

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

Form C-122
Revised 9-1-65

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 2-1-1975		RECEIVED			
Company Read & Stevens, Inc.						Connection (Pending)					
Pool Buffalo Valley						Formation Atoka - Morrow		U.S. GEOLOGICAL SURVEY ARTESIA, NEW MEXICO Farm or Lease Name Harris Federal			
Completion Date 3-2-74		Total Depth 8966		Plug Back TD 8910		Elevation 3617 RKB					
Csg. Size 5 1/2"	Wt. 17	d 5"	Set At 8966	Perforations: From 8566 To 8807		Well No. 2					
Tbg. Size 2 3/8	Wt. 4.7	d 2"	Set At 8558	Perforations: From OPEN To ENDED		Unit Sec. Twp. Rge. C 24 15S 27E					
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single Casing Set thru & Perforated						Packer Set At 8558'		County CHAVES			
Producing Thru 2 3/8"		Reservoir Temp. °F 146 @ 8900		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State N. Mexico			
L 8566	H 8566	G _g 0.625	% CO ₂ —	% N ₂ —	% H ₂ S —	Prover —	Meter Run 4.026	Taps 7/8"			

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							1941		PKR	—
1.	4.026		1 1/2	350	11	81	1842	55	—	—
2.	4.026		1 1/2	350	47	80	1744	50	—	—
3.	4.026		1 1/2	350	76	76	1646	35	—	—
4.										
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	10.84	63.21	363.2	.9804	1.265	1.030	875
2	10.84	130.65	363.2	.9813	1.265	1.031	1811
3	10.84	166.14	363.2	.9850	1.265	1.032	2316
4.							
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
					51.098 Mcf/bbl.	63 Deg.	0.625	XXXXXX	671 P.S.I.A.	365 R
1.	.0541	541	1.482	0.942						
2.	.0541	540	1.479	0.941						
3.	.0541	536	1.468	0.939						
4.										
5.										

NO.	P _r ²	P _w ²	P _w ²	P _r ² - P _w ²
1	—	2628.2	6907.4	4977.7
2	—	2462.2	6062.4	1342.5
3	—	2336.2	5457.8	1947.1
4				
5				

(1) $\frac{P_r^2}{P_r^2 - P_w^2} = \frac{4977.7}{1342.5} = 3.707$

AOF = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 6300$

(2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 3.707^n$

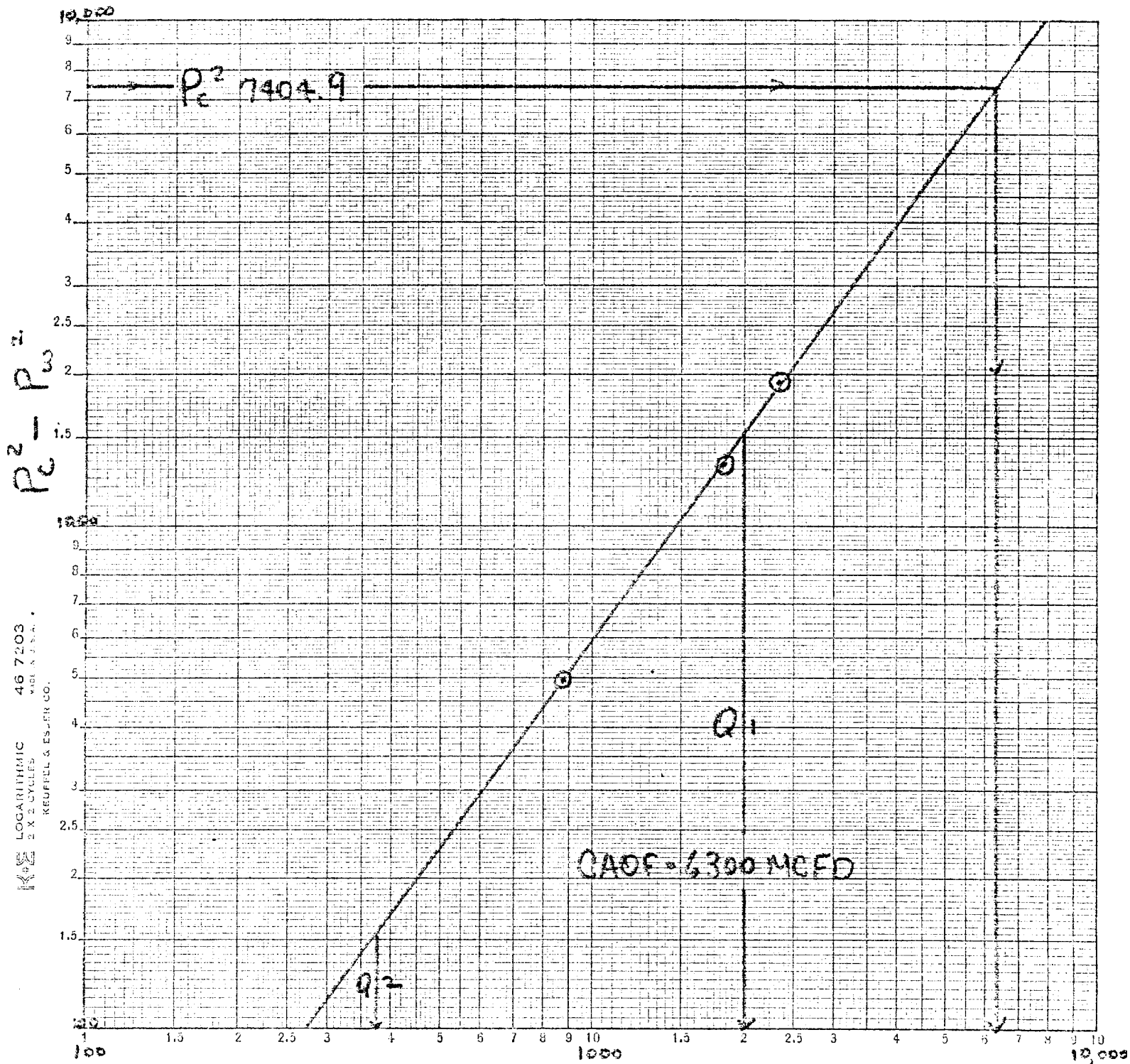
Absolute Open Flow 6300 Mcfd @ 15.025	Angle of Slope θ .727
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Remarks: *** From BHP Bomb @ 8810**

Approved By Commission:	Conducted By: GAS	Calculated By: Steve R. Allen	Checked By:
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Read & Stevens, Inc.

Harris Federal #2



Note: Pressures from
BHP Bomb @ 8810'

Q MC/D

$Q_1 = 2000$ Log 3.3010
 $Q_2 = 375$ Log 2.5740
 .7270

$N = .727$

SUGGESTED FIELD DATA SHEET (Not Required To File)									
Type Test		☒ Initial		☐ Annual		☐ Special		Test Date	
Company		Read & Stevens, Inc.		Connection		Pending		Lease No. or Serial No.	
Field		Buffalo Valley		Reservoir		Atoka-Morrow		Location	
Completion Date		3-2-74		Total Depth		8960		Plug Back TD	
						8910		Elevation	
								3617 RKB.	
Csg. Size		5 1/2"		Wt.		17		5"	
Tbg. Size		2 3/8"		Wt.		4.7		2"	
Type Completion (Describe)		Single - open ended and perforated.		8558		Perforations: From		To	
						8566		8807	
Producing thru		2 3/8" Tubing		Reservoir Temp. F		146°		Mean Annual Temp. F	
						60		Baro. Press. - P _a	
								13.2	
8566'		8566'		0.625		% CO ₂		% N ₂	
								% H ₂ S	
								Prover	
								Meter Run	
								Taps	
								4.026 flange	
Form or Lease Name		Harris Fed. 2		Well No.		2		Sec.	
								Twp.-Blk.	
								Rge.-Sur.	
								24 15S 27E	
County or Parish		CHAVIS		State		N. Mexico			

DATE	ELAP. TIME	Wellhead Working Pressure			METER OR PROVER				REMARKS
		Tbg. Psig.	Csg. Psig.	Temp. F	Pressure Psig.	Diff.	Temp. F	Orifice	
Time of Reading	Hrs.								(Include liquid production data: Type-A.P.I. Gravity-Amount)
1:30P		1940							Dead Weight.
2:15	45	1941							Dead Weight.
2:15		1941							OPEN ON 1/64" Choke
2:30	15	1875		55	350	20	75	1 1/2	1 1/2/64 0'-0"
2:45	30	1840		55	350	16	81	"	1 1/2/64
3:00	45	1833		55	350	11	81	"	9 1/2/64
3:15	60	1842		55	350	11	81	"	9 1/2/64 0'-0"
3:30	15	1810		55	350	60	72	1 1/2	OPEN to 1 1/2/64
3:45	30	1727		55	350	70	70	"	15/64 1 1/2/64
4:00	45	1745		55	350	60	77	"	15/64 1 1/2/64
4:15	60	1744		50	350	62	80	"	14/64 1 1/2/64
4:30	75	1744		50	350	47	80	"	14/64 1 1/2/64
4:45	15	1655		45	350	90	76	1 1/2	14/64 1 1/2/64
5:00	30	1642		40	350	94	76	"	15 1/2/64
5:15	45	1642		40	350	84	76	"	15 1/2/64
5:30	60	1647		40	350	77	76	"	15 1/2/64
5:45	75	1646		40	350	73	76	"	15 1/2/64
6:00	90	1646		35	350	76	76	"	15 1/2/64 0'-2"

Field Cal.									
1st	920	MCF	=	38,333					
2nd	1900	MCF	=	98,958					
3rd	2300	MCF	=	143,750					
		Cu. Ft.		281,041					
					Field Cal. Volumes Produced 5 1/2 bbls.				

Gas-Oil Ratio = 51.098 MCF per bbl.									
(Field Cal.)									

Bottom Hole pressure = 8810'									
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Before Test = 2708.									
1st Point = 2615									
2nd Point = 2449									
3rd Point = 2323									
20 hrs S.L. = 2675									

BOTTOM HOLE PRESSURE SURVEY REPORT

DEPTH	PRESSURE	GRADIENT
	Lbs.	
Press. before starting	2708	
" flow No. 1-----	2615	
" " " 2-----	2449	
" " " 3-----	2323	
" shut-in 15 min.	2460	SI. 8 Hrs. 2670#
" " " 30 "	2533	" 12 " 2672
" " " 45 "	25	" 16 " 2674
" " " 60 "	2609	" 20 " 2675
" " " 2 Hrs.	2634	
" " " 3 "	2649	
" " " 4 "	2655	
" " " 5 "	2662	
" " " 6 "	2665	
" " " 7 "	2668	

