NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 9-20-68	
Company: TEXACO Inc.		Connection: -----			
Pool: Paduca North Delaware		Formation: Delaware		Unit	
Completion Date: 9-14-68	Total Depth: 4850	Plug Back TD: 4822	Elevation: 3510	Farm or Lease Name: Cotton Draw Unit	
Csg. Size: 4.5 / Wt.: 9.5 / d: 4.091 / Set At: 4850		Perforations: From 4766 To 4774		Well No.: 72	
Tbg. Size: 2.375 / Wt.: 4.70 / d: 1.995 / Set At: 4592		Perforations: From ----- To -----		Unit: P / Sec.: 33 / Twp.: 24-S / Rge.: 32-E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 4592		County: Lea	
Producing Thru: Tubing	Reservoir Temp. °F: 561°@ 4592	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2	State: New Mexico	

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
4592	4592	0.800				2"		

	FLOW DATA					TUBING DATA		CASING DATA		
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	Duration of Flow
SI				1701.0			1701.0		Packer		72
1.	2	x	1/2	45.5			1580.0	60			1
2.	2	x	3/4	39.2			1432.0	60			1
3.	2	x	7/8	34.6			1330.0	60			1
4.	2	x	1	35.7			1221.0	60			1
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 Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	4.279		58.7	1.000	1.118	1.020	286
2.	9.453		52.4	1.000	1.118	1.020	565
3.	13.00		47.8	1.000	1.118	1.020	709
4.	17.09		48.9	1.000	1.118	1.020	953
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.09	520	1.23	.962
2.	.08	520	1.23	.962
3.	.07	520	1.23	.962
4.	.07	520	1.23	.962
5.				

Gas Liquid Hydrocarbon Ratio: Dry Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: ----- Deg.
Specific Gravity Separator Gas: 0.800 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 665 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 424 R ____ R

P_c 1714.2 P_c^2 2938.5

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	2538.3		2539.3	399.2
2	2088.6		2092.6	845.9
3	1804.2		1810.7	1127.8
4	1523.2		1535.4	1403.1
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{2938.5}{1403.1} = 2.094$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.054$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1,957$

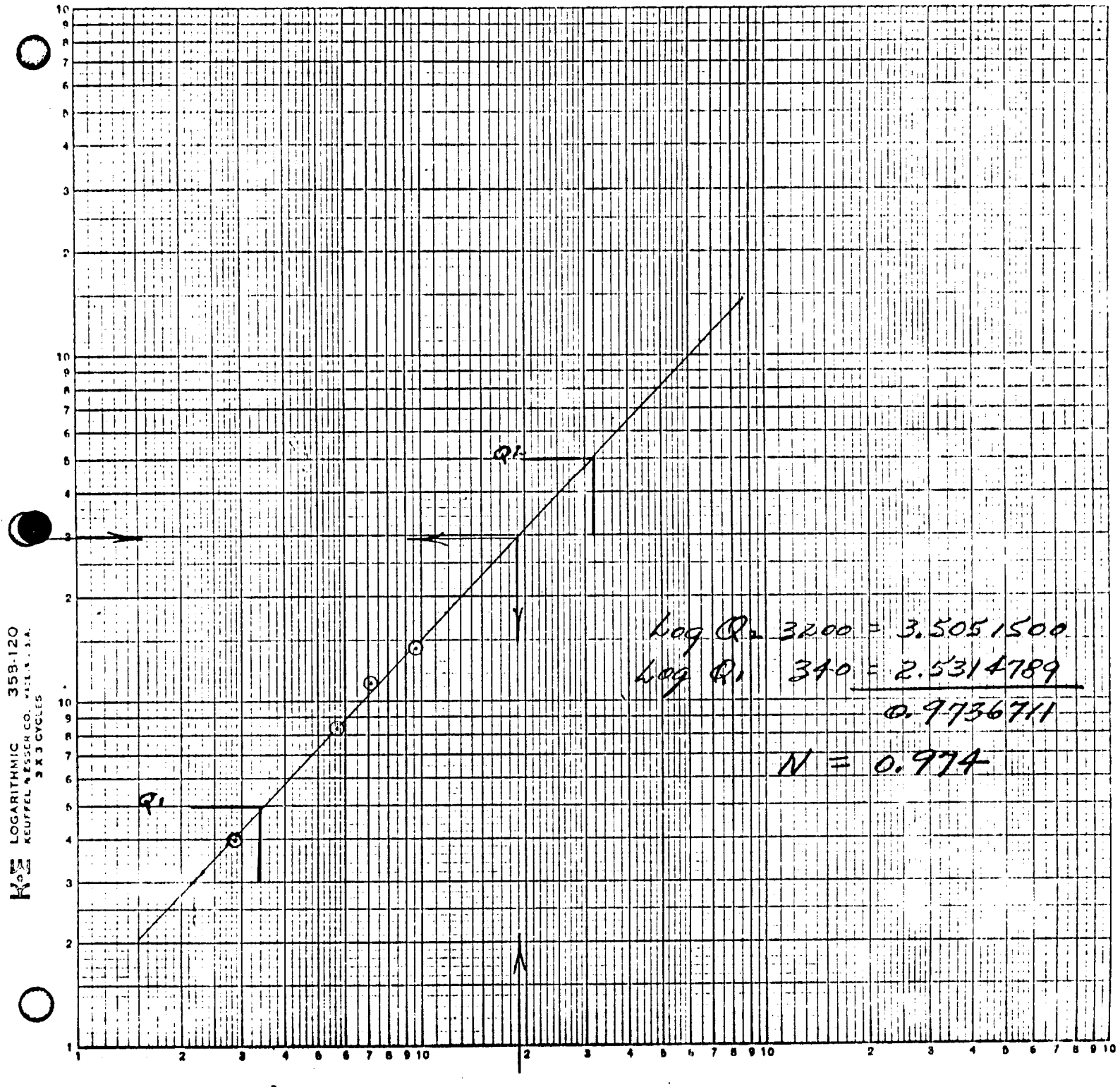
Absolute Open Flow: 1,957 Mcfd @ 15.025
Angle of Slope θ: 46.0° Slope, n: 0.974

Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	C. J. Seals	C. J. Seals	

C. J. Seals

Cottow Draw Unit #72
September 20, 1968



LOGARITHMIC 358-120
KEUFFEL & ESSER CO.
3 X 3 CYCLES

Log Q_2 3200 = 3.505 1500
Log Q_1 340 = 2.531 4789
0.973 6711
N = 0.974

AOF = 1,957 MCFD
N = 0.974
Cotan. = 46.0°

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Texaco Inc. LEASE Cotton Draw Unit WELL NO. 72 DATE 9-20-68

LOCATION: Unit P Section 33 Township 24-S Range 32-E

L 4592 H 4592 L/H 1.000 G 0.500 % CO_2 ____ % N_2 ____ % H_2S ____

d 1.995 F_I .018231 GH 3674 P_{CI} 665 (TABLE IX & X) T_{CI} 424 (TABLE IX & X)

LINE	1st Rate 1st Trial	1st Rate 2nd Trial	2nd Rate 1st Trial	2nd Rate 2nd Trial	3rd Rate 1st Trial	3rd Rate 2nd Trial	4th Rate 1st Trial	4th Rate 2nd Trial		
1 Q_m	.286	—	.565	—	.709	—	.953	—		
2 T_w (W.H. °R)	520	—	520	—	520	—	520	—		
3 T_s (B.H. °R)	561	—	561	—	561	—	561	—		
4 $T = (\frac{T_w + T_s}{2})$	541	—	541	—	541	—	541	—		
5 Z (Est.)	.665	.611	.626	.620	.628	.634	.650	.655		
6 TZ	359.8	330.6	336.7	335.4	339.7	343.0	351.7	354.4		
7 GH/TZ	10.21	11.11	10.95	10.95	10.82	10.71	10.45	10.37		
8 e^s (Table XIV)	1.467	1.517	1.502	1.508	1.504	1.492	1.480	1.475		
9 $1-e^{-s}$ (Table XIV)	.318	.341	.334	.337	.335	.331	.324	.322		
10 P_t	1593.2	—	1445.2	—	1343.2	—	1234.2	—		
11 $P_t^2/1000$	2538.3	—	2088.6	—	1804.2	—	1523.2	—		
12 F_I (Table XV)	.018231	—	.018231	—	.018231	—	.018231	—		
13 $F_c = F_I TZ$	6.560	6.027	6.175	6.115	6.193	6.253	6.412	6.461		
14 $F_c Q_m$	1.876	1.724	3.489	3.455	4.391	4.421	6.111	6.157		
15 $L/H (F_c Q_m)^2$	3.519	2.972	12.17	11.94	19.28	19.55	37.34	37.91		
16 $F_w = L/H (F_c Q_m)^2 (1-e^{-s})$	1.119	1.013	4.065	4.024	6.459	6.471	12.10	12.21		
17 $P_w^2 = P_t^2 + F_w$	2539.4	2539.3	2092.7	2092.6	1810.7	1810.7	1535.3	1535.4		
18 $P_s^2 = e^s P_w^2$	3725.3	3852.1	3142.2	3155.6	2723.3	—	2272.2	2264.7		
19 P_s	1930.0	1962.7	1772.9	1776.5	1650.2	—	1507.3	1505.0		
20 $P = (\frac{P_t + P_s}{2})$	1761.6	1778.0	1609.1	1615.9	1496.7	—	1370.8	1369.6		
21 $P_r = (P/P_{cr})$	2.65	2.67	2.42	2.42	2.25	—	2.06	2.06		
22 $T_r = (T/T_{cr})$	1.28	—	1.28	1.28	1.28	—	1.28	—		
23 Z (Table XI)	.611	.610	.620	.620	.634	.634	.655	.655		

One copy to be filed in District Office (Work copy acceptable)