

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

Form C-122
 Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special Test Date 10/24/82						JAN 03 1983 O. C. D. ARTESIA, OFFICE			
Company Yates Petroleum Corporation Connection Transwestern Pipeline				Pool Pecos Slope - Abo Gas Formation Abo					
Completion Date 4/4/82		Total Depth 4250'		Plug Back TO 4187'		Elevation 3635' GL		Farm or Lease Name Williamson "LC" Federal	
Csg. Size 4 1/2"	Wt. 9.5#	d 4.090	Set At 4233'	Perforations: From 3867 To 3922		Well No. 6			
Tub. Size 2 7/8"	Wt. 6.5#	d 2.441	Set At 3820'	Perforations: From To		Unit Sec. Twp. Rge. H 9 8S 25E			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 3820'		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 106 @ 3900		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2 psi		State New Mexico	
L 3820	H 3820	G _g .677	% CO ₂ .64	% N ₂ 11.4	% H ₂ S 0	Prover -	Meter Run 2"	Tens Flanged	

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.	
SI							961			
1.	2.067	x	.875	535	3.6	72	813	62		
2.	2.067	x	.875	560	3.8	72	791	62		24 hr.
3.	2.067	x	.875	560	5.1	75	761	62		24 hr.
4.	2.067	x	.875	575	6.0	75	730	62		24 hr.
5.										

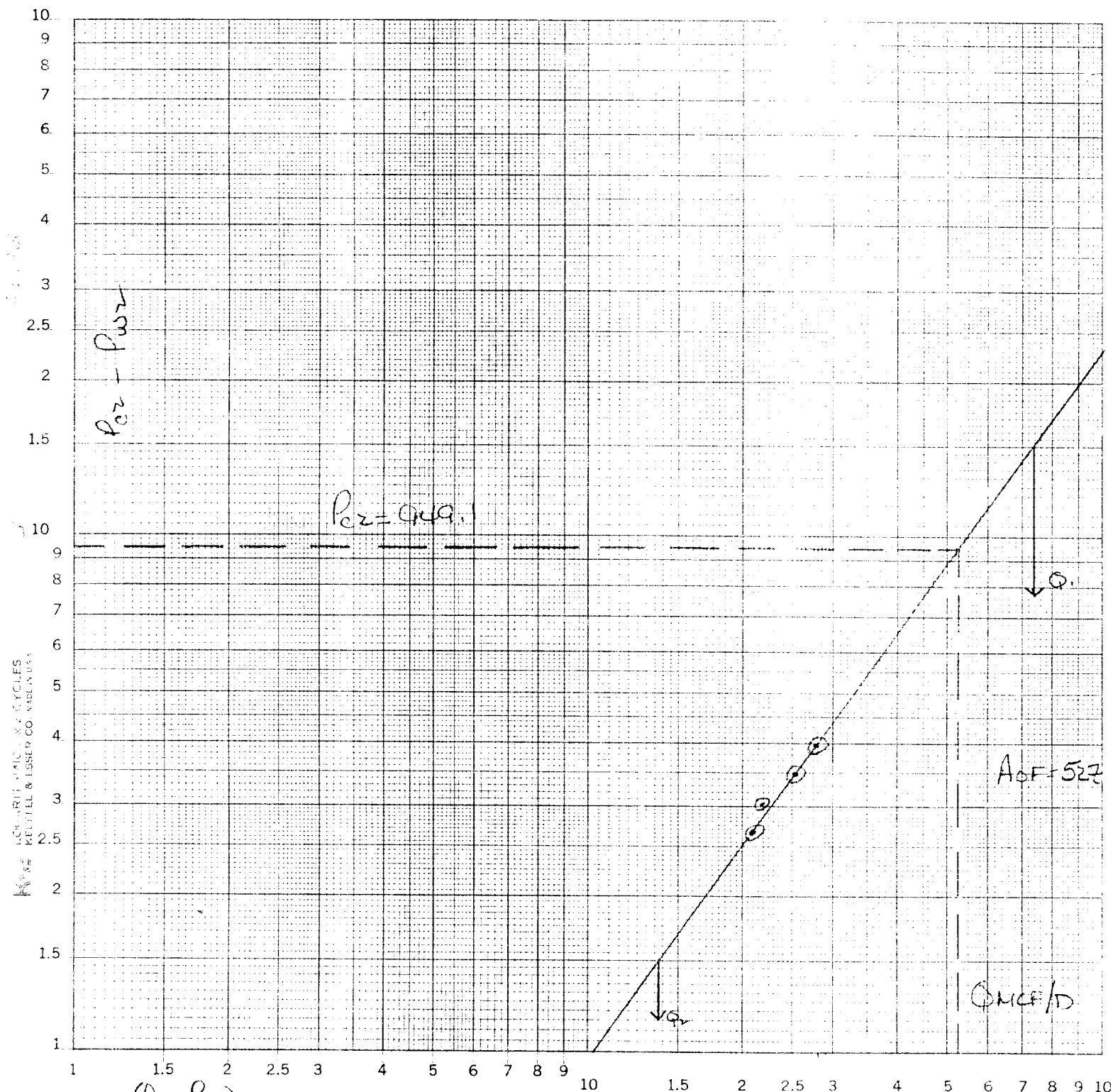
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	3.729	44.7	548.2	.9887	1.215	1.044	209
2	3.729	47.0	573.2	.9887	1.215	1.046	220
3	3.729	54.2	573.2	.9859	1.215	1.045	253
4	3.729	59.4	588.2	.9859	1.215	1.047	278
5.							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>Dry</u> Mcf/lbl.	
	1	.83	532	1.50	.918	A.P.I. Gravity of Liquid Hydrocarbons <u>--</u> Deg.
	2	.87	532	1.50	.914	Specific Gravity Separator Gas <u>.677</u> X X X X X X X X
	3	.87	535	1.51	.916	Specific Gravity Flowing Fluid <u>X X X X X</u> .677
	4	.90	535	1.51	.913	Critical Pressure <u>654</u> P.S.I.A. <u>654</u> P.S.I.A.
5.					Critical Temperature <u>354</u> R <u>354</u> R	

NO.	P _c 974.2	P _c ² 949.1	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.394$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.896$	
	P _t ²	P _w ²				
	1	826.6				682.8
	2	646.7				647.0
	3	599.4				599.7
4	552.3	552.7	396.4	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 527$		
5						

Absolute Open Flow <u>527</u> Mcfd @ 15.025		Angle of Slope θ <u>.733</u>	
Remarks: <u></u>			
Approved By Commission:		Conducted By: David Weaver	
		Calculated By: Andie Alderson	
		Checked By:	

Union Petroleum Corporation
 Williamson "20" Field #6
 Unit # 9-85-25E
 Chaves County



$$\begin{aligned}
 (P_{02} - P_{w2})_1 &= 1500 \\
 (P_{02} - P_{w2})_2 &= 150 \\
 &= Q_1 = 340 \\
 &Q_2 = 137
 \end{aligned}$$

$$\begin{aligned}
 \log Q_1 &= 2.86723 \\
 \log Q_2 &= 2.13672 \\
 n &= .73251 = .733
 \end{aligned}$$

COMPANY Lester Petroleum Corp LEASE Williamson # C-7-2014 WELL NO. 6

DATE 12/13/82

LOCATION: Unit H Section 9 Township S5 Range 25E

L 3820 H 3820 L/H 1 G .677 % CO₂ .64 % N₂ 11.4 % H₂S -

d 2.441 F₁ .010763 GH 2586 P_{cr} 654 T_{cr} 354

TABLE IX B 2

LINE	1st	2nd	3rd	4th				
1 Q _m	.207	.220	.253	.278				
2 T _w (W.H. °R)	522	522	522	522				
3 T _S (B.H. °R)	566	566	566	566				
4 T = $(\frac{1}{2}W + \frac{1}{2}S)$	544	544	544	544				
5 Z (Est.)	.884	.887	.890	.894				
6 T _Z	480.7	482.53	484.16	486.34				
7 GH/TZ	5.377	5.357	5.341	5.317				
8 e ^s (Table XIV)	1.223	1.223	1.222	1.221				
9 1-e ^s (Table XIV)	.182	.182	.182	.181				
10 P _t	826.2	804.2	774.2	743.2				
11 P _t 2/1000	682.6	646.7	599.4	552.3				
12 F ₁ (Table XV)	.010763	.010763	.010763	.010763				
13 F ₂ = F ₁ T _Z	5.176	5.193	5.211	5.234				
14 F ₃ Q _m	1.0562	1.143	1.318	1.455				
15 L/H (F ₃ Q _m) ²	1.170	1.305	1.738	2.118				
16 F ₃ = L/H (F ₃ Q _m) ² (1-e ^s)	.213	.238	.316	.383				
17 P _w ² = P _t ² + F _w	682.8	647.0	571.7	552.7				
18 P _S ² = e ^s P _w ²	835.1	791.3	732.8	674.9				
19 F ₃	913.8	889.5	836.1	821.5				
20 F ₃ = $(\frac{F_1 + P_{S1}}{2})$	870.0	846.9	815.1	782.4				
21 F ₁ = P/P _{cr}	1.33	1.27	1.25	1.24				
22 T ₁ = (T/T _{cr})	1.54	1.54	1.54	1.54				
23 Z (Table XI)	.984	.987	.987	.987				