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Form C-122
Revised 9-1-65

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

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Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8-21-79		SEP 17 1979	
Company Wm. N. Beach ✓				Connection none				O. C. C.	
Pool East Red Lake Q. S.				Formation Penrose				ARTESIA, OFFICE	
Completion Date 8-9-79		Total Length 1881/885		Plug Back TD 1865		Elevation 3713 KB		Name or Lease Name State 36 S	
Csg. Size 4 1/2	Wt. 10.50#	d 3.977	Set At 1880	Perforations: From 1802 To 1856		Well No. 2			
Tub. Size 2-3/8	Wt. 4.7	d 1.995	Set At 1809	Perforations: From To		Unit Sec. Twp. Rge. B 36 16-S 28-E			
Type Well - Single - Bronthead - G.G. or G.O. Multiple Single-Gas						Packer Set At 1777		County EDDY	
Producing thru Tubing		Reservoir Temp. °F 98 @ 1829		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L 1829	H 1829	Gg 0.804	% CO ₂ 0.24	% N ₂ 44.5	% H ₂ S 0	Prover	Meter Run X	F	

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
51	2.067	X	1.00	100	24	73	505	76	PACKER	--	24 hrs.
1.	2.067	X	1.00	100	46	76	463	73	PACKER	--	1 hr.
2.	2.067	X	1.00	100	68	76	400	73	PACKER	--	1 hr.
3.	2.067	X	1.00	100	89	74	324	73	PACKER	--	1 hr.
4.	2.067	X	1.00	100							
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft	Gravity Factor Fg	Super. Compens. Factor Fpv	Rate of Flow Q, Mgd
1	4.946	52.12	113.2	0.9877	1.115	1.005	285.3
2	4.946	72.16	113.2	0.9850	1.115	1.005	393.9
3	4.946	87.74	113.2	0.9850	1.115	1.005	479.0
4	4.946	100.37	113.2	0.9868	1.115	1.005	548.9
5.							

NO.	P _r	Temp. °R	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	0.21	536	1.75	0.990	NONE PRODUCED	--	0.804	XXXXXX	595	305
2.	0.21	533	1.76	0.990						
3.	0.21	533	1.76	0.990						
4.	0.21	533	1.75	0.990						
5.										

NO.	P _r	P _w	P _w ²	P _r ² - P _w ²
1	268.5	518.8	269.2	169.3
2	226.8	477.7	228.2	210.3
3	170.7	413.2	172.8	265.7
4	113.7	341.3	116.5	322.0
5				

(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 1.362$

ACT = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 734.2$

(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.338$

Absolute Open Flow	734.2	Mgd @ 15.625	Angle of Slope	47°	Slope, nQ	942
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Approved By Commission:	Conducted By: D. F. JONES	Calculated By: D. F. JONES	Checked By:
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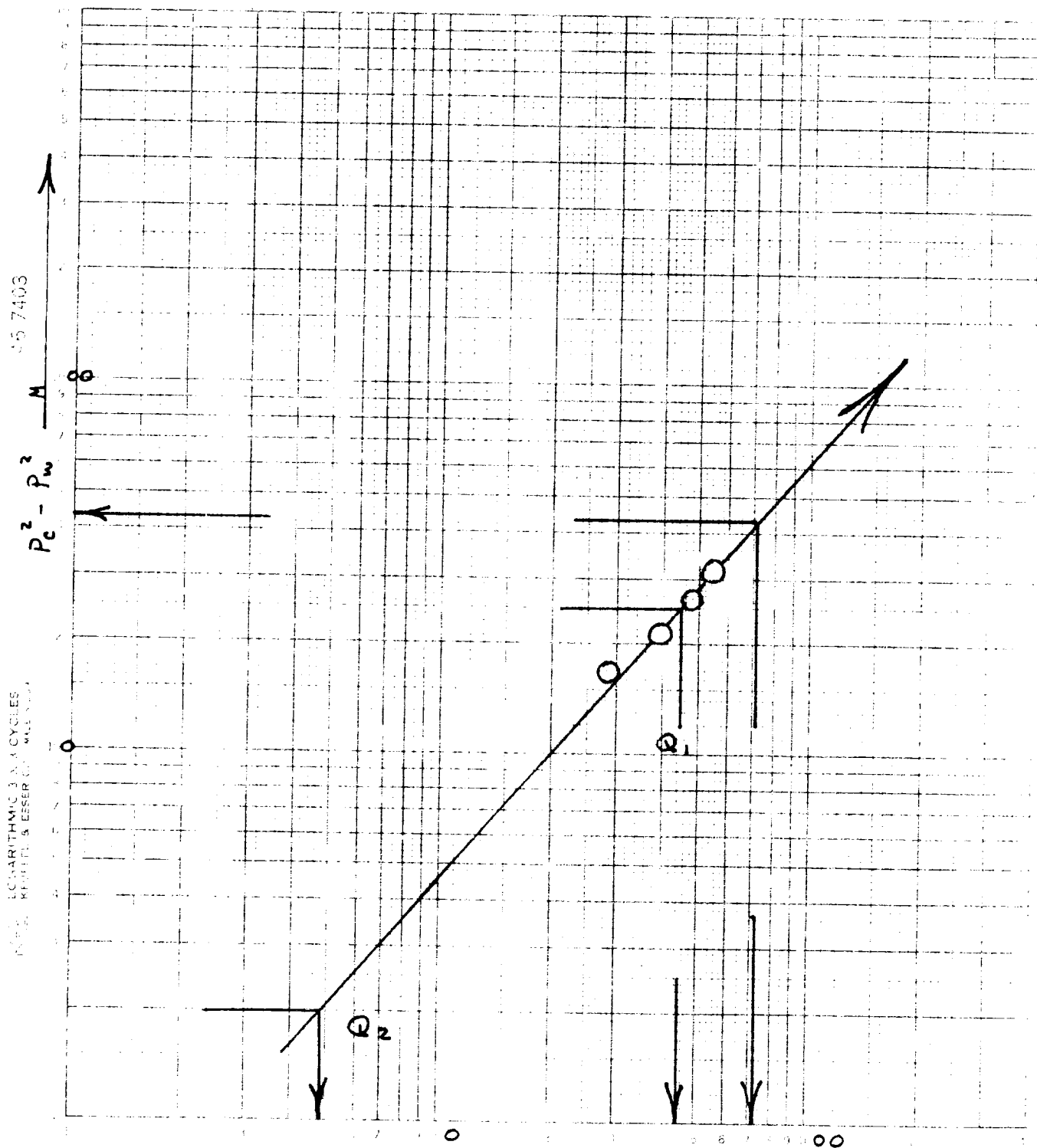
O. C. C.
ARTESIA, OFFICE

WILLIAM N. BEACH

STATE #2

E. RED LAKE, EDDY COUNTY

8-21-79



$$Q_1 = 420 \text{ MCF/DAY} \quad \text{Log} = 2.62325$$

$$Q_2 = 48 \text{ MCF/DAY} \quad \text{Log} = 1.68124$$

$$n = 0.942$$

$$n = 47^\circ$$

$$CAOF = 734.2 \text{ MCF/DAY}$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Wm. N. Beaulieu LEASE N. Mex. St. 36 WELL NO. 2 DATE 8-21-79

LOCATION: Unit B Section 36 Township 16-S Range 28-E

L 1829 H 1829 L/H 1.00 G 0.806 % CO₂ 0.24 % N₂ 44.5 % H₂S 0

d 1.995 F_r 0.018231 GH 1470 P_{cr} 595 T_{cr} 305

LINE	Rate #1	Rate #2	Rate #3	Rate #4	Rate #5
1 Q _m	0.285	0.396	0.479	0.549	0.549
2 T _w (W.H. °R)	536	533	533	533	533
3 T _s (B.H. °R)	558	558	558	558	558
4 T = $(\frac{T_w + T_s}{2})$	547	546	546	546	546
5 Z (Est.)	0.960	0.958	0.963	0.970	0.972
6 TZ	525	524	526	530	531
7 GH/TZ	2.800	2.805	2.795	2.772	2.768
8 e ^s (Table XIV)	1.111	1.111	1.110	1.110	1.109
9 1-e ^s (Table XIV)	0.100	0.100	0.099	0.099	0.098
10 P _t	518.2	518.2	413.2	337.2	337.2
11 P _t ² /1000	268.5	268.5	170.7	113.7	113.7
12 F _r (Table XV)	0.018231	0.018231	0.018231	0.018231	0.018231
13 F _c = F _r TZ	9.571	9.553	9.590	9.626	9.681
14 F _c Q _m	2.728	2.723	4.593	4.611	5.314
15 L/H (F _c Q _m) ²	7.441	7.413	21.089	28.000	28.236
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	0.744	0.741	2.089	2.772	2.767
17 P _w ² = P _t ² + F _w	240.0	269.2	172.8	172.8	116.5
18 P _w ² = e ^s P _w ²	300.0	299.1	191.8	129.3	129.2
19 P _s	547.7	546.9	437.9	359.6	359.4
20 P = $(\frac{P_t + P_s}{2})$	532.9	532.6	425.6	348.7	348.3
21 P _r = (P/P _{cr})	0.896	0.895	0.715	0.586	0.586
22 T _r = (T/T _{cr})	1.793	1.790	1.790	1.790	1.790
23 Z (Table XI)	0.958	0.961	0.967	0.972	0.972

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O.C.C.
ARTIFICIAL OFFICE

SOUTHWESTERN LABORATORIES

1703 West Industrial — P. O. Box 2150

MIDLAND, TEXAS 79701

(915) 683-3348

SEP 17 1979

D. G. S.
ARTERIA, OFFICE

FRACTIONAL ANALYSIS REPORT

DATE RECEIVED 8-27-79

SAMPLE MARKED New Mexico State 36 No. 2

FILE NO. C-1902-G

Sep. Dry Gas 100 psi @ 70° F.

LAB. NO. 43340

SAMPLE FROM Wm. N. Beach

DATE SECURED 8-21-79

DATE OF RUN 8-28-79

SECURED BY D. F. Jones

COMPONENT	MOL. %	G. P. M.	LIQUID VOL. %
Oxygen			
Nitrogen	44.50		
Carbon Dioxide	0.24		
Methane	46.64		
Ethane	5.39	1.437	
Propane	2.19	0.601	
i-Butane	0.25	0.082	
n-Butane	0.51	0.160	
i-Pentane	0.11	0.040	
n-Pentane	0.11	0.040	
Hexanes	0.03	0.012	
Heptanes & Heavier	0.03	0.014	
Hydrogen Sulfide	*None Det.		
Helium			
Hydrogen			
Carbon Monoxide			
TOTALS	100.00	2.386	

CONDENSATE VALUES, G.P.M.

Propane

Butane

Gasoline

HEATING VALUE, B.T.U. Per Cu. Ft.*

Calculated from % Composition

Calculated water saturated

SULPHUR CONTENT, Grains Per 100 Cu. Ft.*

Hydrogen Sulfide

Mercaptans

SPECIFIC GRAVITY*

Calculated from % Composition

*14,696 lbs./sq. in., 60° F

REMARKS

*Determined on laboratory sample.

Propane + GPM — 0.949

COPIES:

3cc Wm. N. Beach

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AUG 29 1979

SOUTHWESTERN LABORATORIES

Jack H. Barton