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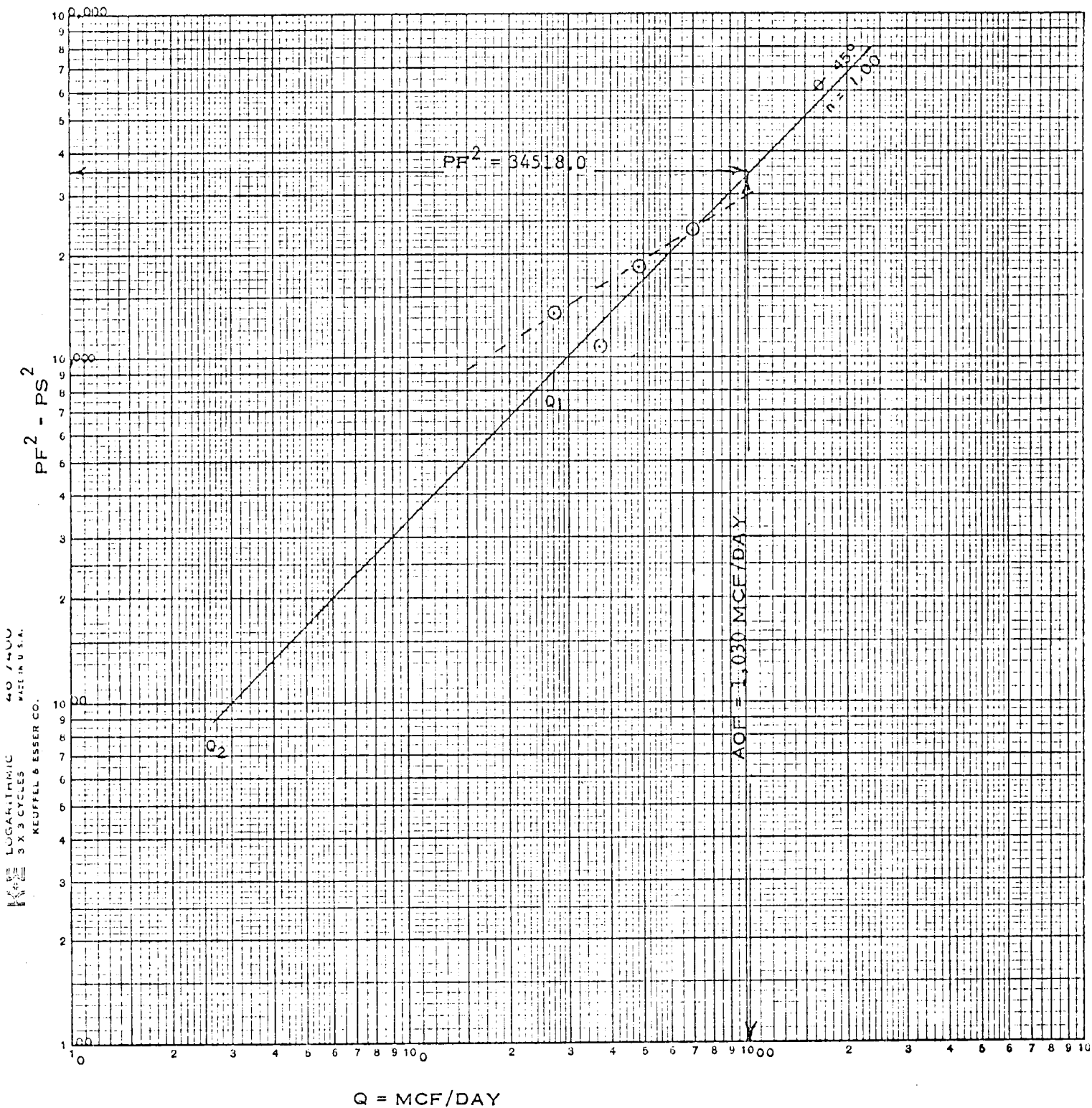
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Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 8-15-77		AUG 30 1977	
Company CITIES SERVICE OIL CO.				Connection NONE		O.C.C.	
Papi East & Carlsbad Wolfcamp				Formation WOLFCAMP		ARTERIA, OFFICE	
Completion Date 8-15-77		Total Depth 11830'		Plug Back TD 11300'		Elevation	
Csg. Size 5 1/2		Wt. 17#		Set At 11300'		Perforations: From 9579' To 9585'	
Thp. Size 2 7/8		Wt. 6.5		Set At 9474'		Perforations: From OPEN To END	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE				Packer Set At 9468'		Form or Lease Name ELIZANDOFED. W	
Producing Thru TUBING		Reservoir Temp. *F 170° @ 9600'		Mean Annual Temp. *F 74		Baro. Press. - P _a 13.2	
L 9600'		H 9600'		G _g .663		% CO ₂ .11	
				% N ₂ .62		% H ₂ S	
				Prover		Meter Run 6"	
						Taps FLANGE	
FLOW DATA				TUBING DATA		CASING DATA	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. *F	Duration of Flow
SI							
1.	6	x	1.00	410	9	75	1 HOUR
2.	6	x	1.00	400	5	70	1 HOUR
3.	6	x	1.00	420	15	64	1 HOUR
4.	6	x	1.00	425	30	58	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, Mcd
1	4.726	61.72	423.2	.9859	1.228	1.041	368
2	4.726	45.45	413.2	.9905	1.228	1.042	272
3	4.726	80.61	433.2	.9962	1.228	1.045	487
4	4.726	114.66	438.2	1.002	1.228	1.048	699
5							
NO.	P _f	Temp. *R	T _r	Z	Gas Liquid Hydrocarbon Ratio 7.608 Mcf/bbl.		
1	.63	535	1.42	.923	A.P.I. Gravity of Liquid Hydrocarbons 56.5 @ 60 Deg.		
2	.62	530	1.40	.921	Specific Gravity Separator Gas .663 X X X X X X X X		
3	.65	524	1.39	.915	Specific Gravity Flowing Fluid X X X X X G-MIX 1.015		
4	.65	518	1.37	.910	Critical Pressure 670 P.S.I.A. 657 P.S.I.A.		
5					Critical Temperature 378 R 497 R		
P _f 5875.2 P _s 34518.0							
NO.	P _f ²	P _s	P _s ²	P _f ² - P _s ²	(1) $\frac{P_f^2}{P_f^2 - P_s^2} = 1.473$		
1	4866.2	23679.9	10838.1		(2) $\left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 1.473$		
2	4590.2	21069.9	13448.1				
3	4046.2	16371.7	18146.3		ACF = Q $\left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 1.030$		
4	3329.2	11083.6	23434.4				
5							
Absolute Open Flow 1,030 Mcd @ 15.025					Angle of Slope @ 45		Slope, n 1.00
Remarks: BOTTOM HOLE PRESSURES MEASURED WITH KUSTER GAUGE. WELL MADE 10 BBLs CONDENSATE & 1 BBL WATER. POINT ALIGNMENT TOO FLAT A SLOPE OF 45° WAS DRAWN THROUGH HIGH RATE OF FLOW.							
Approved By Commission:		Conducted By: JOHN WEST ENG. CO.		Calculated By: R.E.R.		Checked By: J.W. W.	

$$\text{ABS SLOPE (N)} = Q_1 = 270 = 2.431364$$

$$Q_2 = 27 \quad \frac{1.431364}{1.000000}$$

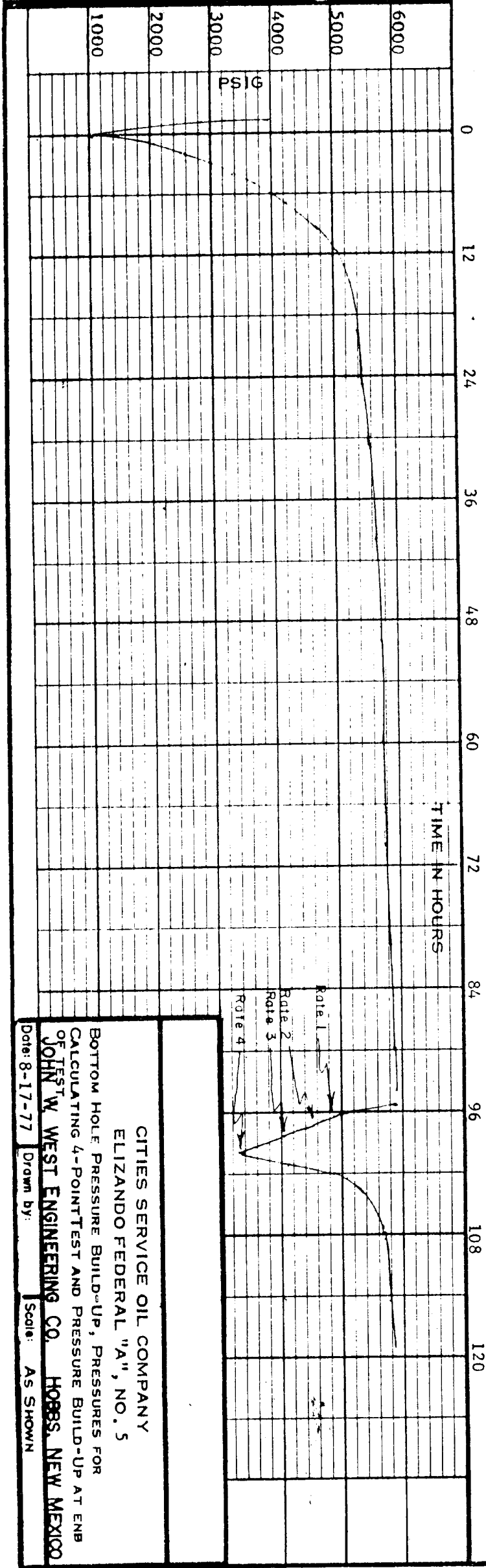
$$\text{CAOF} = 669 \left(\frac{34518.0}{23434.4} \right) = 1030 \text{ MCF/DAY}$$



TEST DATE: August 11 to 16, 1977
TEST DEPTH: 9600 FEET

ELEMENT NO: 11766 N
RANGE: 0-6000 PSI
CLOCK NO: 12052
RANGE: 120 HOURS

NOTE: SEE TABULATION OF PRESSURE AND TIME ON ATTACHED SHEET



CITIES SERVICE OIL COMPANY
ELIZANDO FEDERAL "A", NO. 5
BOTTOM HOLE PRESSURE BUILD-UP

TEST CONDUCTED BY:
JOHN WEST ENGINEERING COMPANY

TEST DATE: AUGUST 11 TO 16, 1977
TEST DEPTH: 9600 FEET
ELEMENT NO. 11766-N (0-6000)
OPERATOR: M.T, G.E. AND H.W.

DATE	TIME	CUM. HRS. / MIN.		PSIG @ 9600 FEET
8-11-77	9:40 AM			3936 GAUGE REACHED 9600', FLOWING
	10:00			2073
	10:30			1347
8-11-77	10:50	00 HRS	00 MIN.	1240 SHUT IN FOR BUILD-UP, DW 747
		00	15	1407
		00	30	1568
		00	45	1796
	11:50 AM	01	00	2052
	12:20 PM	01	30	2329
	12:50	02	00	2579
	1:50	03	00	2973
	2:50	04	00	3340
	3:50	05	00	3736
	4:50	06	00	4108
	5:50	07	00	4411
	6:50	08	00	4652
	7:50	09	00	4844
	8:50	10	00	4961
8-11-77	10:50 PM	12	00	5132
8-12-77	1:50 AM	15	00	5267
	6:50	20	00	5393
	11:50 AM	25	00	5474
8-12-77	4:50 PM	30	00	5538
8-13-77	2:50 AM	40	00	5628
	12:50 PM	50	00	5691
8-13-77	10:50 PM	60	00	5742
8-14-77	8:50 AM	70	00	5781
8-14-77	6:50 PM	80	00	5814
8-15-77	4:50 AM	90	00	5847
8-15-77	8:50 AM	94	00	5859 GAUGE OUT TO CHANGE CHART
8-15-77	10:00 AM	95	10	5862 GAUGE BACK TO 9600'
	10:15	00	00	5862 BEGIN RATE 1, 4/64" CHOKE
		00	15	5282
		00	30	5111
		00	45	4976
	11:15	01	00	4853 END RATE 1
8-15-77		01	15	4721 BEGIN RATE 2, 6/64" CHOKE
		01	30	4628
		01	45	4592
	12:15 PM	02	00	4577 END RATE 2
		02	15	4429 BEGIN RATE 3, 8/64" CHOKE
		02	30	4222
		02	45	4105
	1:15 PM	03	00	4033 END RATE 3
		03	15	3739 BEGIN RATE 4, 10/64" CHOKE
		03	30	3565
		03	45	3407
	2:15 PM	04	00	3316 END RATE 4
		00	00	3316 SHUT IN FOR BUILD-UP

DATE	TIME	CUM. HRS. / MIN.		PSIG @ 9600 FEET
8-15-77		00 HRS	15 MIN	3559
		00	30	3754
		00	45	3927
	3:15 PM	01	00	4090
		01	30	4402
	4:15	02	00	4664
	5:15	03	00	5081
	6:15	04	00	5339
	7:15	05	00	5480
	8:15	06	00	5574
	9:15	07	00	5631
	10:15	08	00	5673
8-15-77	11:15 PM	09	00	5697
8-16-77	12:15 AM	10	00	5721
	2:15	12	00	5754
	5:15	15	00	5787
8-16-77	8:40 AM	18	25	5811 GAUGE OUT, END OF TEST
				DW 3995