

**N MEXICO OIL CONSERVATION COM. ON
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL**

Form C-122
Revised 9-1-65

☒ Initial ☐ Amend ☐ Revised				Test Date 10/8/79	
Company Minerals, Inc.				Operator Phillips Petr. Co.	
Well (East Grama Ridge) Undesignated				Formation Lower Morrow	
Completion Date 10/6/79		Total Depth 13,280		True Vertical Depth 13,188	
Elevation 3672 KB		Field or Lease Name Llano "34" State Com.			
Casing Size 4 1/2	ID 13.5	d 3.920	Set At 13,279	Perforations From 12,896 To 13,170	
Tubing Size 2-3/8	ID 4.6	d 1.995	Set At 12,870	Perforations From - To -	
Type Well - Single - Branched - G.G. or G.O. Multiple Single				Packer Set At 12,870	
Producing Time TBG		Reservoir Temp. °F 177 @ 13,280		Mean Annual Temp. °F 60°	
Static Pressure - P _g 13.2		State New Mexico			
L 12,870	R 12,870	G _s 0.675	% CO ₂ NIL	% H ₂ NIL	% H ₂ S -
Prover 4"		Meter Run 4"		Flange 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
51	36 hours							5,014		Packer	
1.	4 x 2.250			130	7.8	93	2,710	72			1 hour
2.	4 x 2.250			148	8.5	99	2,120	69			1 hour
3.	4 x 2.250			160	9.0	99	1,890	67			1 hour
4.	4 x 2.250			200	11.0	100	1,595	67			1 hour
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_{fm}}$	Pressure P _{fm}	Flow Temp. Factor Ft	Gravity Factor Fg	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mscf/d
1	28.23	33.42	143.2	0.9697	1.217	1.012	1,127
2	28.23	37.02	161.2	0.9645	1.217	1.013	1,243
3	28.23	39.48	173.2	0.9645	1.217	1.015	1,328
4	28.23	48.43	213.2	0.9636	1.217	1.019	1,634
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	14	Mcf/SGL
1	0.21	553	1.44	0.976	A.P.L. Gravity of Liquid Hydrocarbons	52	Deg.
2	0.24	559	1.46	0.974	Specific Gravity Separator Gas	0.675	X X X X X X X X
3	0.26	559	1.46	0.971	Specific Gravity Flowing Fluid	X X X X X	
4	0.32	560	1.46	0.963	Critical Pressure	669	P.S.I.A.
5					Critical Temperature	383	R

$P_r = 5,027.2$ $P_r^2 = 25,273$	$\frac{P_r^2}{P_r^2 - P_w^2} = 1.49784$	$\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.47026$	
NO. P _r P _w * P _r ² P _r ² - P _w ²			
1	4,648.2	21,606	3,667
2	3,686.2	13,588	11,685
3	3,289.2	10,819	14,454
4	2,898.2	8,400	16,873
5			

Slope = $\frac{2,402}{15,025}$ Angle of Slope = $46021'$ Slope, n = 0.954
--

*Bottom-hole pressure bomb utilized for pressure calculations.

Approved By: _____ & Jarrel Serv. Inc.	Checked By: J. B. Swinney A1 Klaar	Checked By: _____ GWE
---	---------------------------------------	--------------------------

RECEIVED
OCT 18 1951
O.C.D. HOBBS, OFFICE