

NL MEXICO OIL CONSERVATION COMMS. IN
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Well file
Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 7-25-71		AUG 3 1971	
Company CITIES SERVICE OIL COMPANY				Connection ---			
Pool SOUTH CARLSBAD <i>Merrow</i>				Formation MORROW		Unit C.C.C. ARTESIA. OFFICE	
Completion Date 7-24-71		Total Depth 11,760		Plug Back TD 11710		Elevation 3173.3	
Csg. Size 5 1/2		Wt. 17		d 4.892		Set At 11758	
Thg. Size 2 3/8		Wt. 4.6		d 1.995		Set At 11255	
Perforations: From 11401 To 11470				Well No. 1			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 11250		County EDDY	
Producing Thru tubing		Reservoir Temp. °F 11700 @ 190°		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 11255		H 11255		G _g .583		% CO ₂ 1.0	
				% N ₂ .27		% H ₂ S --	
				Prover Orifice		Meter Run 4"	
						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	24 hr. S.I.						4741				
1.	4"		2"	320	9	88	3212	82			1 hr.
2.	4"		2"	370	25	82	2433	83			1 hr.
3.	4"		2"	390	34	72	1692	82			1 hr.
4.	4"		2"	425	49	76	892	79			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	19.81	54.8	333.2	.9741	1.310	1.022	1,417
2	19.81	97.8	383.2	.9795	1.310	1.027	2,540
3	19.81	117.1	403.2	.9887	1.310	1.030	3,099
4	19.81	146.5	438.2	.9850	1.310	1.031	3,864
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
1.	.493	548	1.57	0.958			.583	X X X X X X X X		
2.	.566	542	1.55	0.948				X X X X X		
3.	.596	532	1.52	0.942					676	P.S.I.A.
4.	.648	536	1.54	0.940					349	P.S.I.A.
5.										

$P_c = 4754.2$ $P_w^2 = 22,602.4$				$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.164$		$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.143$		
NO.	P_c^2	P_w^2	$P_c^2 - P_w^2$					
1		4025.2	16202.2	6400.2				
2		3246.2	10537.3	12064.6				
3		2567.2	6590.5	16011.9				
4		1787.2	3194.1	19408.3				
5								

$ACF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.423$				Point 4	
Absolute Open Flow 4400 MCFD Mcfd @ 15.025				Angle of Slope θ 0.894	
Remarks: P_w was taken from bottom hole pressure bomb					
Approved By Commission:		Conducted By: David Talbot & Bennett		Calculated By: Brad Bennett	
				Checked By: <i>Brad Bennett</i>	