

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 6/24/86	
Company Exxon Co. U.S.A.		Connection None	
Pool Undesig. Sheep Draw Morrow Gas		Formation Strawn & Penn	
Completion Date 6/20/86	Total Depth 10,377	Plug Back TD 10,354	Elevation 3849
Farm or Lease Name Mary Federal		Well No. 5	
Coq. Size 7	Wt. 26	d 6.276	Set At 10,377
Perforations: From 9742 To 10,349		Well No. 5	
Thg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 9,600
Perforations: From Open To End		Unit Sec. Twp. N 11 23S	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 9600	
County Eddy		State New Mexico	
Producing Thru Tbg.	Reservoir Temp. °F 170 @ 9600	Mean Annual Temp. °F 60	Baro. Press. - P _g 13.2
L 9600	H 9600	G _g .683	% CO ₂ .255
		% N ₂ .394	% H ₂ S
		Prover	Meter Run 4.026
			Taps Flg

FLOW DATA						TUBING DATA		CASING DATA		Dur. c Fl	
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							3050				72
1.	4.026 X 1.500			400	5	88	2782				1 h
2.	4.026 X 1.500			400	9.5	85	2525				1 h
3.	4.026 X 1.500			400	19	87	2318				1 h
4.	4.026 X 1.500			410	40	88	2080				1 h
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 _{sp}	Rate of Flow Q, Mc/d
1	10.84	45.45	413.2	.9741	1.210	1.040	604
2	10.84	62.65	413.2	.9768	1.210	1.040	835
3	10.84	88.60	413.2	.9750	1.210	1.040	1178
4	10.84	130.11	423.2	.9741	1.210	1.040	1729
5							

NO.	P ₁	Temp. °R	T ₁	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	.62	548	1.42	.924	15.746	57 @ 60	.683	XXXXXX	669	385
2	.62	545	1.42	.924				Mix	664	444
3	.62	547	1.42	.924						
4	.63	548	1.42	.923						
5										

NO.	P ₁ ²	P _w ²	P _w ²	P _w ² - P _w ²
1	2796.3	7802.5	1580.7	
2	2539.8	6450.6	2932.6	
3	2334.6	5450.4	3932.8	
4	2100.3	4411.3	4971.9	
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.887$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.263$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.887$

Absolute Open Flow	3.263	Mold @ 15.025	Angle of Slope	45	Slope, n	1.00
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Remarks: 11.5 bbls of condensate made during test

Approved By Division	Conducted By: Duke Services, Inc.	Calculated By: R. Reston	Checked By:
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Company: Exxon Co. U.S.A.
 Lease: Mary Federal # 5
 Date: 6/24/86
 County: Eddy

