moses, Manager
Reservoir Fluid Analysis

PLM:JF:bt
7 cc: Addressee

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

File RFL 79352

Company K.R.M. Petroleum Corp. Date Sampled May 21, 1979

Well G.C. Lemon No. 6 County Comanche

Field Lemon Ranch Pool State Kansas

FORMATION CHARACTERISTICS

Formation Name	Lansing Kansas City
Date First Well Completed	, 19
Original Reservoir Pressure (Lemon No. 3)	1762 PSIG @ 4777 Ft.
Original Produced Gas-Oil Ratio	640 SCF/Bbl
Production Rate	160 Bbl/Day
Separator Pressure and Temperature	10 PSIG. 80 °F.
Oil Gravity at 60° F.	47 °API
Datum	3011 Ft. Subsea
Original Gas Cap	None

WELL CHARACTERISTICS

Elevation	1766 KB Ft.
Total Depth	4802 PB Ft.
Producing Interval	4778-4788 Ft.
Tubing Size and Depth	2-3/8 In. to 4770 Ft.
Productivity Index	Bbl/D/PSI @ Bbl/Day
Last Reservoir Pressure	1768 PSIG @ 4783 Ft.
Date	May 21 , 1979
Reservoir Temperature	125 °F. @ 4783 Ft.
Status of Well	Shut in
Pressure Gauge	Amerada
Normal Production Rate	Bbl/Day
Gas-Oil Ratio	SCF/Bbl
Separator Pressure and Temperature	PSIG, °F.
Base Pressure	PSIA
Well Making Water	% Cut

SAMPLING CONDITIONS

Sampled at	4683 Ft.
Status of Well	Shut in
Gas-Oil Ratio	SCF/Bbl
Separator Pressure and Temperature	PSIG, °F.
Tubing Pressure	535 PSIG
Casing Pressure	Nil PSIG
Sampled by	Tefteller, Inc.
Type Sampler	

REMARKS:

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

File RFL 79352

Company K.R.M. Petroleum Corp. Formation Lansing Kansas City

Well G.C. Lemon No. 6 County Comanche

Field Lemon Ranch Pool State Kansas

HYDROCARBON ANALYSIS OF Reservoir Fluid SAMPLE

COMPONENT	MOL PER CENT	WEIGHT PER CENT	DENSITY @ 60° F. GRAMS PER CUBIC CENTIMETER	° API @ 60° F.	MOLECULAR WEIGHT
Hydrogen Sulfide	Nil	Nil			
Carbon Dioxide	1.01	0.50			
Nitrogen	1.29	0.41			
Methane	29.53	5.35			
Ethane	6.07	2.06			
Propane	10.30	5.13			
iso-Butane	2.26	1.48			
n-Butane	6.57	4.31			
iso-Pentane	2.38	1.94			
n-Pentane	2.05	1.67			
Hexanes	4.16	4.03			
Heptanes plus	34.38	73.12	0.8326	38.3	188
	100.00	100.00			

VOLUMETRIC DATA OF Reservoir Fluid SAMPLE

1. Saturation pressure (bubble-point pressure) 1695 PSIG @ 125 °F.
2. Specific volume at saturation pressure: ft³/lb 0.02348 @ 125 °F.
3. Thermal expansion of saturated oil @ 5000 PSI = $\frac{V \text{ @ } 125 \text{ °F}}{V \text{ @ } 70 \text{ °F}}$ = 1.03347
4. Compressibility of saturated oil @ reservoir temperature: Vol/Vol/PSI:

   From 5000 PSI to 3500 PSI = 9.61×10^{-6}
   From 3500 PSI to 2500 PSI = 11.43×10^{-6}
   From 2500 PSI to 1695 PSI = 13.91×10^{-6}

Pressure-Volume Relations at 125 °F.

Pressure PSIG	Relative Volume (1)	Y Function (2)
5000	0.9634	
4500	0.9678	
4000	0.9725	
3500	0.9775	
3000	0.9829	
2500	0.9888	
2000	0.9955	
1900	0.9969	
1800	0.9984	
1700	0.9999	
1695	1.0000	
1685	1.0033	
1675	1.0054	
1652	1.0104	
1590	1.0273	
1525	1.0474	2.329
1438	1.0781	2.260
1339	1.1192	2.207
1219	1.1808	2.134
1095	1.2631	2.055
959	1.3866	1.955
828	1.5515	1.867
690	1.8093	1.761
550	2.2210	1.660
427	2.8406	1.559
311	3.8688	1.480

(1) Relative Volume: V/Vsat is barrels at indicated pressure per barrel at saturation pressure.

(2) Y Function = $\frac{(Psat-P)}{(Pabs)\,(V/Vsat-1)}$

Differential Vaporization at 125 °F.

Pressure PSIG	Solution Gas/Oil Ratio(1)	Relative Oil Volume(2)	Relative Total Volume(3)	Oil Density gm/cc	Deviation Factor Z	Gas Formation Volume Factor(4)	Incremental Gas Gravity
1695	845	1.490	1.490	0.6823			
1400	733	1.442	1.634	0.6921	0.833	0.00970	0.751
1200	663	1.412	1.781	0.6989	0.844	0.01145	0.745
900	555	1.365	2.170	0.7100	0.868	0.01563	0.746
600	446	1.317	3.024	0.7224	0.898	0.02407	0.773
300	331	1.264	5.738	0.7359	0.935	0.04892	0.841
150	259	1.227	11.216	0.7454	0.959	0.09579	0.996
0	0	1.033		0.7829			1.874
	at 60°F. =	1.000					

Gravity of residual oil = 43.2°API at 60°F.

(1) Cubic feet of gas at 14.65 psia and 60°F. per barrel of residual oil at 60°F.
(2) Barrels of oil at indicated pressure and temperature per barrel of residual oil at 60°F.
(3) Barrels of oil plus liberated gas at indicated pressure and temperature per barrel of residual oil at 60°F.
(4) Cubic feet of gas at indicated pressure and temperature per cubic foot at 14.65 psia and 60°F.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS 75207

File RFL 79352

Well G.C. Lemon No. 6

Viscosity Data at 125 °F.

Pressure PSIG	Oil Viscosity Centipoise	Calculated Gas Viscosity Centipoise	Oil/Gas Viscosity Ratio
5000	0.464		
4000	0.441		
3000	0.418		
2000	0.395		
1750	0.389		
1695	0.388		
1400	0.416	0.0149	27.9
1200	0.438	0.0142	30.8
900	0.475	0.0132	36.0
600	0.525	0.0123	42.7
300	0.600	0.0114	52.6
150	0.666	0.0106	62.8
0	1.390	0.0079	175.9

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

File RFL 79352

Well G.C. Lemon No. 6

SEPARATOR TESTS OF Reservoir Fluid SAMPLE

SEPARATOR PRESSURE, PSI GAUGE	SEPARATOR TEMPERATURE, ° F.	GAS/OIL RATIO (1)	GAS/OIL RATIO (2)	STOCK TANK GRAVITY, ° API @ 60° F.	FORMATION VOLUME FACTOR (3)	SEPARATOR VOLUME FACTOR (4)	SPECIFIC GRAVITY OF FLASHED GAS
15	70	787	801			1.018	0.988*
to							
0	70	21	21	43.8	1.443	1.005	1.342
40	70	677	705			1.041	0.916*
to							
0	70	58	58	45.2	1.405	1.005	1.471
60	70	624	660			1.058	0.875*
to							
0	70	86	86	45.6	1.394	1.005	1.491
100	70	560	608			1.086	0.824*
to							
0	70	130	131	45.8	1.390	1.005	1.483

*Collected and analyzed for hydrocarbons, in the laboratory.

(1) Gas/Oil Ratio in cubic feet of gas @ 60° F. and 14.65 PSI absolute per barrel of oil @ indicated pressure and temperature.

(2) Gas/Oil Ratio in cubic feet of gas @ 60° F. and 14.65 PSI absolute per barrel of stock tank oil @ 60° F.

(3) Formation Volume Factor is barrels of saturated oil @ 1695 PSI gauge and 125 ° F. per barrel of stock tank oil @ 60° F.

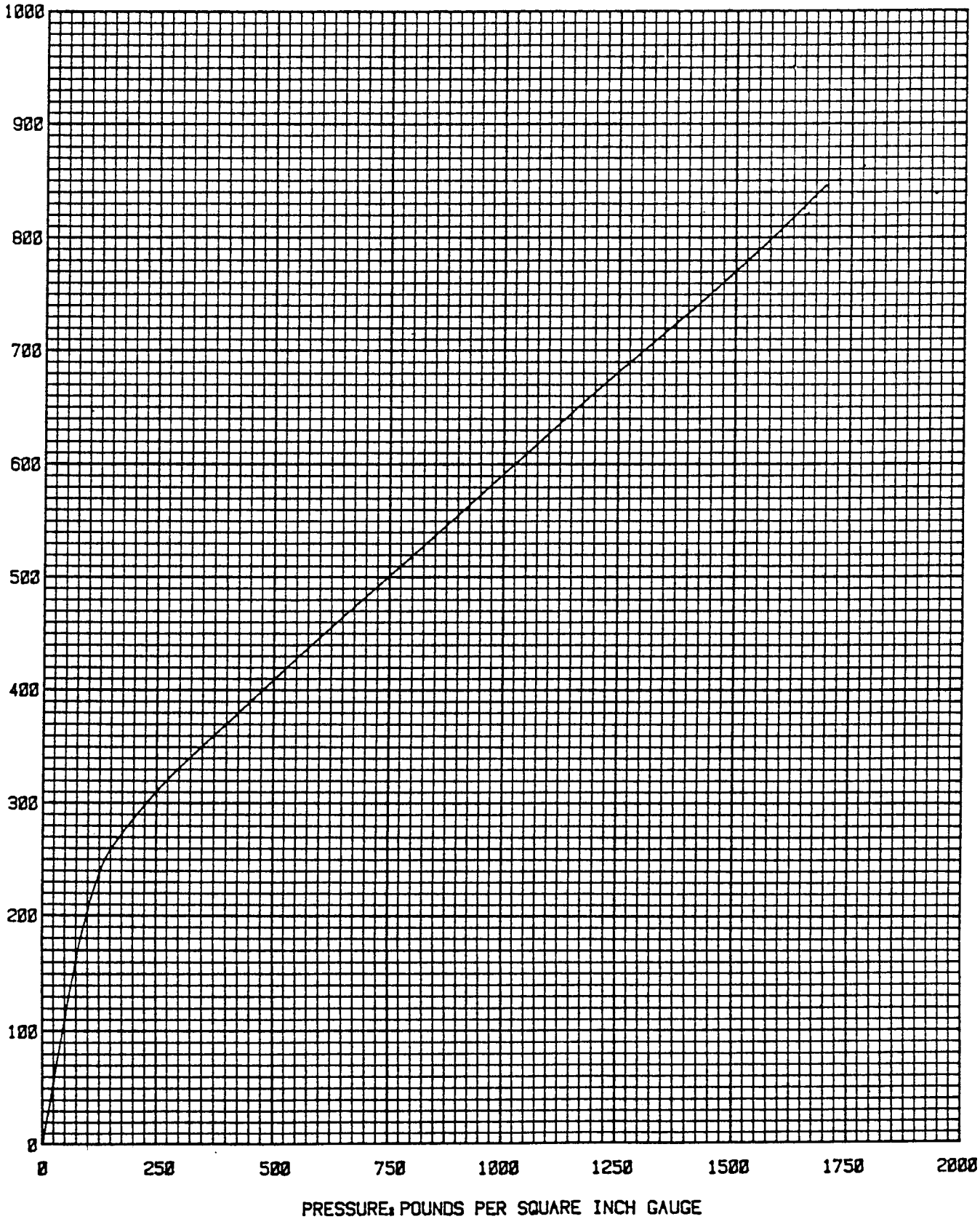
(4) Separator Volume Factor is barrels of oil @ indicated pressure and temperature per barrel of stock tank oil @ 60° F.

Hydrocarbon Analyses of Separator Gas Samples

Separator Conditions:	15 PSIG and 70 °F.		40 PSIG and 70 °F.		60 PSIG and 70 °F.		100 PSIG and 70 °F.	
Component	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM	Mol Percent	GPM
Hydrogen Sulfide	Nil		Nil		Nil		Nil	
Carbon Dioxide	1.92		2.05		2.12		2.18	
Nitrogen	2.57		2.84		3.01		3.27	
Methane	56.47		61.12		63.83		67.95	
Ethane	10.81	2.874	11.15	2.965	11.13	2.960	10.73	2.853
Propane	16.27	4.451	14.64	4.006	13.31	3.642	11.07	3.029
iso-Butane	2.26	0.735	1.73	0.563	1.44	0.468	1.08	0.351
n-Butane	6.47	2.028	4.58	1.435	3.71	1.163	2.71	0.849
iso-Pentane	1.23	0.448	0.75	0.273	0.58	0.211	0.40	0.146
n-Pentane	1.16	0.418	0.68	0.245	0.52	0.187	0.36	0.130
Hexanes	0.52	0.211	0.29	0.118	0.22	0.089	0.16	0.065
Heptanes plus	0.32	0.144	0.17	0.077	0.13	0.059	0.09	0.041
	100.00	11.309	100.00	9.682	100.00	8.779	100.00	7.464
Calculated gas gravity(Air=1.000):	0.988		0.916		0.875		0.824	
Calculated gross heating value (BTU per cubic foot of dry gas at 14.65 psia and 60°F.):	1589		1465		1402		1317	

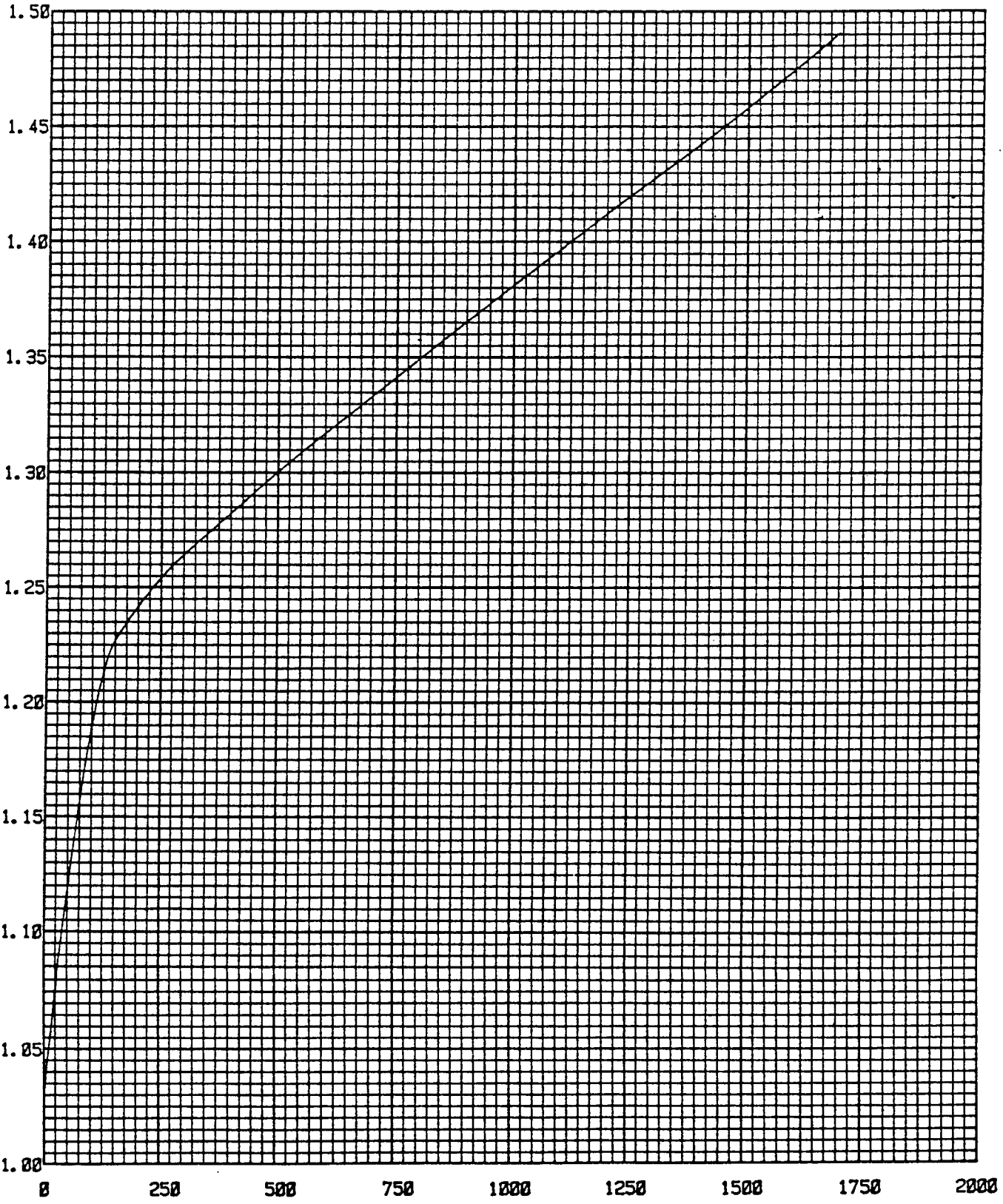
DIFFERENTIAL VAPORIZATION OF RESERVOIR FLUID AT 125 °F.

Company K. R. M. PETROLEUM CORP. Formation LANSING KANSAS CITY
Well G. C. LEMON NO. 6 County COMANCHE
Field LEMON RANCH POOL State KANSAS



DIFFERENTIAL VAPORIZATION OF RESERVOIR FLUID AT 125 °F.

Company K.R.M. PETROLEUM CORP. Formation LANSING KANSAS CITY
Well G.C. LEMON NO. 6 County COMANCHE
Field LEMON RANCH POOL State KANSAS



VISCOSITY OF RESERVOIR FLUID AT 125 °F.

Company K. R. M. PETROLEUM CORP. Formation LANSING KANSAS CITY
Well G. C. LEMON NO. 6 County COMANCHE
Field LEMON RANCH POOL State KANSAS