

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 1/30/84	
Company Energy Reserves Group, Inc.				Connection To-Air		
Pool				Formation		Unit
Completion Date 1-27-84		Total Depth 7740'		Plug Back TD 7689'		Elevation 4372.7 GL.
Farm or Lease Name Lambrith						Well No. 1
Csg. Size 4 1/2"	Wt. 10.6	d 4.892	Set At 7740'	Perforations: From 7568 To 7602		Unit Sec. Twp. Rge. 18 6S 34E
Thq. Size 2 3/8"	Wt. 4.7#	d 1.995	Set At 7567'	Perforations: From Vann To Gun		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple				Packer Set At 7526'		County Roosevelt
Producing Thru Tubing		Reservoir Temp. °F 150°		Mean Annual Temp. °F 60°		Baro. Press. - P _g 13.2
State New Mexico		Prover		Meter Run 4"		Taps Flange
L 7560'	H 7560'	G _g .676	% CO ₂ .087	% N ₂ 3.936	% H ₂ S	

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							1631	61	PKR	CHOKE	48 Hrs
1.	4	x	1.00	540	10	72°	1531	62		6/64	1 Hr.
2.	4	x	1.00	530	11	74	1402	62		8/64	1 Hr.
3.	4	x	1.00	530	47	70	1264	63		13/64	1 Hr.
4.	4	x	1.00	530	86	58	1025	63		15/64	1 Hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.753	74.38	553.2	.9887	1.216	1.054	448
2	4.753	79.30	543.2	.9868	1.216	1.051	463
3	4.753	159.78	543.2	.9905	1.216	1.052	962
4	4.753	216.14	543.2	1.002	1.216	1.056	1322
5.							

NO.	P _t	Temp. °F	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.84	532	1.43	.901	33.281 Mcf/bbl.		.676	XXXXXXX	662 P.S.I.A.	371 °F
2.	.82	534	1.44	.906			XXXXXX			
3.	.82	530	1.43	.904						
4.	.82	518	1.40	.897						
5										

P _t 1778.3	P _c ² 3162.4	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.819$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.497$
NO.	P _t ²	P _w	P _w ²
1	* 1739.3	3025.2	137.2
2	* 1674.2	2802.9	359.5
3	* 1454.4	2115.3	1047.1
4	* 1193.2	1423.7	1738.7
5			

Absolute Open Flow 1,980 Mcfd @ 15.025 Angle of Slope 56° Slope, n 675
 Remarks: 4 Bbls./Condensate made during test. B.H.P. measured with * calculated from known B.H.P.

Approved By Commission:	Conducted By: R.B.	Calculated By: R.R.	Checked By: R.R.
-------------------------	--------------------	---------------------	------------------

ENERGY RESERVES GROUP, INC.

LAMBRITH NO. 1

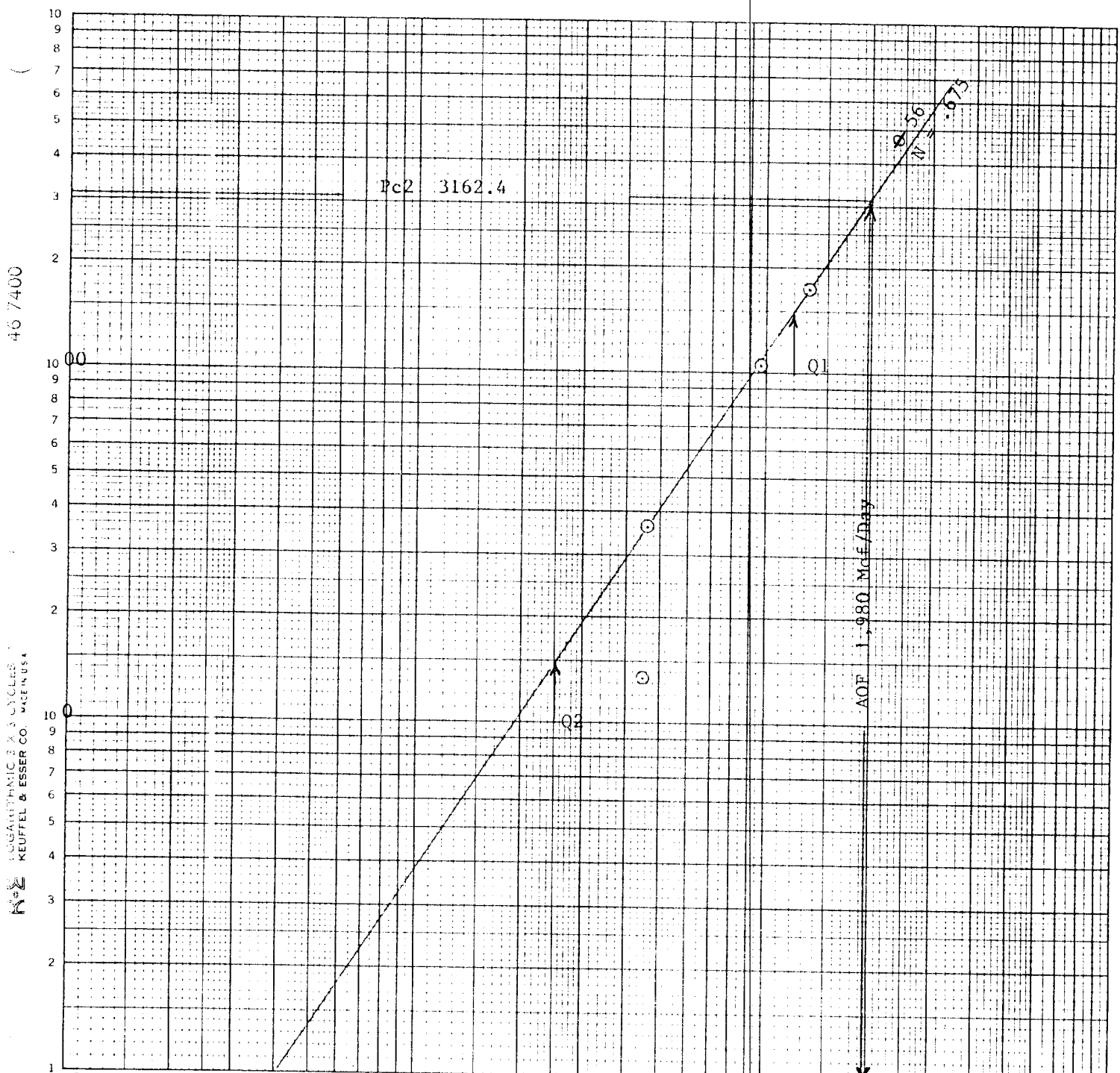
JANUARY 30, 1984

$$\text{CAOF} = 1322 \frac{(3162.4)}{1738.7} \cdot 675 = 1980 \text{ Mcf/Day}$$

$$Q1 = 1200 = \text{Log } 3.07918$$

$$Q2 = 254 = \text{Log } 2.40418$$

$$N = .67500$$



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (P_b)

COMPANY Energy Resources Corp. - Lambirth WELL NO. 65 DATE 1-31-84

LOCATION: Unit D Section 18 Township 65 Range 34E

L 7560 H 7560 L/H 1.00 G .676 %CO₂ .087 %N₂ 3.936 %H₂S

GH .5111 P_{CT} 662 T_{CT} 371

RATES #1 #2 #3 #4

LINE	1	2	3	4	5	6	7	8
1	$T_w(W.H. \circ R)$	534	534	534	534	534	534	534
2	$T_s(B.H. \circ R)$	610	610	610	610	610	610	610
3	$T = \frac{T_w + T_s}{2}$	572	572	572	572	572	572	572
4	Z (Est.)	.773	.778	.774	.782	.787	.810	.824
5	TZ	442.2	445.0	442.7	447.3	450.1	463.2	471.3
6	GH/TZ	11.56	11.48	11.54	11.43	11.35	11.03	10.84
7	e^s (Table XIV)	1.54	1.54	1.54	1.53	1.53	1.51	1.50
8	P_c or P_s	2157.2	2157.2	2074.2	2074.2	1794.2	1462.2	1462.2
9	P_c^2 or P_s^2	4653.5	4653.5	4302.3	4302.3	3219.2	2138.0	2138.0
10	$P_c^2 = P_w^2/es$ or $P_w^2 = P_s^2/es$	3016.7	3025.1	2790.5	2802.9	2102.9	1413.7	1423.7
11	P_c or P_w	1736.9	1739.3	1670.5	1674.2	1450.2	1189.0	1189.0
12	$P_i = \frac{P_w + P_s}{2}$ or $\frac{P_c + P_i}{2}$	1947.0	1948.2	1872.3	1874.2	1622.2	1325.6	1327.7
13	$P_i = (P/P_{ct})$	2.94	2.94	2.83	2.83	2.45	2.00	2.00
14	$T_i = (T/T_{ct})$	1.54	1.54	1.54	1.54	1.54	1.54	1.54
15	Z (Table XI)	.778	.778	.782	.782	.798	.824	.824

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_{wh})

Form C-122F
Adopted 9-1-65

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_{st})

COMPANY Lambert Petroleum Corp. LEASE Lambert

LOCATION: Unit D Section 18 Township 6S Range 34F DATE 1-31-84
L 7560 H 7560 LH 1.00 G 676 % CO₂ .087 % N₂ 3.936 % H₂S

GH 5111 P_{cr} 662 T_{cr} 371

TABLE IX & X
Sheet-1A

LINE		1	2	3	4	5	6	7	8
1	T _w (W.H. °R)	534	534						
2	T _s (B.H. °R)	610	610						
3	T = $\frac{T_w + T_s}{2}$	572	572						
4	Z (Est.)	.772	.777						
5	TZ	441.6	444.4						
6	GH/TZ	11.57	11.50						
7	es (Table XIV)	1.54	1.54						
8	P _f or <u>P_g</u>	2206.2	2206.2						
9	P _f ² or <u>P_g²</u>	4867.3	4867.3						
10	P _c ² = P _f ² /es or P _w ² = P _s ² /es	3153.5	3162.3						
11	P _c or <u>P_w</u>	1775.8	1778.3						
12	P _c = $\frac{P_{w2} + P_{s2}}{2}$ or $\frac{P_c + P_f}{2}$	1991.0	1992.2						
13	P _r = (P/P _{cr})	3.01	3.01						
14	T _r = (T/T _{cr})	1.54	1.54						
15	Z (Table XI)	.777	.777						

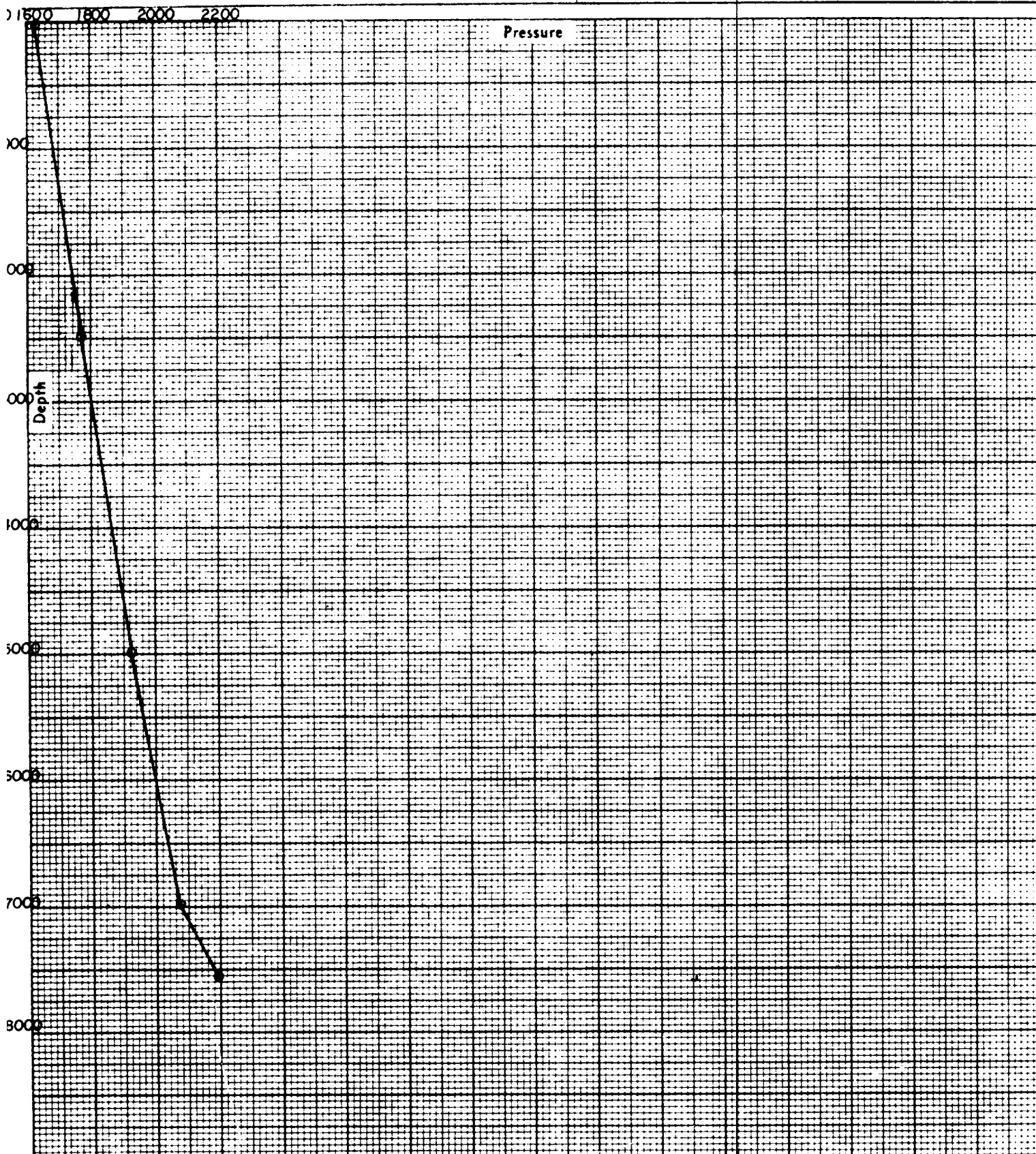
JOHN W. WEST ENGINEERING COMPANY
412 NORTH DAL PASO, HOBBS, NEW MEXICO

TELEPHONES 393-3942
393-3117

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR ENERGY RESERVES GROUP, INC.
LEASE LAMBRITH
WELL NO. 1
FIELD _____
DATE 1-30-84 TIME 9:30 A.M.
STATUS Shut-In TEST DEPTH 7560'
TIME S.I. _____ LAST TEST DATE _____
CAS. PRES. _____ BHP LAST TEST _____
TUB. PRES. 1624psi BHP CHANGE _____
ELEV. _____ FLUID TOP _____
DATUM _____ WATER TOP _____
TEMP _____ RUN BY R.B.
CLOCK NO. 13032 GAUGE NO. 19389
ELEMENT NO. 56353 (0-4600 psi)

DEPTH	PRESSURE	GRADIENT
000	1624	
2500	1776	.061
5000	1925	.060
7000	2071	.073
7560	2193	.218



RECEIVED
MAR 23 1984
O.C.D.
HOBBS OFFICE

TEST DATE: JANUARY 30, 1984

TEST DEPTH: 7560 FEET

ELEMENT NO: 56353

RANGE: 0-4600 psi

CLOCK NO: 13032

RANGE: 0-12 Hours

TEST CONDUCTED BY:
JOHN WEST ENGINEERING CO.

DATE

1-30-84

TIME

10:00 A.M.
10:15 A.M.
10:30 A.M.
10:45 A.M.
11:00 A.M.
11:15 A.M.
11:30 A.M.
11:45 A.M.
12:00 Noon
12:15 P.M.
12:30 P.M.
12:45 P.M.
1:00 P.M.
1:15 P.M.
1:30 P.M.
1:45 P.M.
2:00 P.M.

CUM HRS: /MIN.

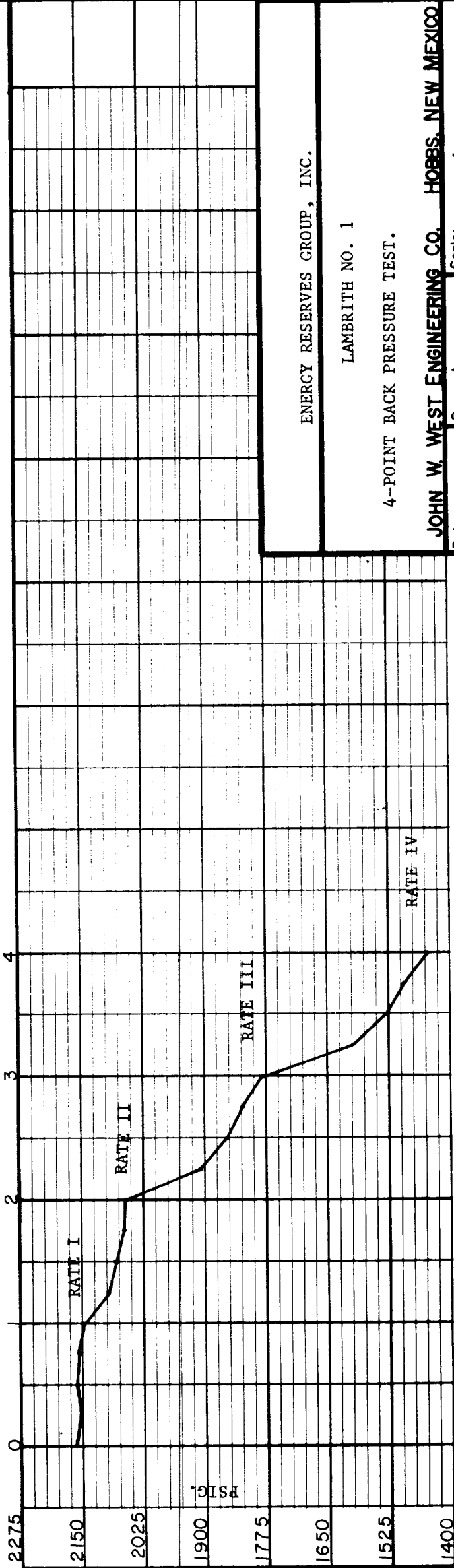
00 Hrs. 00 Min.
00 15
00 30
00 45
01 00
01 15
01 30
01 45
02 00
02 15
02 30
02 45
03 00
03 15
03 30
03 45
04 00

PSIG @ 7560 FEET

2172 Begin 4-Point test.
2155 6/64 Choke
2160
2155
2144 End Rate I
2099 8/64 Choke
2082
2068
2061 End Rate II
1906 13/64 Choke
1852
1824
1781 End Rate III
1595 15/64 Choke
1527
1494
1449 End Rate IV

1-30-84

TIME IN HOURS



ENERGY RESERVES GROUP, INC.

LAMBRITH NO. 1

4-POINT BACK PRESSURE TEST.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 1-31-84 Drawn by: bsm Scale: as shown

NEW-TEX LAB

PHONE 505 393-3561

P. O. BOX 1161

611 W. SNYDER

HOBBS, NEW MEXICO 88240

ANALYSIS CERTIFICATE

CLIENT: JOHN WEST ENGINEERING
ADDRESS: 412 N DAL PASO
CITY, STATE: HOBBS NM 88240

ANALYSIS NUMBER: 2428
DATE OF RUN: 1 31 84
DATE SECURED: 1 30 84

SAMPLE IDENT: ENERGY RESERVE GROUP - LANBRITH WELL #1
SAMPLING PRESS: SAMPLING TEMP:

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/ MCF
NITROGEN	3.936	
CARBON DIOXIDE	0.087	
METHANE	82.356	
ETHANE	7.899	2.107
PROPANE	3.858	1.059
ISO-BUTANE	0.410	0.134
NORMAL BUTANE	1.035	0.325
ISO-PENTANE	0.256	0.094
NORMAL PENTANE	0.135	0.049
HEXANES	0.024	0.010
HEPTANES PLUS	0.000	0.000
TOTAL	100.000	3.778

PROPANE GPM: 1.06 BUTANES GPM: 0.46
ETHANE GPM: 2.11 PENTANES PLUS GPM: 0.15

SPECIFIC GRAV (CALC): 0.6759
MOLE WEIGHT: 19.57

HHV-BTU/CU FT	PRESSURE (PSIA)	WET	DRY
14.696	1113	1133	
14.657	1100	1129	
14.730	1115	1135	
14.735	1116	1136	

DEANE SIMPSON

Deane Simpson