ARTESIA, OFFICE

NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: ☐ Initial ☐ Annual ☒ Special			Test Date: 12-20-72	
Company: BLACK RIVER CORP.		Connection: El Paso Natural Gas Co.		
Pool: Washington Ranch		Formation: Morrow		Unit:
Completion Date: 9-7-72	Total Depth: 7100'	Plug Back TD: 7060'	Elevation: 3714 KB	Farm or Lease Name: Miller
Csg. Size: 5½ / Wt.: 15.5 / d: 4.950 / Set At: 7000'		Perforations: From 6866' To 6873' and From 6945' To 6954'		Well No.: 1
Tbg. Size: 2 7/8 / Wt.: 6.5 / d: 2.441 / Set At: 6865'		Perforations: From Perf. To Nipple		Unit: L / Sec.: 2 / Twp.: 26S / Rge.: 24E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 6833'		County: Eddy
Producing Thru: Tubing	Reservoir Temp. °F: 145 @ 6860'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2	State: New Mexico
L: 6865 / H: 6865	Gg: 0.570	% CO_2: ---- / % N_2: ---- / % H_2S: ----	Prover:	Meter Run: 4" / Taps: Flange

	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							1762.0		Packer		20.0
1.	4"	X	2⅜"	853.2	1.0	98	1705.0	70			1.0
2.	4"	X	2⅜"	853.2	4.0	88	1634.0	74			1.0
3.	4"	X	2⅜"	864.6	10.2	84	1482.0	76			1.0
4.	4"	X	2⅜"	876.2	18.5	79	1324.0	76			1.0
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	32.64	29.43	866.4	.9653	1.325	1.052	1293
2	32.64	58.87	866.4	.9741	1.325	1.056	2619
3	32.64	94.63	877.8	.9777	1.325	1.058	4233
4	32.64	128.27	889.4	.9822	1.325	1.060	5776
5							

NO.	P_t	Temp. °R	T_r	Z
1	1.29	558	1.6	.904
2	1.29	548	1.58	.897
3	1.31	544	1.57	.893
4	1.32	539	1.56	.890
5				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: Deg.
Specific Gravity Separator Gas: 0.570 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 672 P.S.I.A. P.S.I.A.
Critical Temperature: 346 R R

P_c 2071.2 P_c^2 4289.9

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		2009.2	4036.9	253.0
2		1941.2	3768.3	521.6
3		1811.2	3280.4	1009.5
4		1687.2	2846.6	1443.3
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.9722$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.5657$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 14,819$

Absolute Open Flow: 14,819 Mcfd @ 15.025 | Angle of Slope θ: 49.4 | Slope, n: 0.865

Remarks: Bottom hole pressures recorded with Amerada Bomb @ 6860'

Approved by Commission:	Conducted By:	Calculated By:	Checked By:
	M.C.T.	R.L.W.	J.W.W.