

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

1-S-7
1-C-122 file
1-Our file
Form C-122
Revised 9-1-65

RECEIVED

Type Test ☐ Initial ☐ Annual ☒ Special				Test Date 2-7-78		FEB 13 1978	
Company R. L. Foree ✓				Connection Phillips		O. C. C. ARTERIA, OFFICE	
Pool Sams Ranch Grayburg				Formation Premier Grayburg		Unit	
Completion Date 7-30-73		Total Depth 1920		Plug Back TD		Elevation 3618	
Csg. Size 5 1/2		Wt. 24.6		Set At 1866		Perforations: From 1866 To 1920 (OH)	
Trg. Size 2 3/8		Wt. 4.7		Set At 1846		Perforations: From To	
Type Well - Single -- Bradenhead -- G.G. or G.O. Multiple Single - Gas Well				Packer Set At None		County Chaves	
Producing Thru Tubing		Reservoir Temp. *F 82° @ Perfs		Mean Annual Temp. *F 60°		Baro. Press. - P _g 13.2	
L 1846		H 1846		G _g .732		% CO ₂ 0	
				% N ₂ 24.00		% H ₂ S	
				Prover		Meter Run Four-Inch	
						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							993		993		
1.	4	X	1	237	3	60	906		910		1 hr
2.	4	X	1	237	6.5	60	835		838		1 hr
3.	4	X	1	237	13.	60	736		740		1 hr
4.	4	X	1	247	25.2	60	595		604		1 hr
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.753	26.84	240.2	1.0	1.169	1.017	152.
2.	4.753	39.51	240.2	1.0	1.169	1.017	223.
3.	4.753	55.88	240.2	1.0	1.169	1.017	316.
4.	4.753	79.40	250.2	1.0	1.169	1.018	449.
5.							

NO.	P _r	Temp. *R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.	.383	520	.155	.966	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.	.383	520	.155	.966	Specific Gravity Separator Gas .732 X X X X X X X X
3.	.383	520	.155	.966	Specific Gravity Flowing Fluid X X X X X
4.	.340	520	.155	.965	Critical Pressure 668 - 41 = 627 P.S.I.A. P.S.I.A.
5.					Critical Temperature 401 - 66 = 335 R R

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$
1		923.2	852.	160	$\frac{P_c^2}{P_c^2 - P_w^2} =$ 2.27	$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$ 2.05
2		851.2	725	287		
3		753.2	562	445		
4		608.2	370	642		
5						

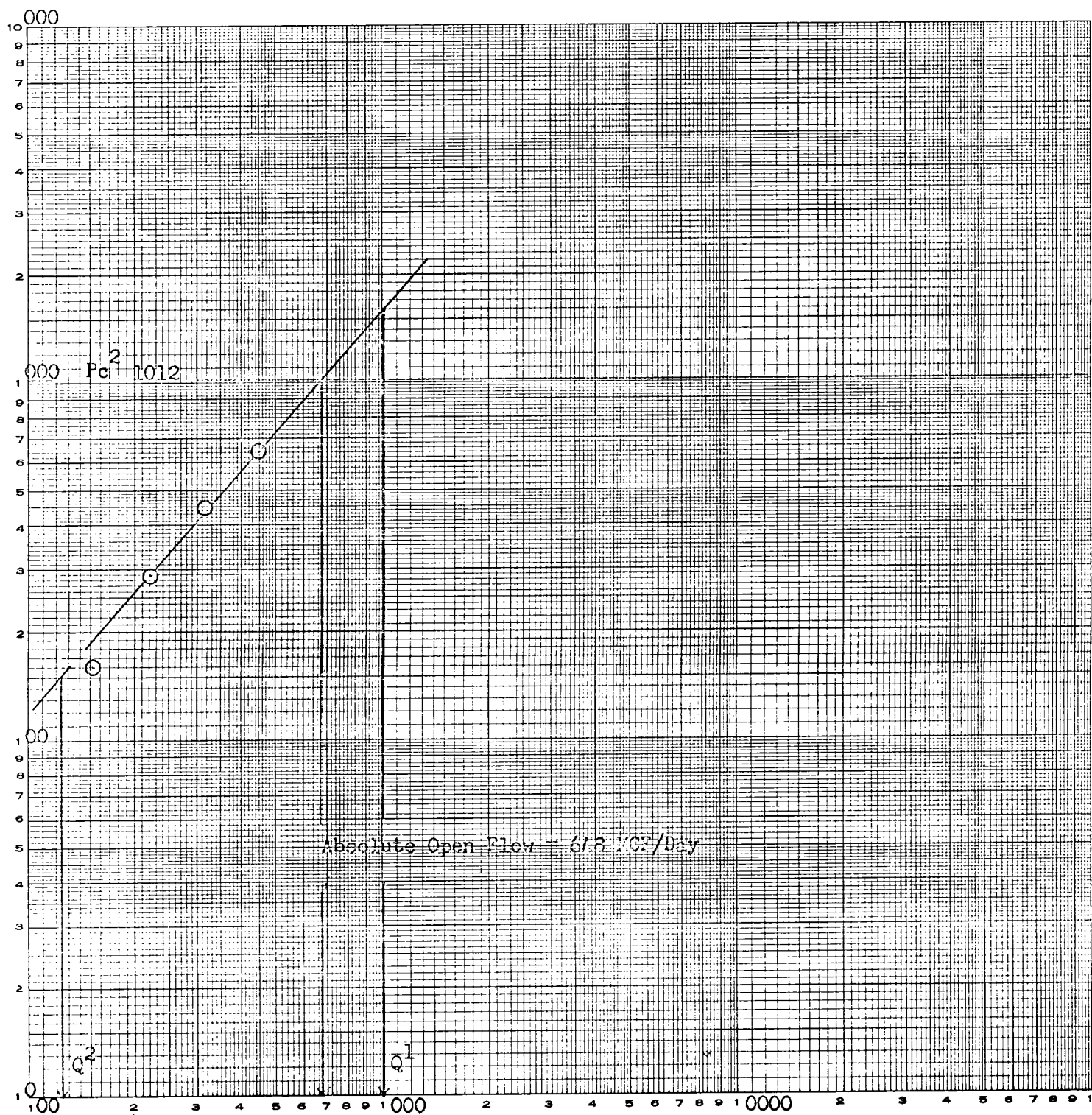
Absolute Open Flow 648. Mcfd @ 15.025				Angle of Slope 42.3		Slope, n .903	
Remarks:							

Approved By Commission:	Conducted By: John Davis	Calculated By: Larry Davis	Checked By:
-------------------------	------------------------------------	--------------------------------------	-------------

Company: R. L. Foree
 Lease: McClellan
 Well No: # 1
 Field: Sams Ranch
 County: Chaves
 Date: 2-7-78

EUGENE DIETZGEN CO.
 MADE IN U. S. A.

NO. 34DR-L33 DIETZGEN GRAPH PAPER
 LOGARITHMIC
 3 CYCLES X 3 CYCLES



$$\begin{aligned}
 Q^1 &= 1000; & \text{Log of } Q^1 &= 3.000000 \\
 Q^2 &= 125; & \text{Log of } Q^2 &= 2.09691 \\
 N &= .903
 \end{aligned}$$

Analysis No. **N-13**

Sample No. LUSK AREA		McClellan #1-J-14-14-28	
Location STA # 76543		R.L. FOREE OH 1886-1920	
Field Some Ranch Gr.		Formation Gr.	State NEW MEX.
Date Secured 1-8-77	Secured By Brock	TYPE TAP	Pressure 720 #
Date Run 1-10-77	Run By RS	CHORE	TEMP 50
Purpose		Flow Tub Press	Flow GVEY .732
Baro. 50°		Atmos. Temp. 47°	

SULPHUR - GRS. PER 100 cu. Ft. **STLA** Hydrogen Sulphide **STLA** Microsorption **yes**

COMPONENT	STO.	HE ₂	STO.	UNK	UNCORRECTED MOL %	CORRECTED MOL %	GPM & FACTOR	BTU FACTOR	SP GVEY FACTOR	SUPER COMP FACTOR
Helium									.1382	.0170
Hydrogen Sulphide		H ₂ S						.637.0	1.1765	.0985
Carbon Dioxide	1.05	CO ₂							1.5175	.0640
Nitrogen	4.99	N ₂	274	1288	23.46	23.76			.9672	.0164
Methane	69.91	C ₁	372	348	65.40	66.26		1009.7	.5539	.0436
Ethane	9.31	C ₂	522	320	5.71	5.78	C ₂ 1.541 .26667	1768.8	1.0382	.0917
Propane	6.21	C ₃	320	127	2.46	2.49	C ₃ .684 .27450	2517.5	1.5225	.1342
Iso Butane	3.01	IC ₄	518	54	.31	.31	IC ₄ .101 .32626	3252.7	2.0068	.1744
Normal Butane	3.03	C ₄	464	111	.72	.73	NC ₄ .229 .31937	3262.1	2.0068	.1825
Iso Pentane	.99	IC ₅	112	22	.19	.19	IC ₅ .069 .34510	4000.3	2.4911	.2276
Normal Pentane	1.01	C ₅	106	23	.22	.22	NC ₅ .080 .36140	4009.6	2.4911	.2377
Hexane +	2.00	C ₆	3202	409	.26	.26	C ₆ .112 .43050	5052.0	3.1702	.2830
TOTAL					98.73	100.00	C ₂ + GPM 2.816	WET BASIS BTU 897.	SP GVEY COR. UNCOR. .734	COMP FACTOR 4499

SUPER COMPRESSIBILITY CALCULATIONS

$$\frac{897.}{\text{DAY BASIS BTU}} \times \frac{.9826}{\text{COR.}} = \frac{.9980}{\text{(COMP FACTOR)}} = \frac{883}{\text{SATURATED BASIS BTU}}$$

$$\frac{.734}{\text{UNCOR. COR. SP GVEY}} \times \frac{.9996}{\text{COR.}} = \frac{.9980}{\text{(COMP FACTOR)}} = \frac{.735}{\text{CAL. SP GVEY}}$$

DISTRIBUTION

J. R. Harris
J. R. Blachly
W. Mappel
Edge
M.H.A.
Jan Moore (2)
Control Files