

RECEIVED

C/SF

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 4-21-81		MAY 19 1981	
Company H.W. PACE		Connection AIR NEW WELL		O. C. D. ARTESIA, OFFICE	
Pool WILDCAT		Formation ABO		Unit #1	
Completion Date 4-21-81		Total Depth 4,985		Plug Back TD 4,526	
		Elevation 3-850 KB		Farm or Lease Name DEB STATE	
Cq. Size 5.500		Wt. 14.00		Set At 4,526	
Perforations: From 4,365 To 4,515		Well No. #1			
Tq. Size 2.375		Wt. 4.70		Set At 4,340	
Perforations: From OPEN To ENDED		Unit 1		Sec. 16	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE		Packer Set At NONE		Twp. 8S	
Producing Thru TUBING		Reservoir Temp. °F 104° 4,425		Mean Annual Temp. °F 60	
		Baro. Press. - P _g 13.2		State NEW MEXICO	
L 4440		H 4440		Gg .831	
% CO ₂ 6.93		% N ₂ 13.06		% H ₂ S 0	
Prover 4"		Meter Run 4"		Taps FLANGE	

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							884	60	1001		265 HOURS
1.	4" X 1"			350	3	68	805	60	927		1 HOUR
2.	4" X 1"			320	7	78	710	66	823		1 HOUR
3.	4" X 1"			295	12	82	573	65	675		1 HOUR
4.	4" X 1"			225	17	80	433	63	496		1 HOUR
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.8740	33.01	363.2	.9924	1.0970	1.0398	182
2	4.8740	48.29	333.2	.9831	1.0970	1.0336	262
3	4.8740	60.81	308.2	.9795	1.0970	1.0303	328
4	4.8740	63.63	238.2	.9813	1.0979	1.0228	341
5							

NO.	P _h	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	.54	528	1.37	.925	A.P.L. Gravity of Liquid Hydrocarbons _____ Deg.
2	.50	538	1.40	.936	Specific Gravity Separator Gas _____ X X X X X X X X
3	.46	542	1.41	.942	Specific Gravity Flowing Fluid _____ X X X X X
4	.32	540	1.41	.950	Critical Pressure 672 P.S.I.A.
5					Critical Temperature 304 °R

P _c 1014.2 P _c ² 1028.6		(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.8533$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3614$	
NO.	P _i ²	P _w ²	P _w ²	P _c ² - P _w ²	
1		940.2	884.0	145	
2		836.2	699.2	329	
3		688.2	473.6	555	
4		509.2	259.3	769	
5					

Absolute Open Flow 446.5 Mcfd @ 15.025		Angle of Slope 63.4		Slope, n .5000	
Remarks: BOTTOM HOLE PRESSURES MEASURED WITH TANDUM RUN AMERADA PRESSURE GUAGES.					
Approved By Division		Conducted By: DON BENNETT		Calculated By: WOHEFORD & JENKINS	
				Checked By:	

J. W. Price
 Des State Well No 1
 I - Sec 16, T_W 8S, R₃ 26E

$$\frac{\Delta P}{Q} \quad P_c^2 - P_w^2 = 2000$$

$$\frac{\Delta P}{Q} \quad P_c^2 - P_w^2 = 200$$

$$Q_1 = 633 \text{ mcf/d}$$

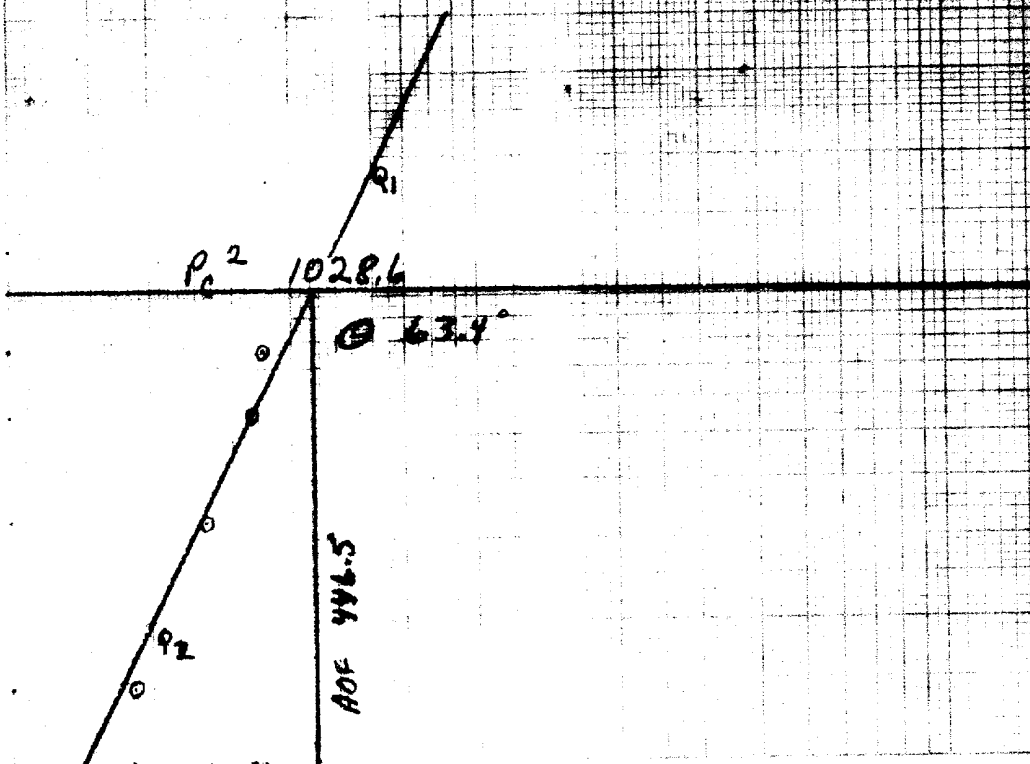
$$Q_2 = 200 \text{ mcf/d}$$

$$\log Q_1 = 2.801$$

$$\log Q_2 = 2.301$$

$$N = .500$$

$P_c^2 - P_w^2$



Q mcf/day

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY H.W. PACE WELL NAME DEB STATE WELL NO 1
DATE OF TEST 4-21-81 TO 4-23-81 LOCATION ABO PAGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3# 9891N, 0-3,650 LB. RANGE
TIME WELL SHUT IN 4-13-81 2350 HOURS
TIME CLOCK STARTED 1049
DEAD WEIGHT ELEMENT ON SURFACE 897 LBS.
TIME ELEMENT REACHED BOTTOM 1115
DEAD WEIGHT ELEMENT ON BOTTOM 899 LBS.
ELEMENT SET AT 4,425 FEET
* TANDUM BOMBS RUN RPG3# 37178, 0-3,800 LB. RANGE

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS P.S.I.A.
4-21-81	0	1115		998	13.2		1,011
	1	1215		999	13.2		1,012
	2	1315		1,000	13.2		1,013
	3	1415		1,000	13.2		1,013
START WARM UP	3 3/4	1500		1,001	13.2		1,014
START TEST	4	1515		1,000	13.2		1,013
	4 1/4	1530		981	13.2		994
	4 1/2	1545		960	13.2		973
	4 3/4	1600		945	13.2		958
END RATE1	5	1615		927	13.2		940
	5 1/4	1630		901	13.2		914
	5 1/2	1645		876	13.2		889
	5 3/4	1700		851	13.2		864
END RATE2	6	1715		823	13.2		836
	6 1/4	1730		801	13.2		814
	6 1/2	1745		752	13.2		765
	6 3/4	1800		708	13.2		721
END RATE3	7	1815		675	13.2		688
	7 1/4	1830		638	13.2		651
	7 1/2	1845		584	13.2		597
	7 3/4	1900		542	13.2		555
END RATE4	8	1915		496	13.2		509
START BUILD UP	8 1/4	1930		518	13.2		531
	8 1/2	1945		543	13.2		556
	8 3/4	2000		560	13.2		573
	9	2015		579	13.2		592
	9 1/4	2030		593	13.2		606
	9 1/2	2045		607	13.2		620
	9 3/4	2100		620	13.2		633
	10	2115		633	13.2		646
	10 1/2	2145		653	13.2		666
	11	2215		669	13.2		682
	11 1/2	2245		689	13.2		702
	12	2315		702	13.2		715
	12 1/2	2345		715	13.2		728
4-22-81	13	2415		726	13.2		739
	13 1/2	2445		739	13.2		752
	14	0115		748	13.2		761
	14 1/2	0145		755	13.2		768
	15	0215		767	13.2		780

SUBSURFACE PRESSURE MEASUREMENTS

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

[illegible]

TEST DATE: 4-21-81 TO 4-23-81
TEST DEPTH: 4,425

ELEMENT NO.: RPG3# 9891N & RPG# 37178
RANGE: 0-3,650 LB. & 0-3,800 LB

CLOCKS: 4075 & 11520
RANGE: 24 HOUR & 48 HOUR

OPERATOR: 80 FAULKENBERRY

Note: See Attached Sheet for Tabulation of Pressure
And Time.

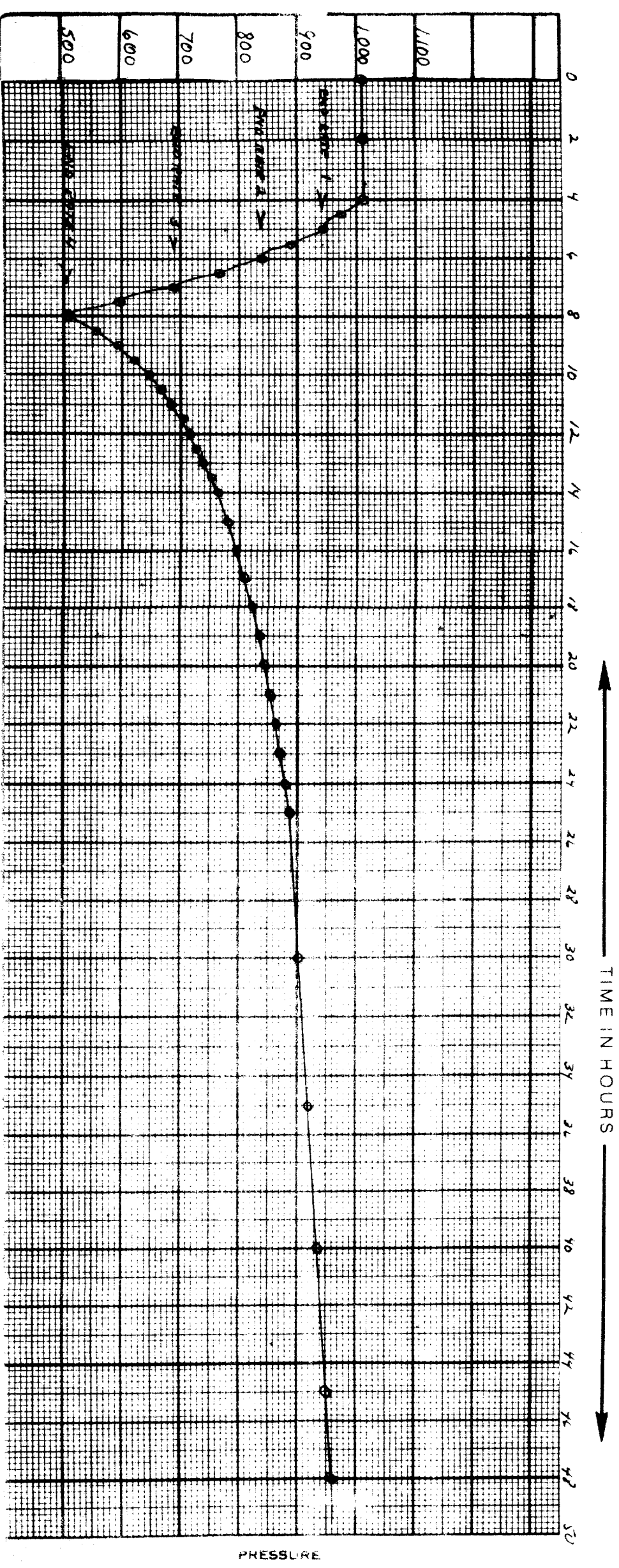
H.W. PAGE

DEB STATE WELL NO 1
CHAVES COUNTY
NEW MEXICO

BENNETT-CATHEY WIRE LINE SERVICE
Box 787
Artesia, N.M. 88210
505/746-3281

Drawn By *MB* Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES





BENNETT-CATHEY WIRE LINE SERVICE

P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone 746-3281



HARRY

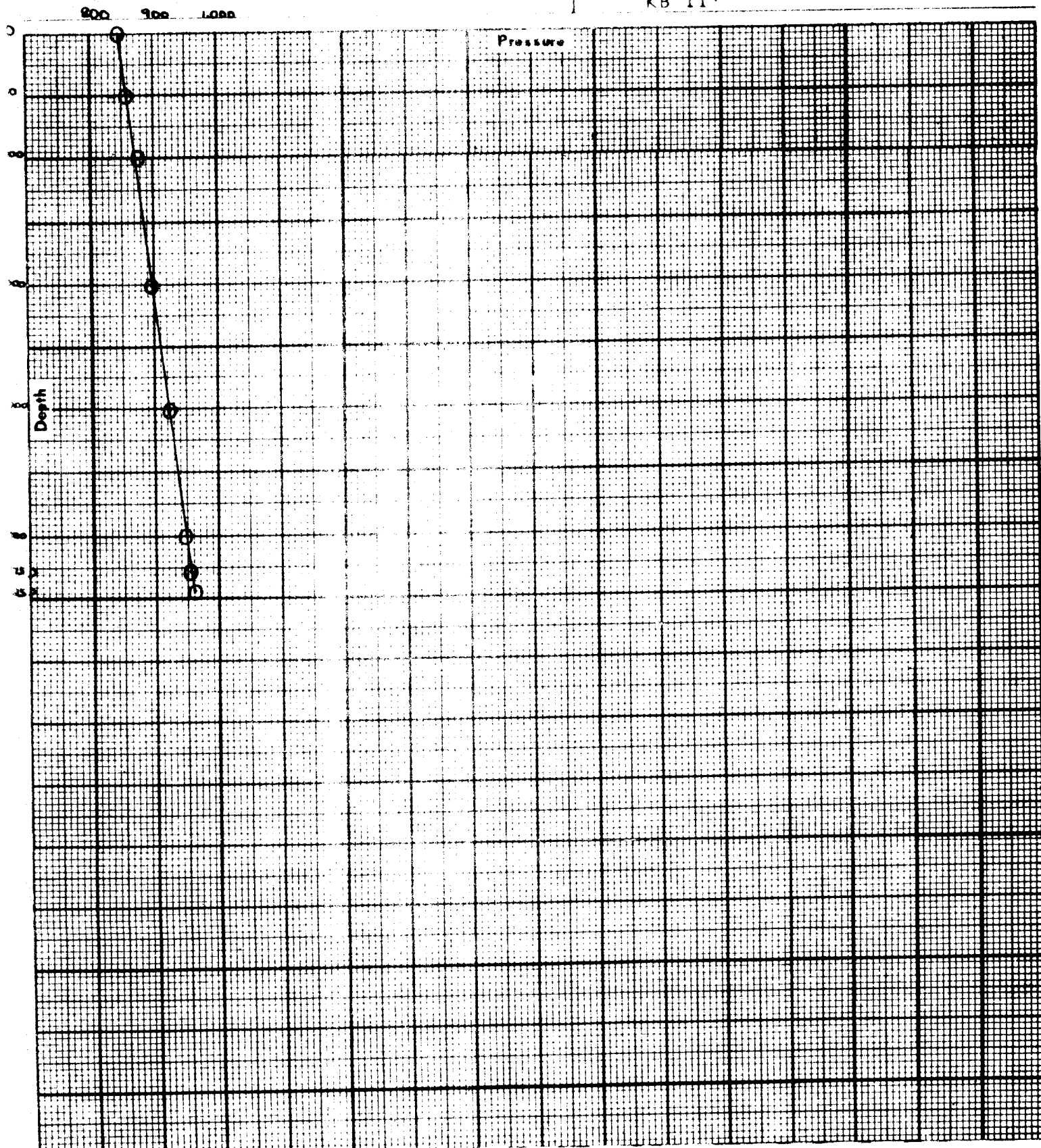
BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR H.W. PAUL
LEASE DEB STATE
WELL NO. #1
POOL FORMATION
DATE 4-23-81 TIME 1145
STATUS SHUT IN TEST DEPTH 4,425
TIME S.I. 1915 LAST TEST DATE 4-15-81
4-21-81 BHP LAST TEST 841
TUB. PRES. 848 BHP CHANGE +119
ELE. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 960.2 RUN BY BO FAULKENBERRY
TEMP 104 PRESSURE RANGE 0-3,550
CLOCK NO. RP036 0891N
ELEMENT NO.

DEPTH	PRESSURE	GRADIENT
0	848	
500	859	2.2
1,000	874	3.0
2,000	898	2.4
3,000	923	2.5
4,000	948	2.5
4,275	954	2.2
4,425	960	4.0

TIME BHP MEASURED 1145 HOURS
4-23-81

LENGTH OF TIME WELL SHUT IN 40
HOURS 30MINUTES
KB 11'



FROM THE DESK OF

Cheri Panner

Deb State

CARBON	6.928
Nitrogen	13.056
Methane	69.682
Ethane	3.473
Propane	1.232
Iso Butane	.222
N-Butane	.640
Iso Pentane	.322
N- Pentane	.595
Hexanes	1.416
Heptanes	2.434

.926

.338

.072

.204

.118

.213

.581

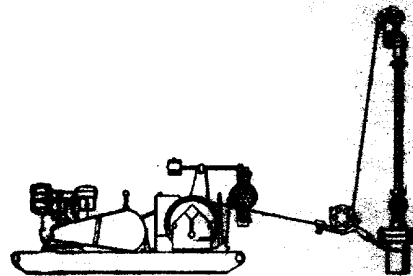
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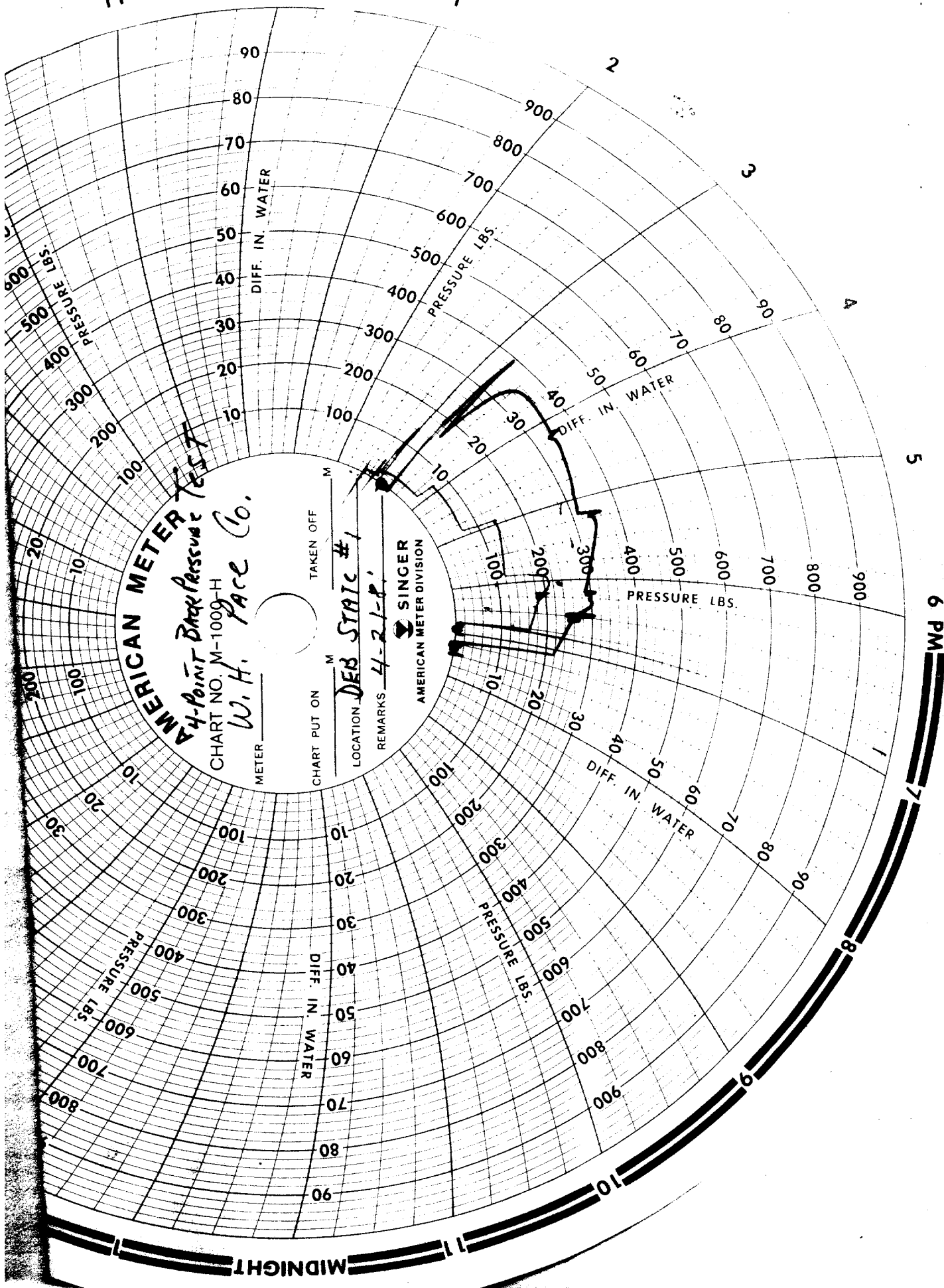
2.594

GRAVITY 0.8305

BTU 1065

Wet 1046





6 PM