

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator OXY USA, INC.					Lease or Unit Name Thor Federal Com.				
Test Type ☒ Initial ☐ Annual ☐ Special					Test Date 7-May-1998		Well No. 1		
Completion Date 13-Apr-1998		Total Depth 9411		Plug Back TD		Elevation 3480		Unit Ltr - Sec - TWP - Rge. Sec 15 17S 27 E	
Csg. Size 4.500	Wt. 11.600	d 4.000	Set At	Perforation: From 9160 To 9172				County Eddy	
Tbg. Size 2.375	Wt. 4.700	d 1.995	Set At 9117	Perforation: From To				Pool Turkey Track	
Type Well-Single-Bradenhead-G.G. or G.O. Multiple Single Gas well					Packer Set At 9089		Formation		
Producing Thru tubing		Reservoir Temp.F 157		Mean Annual Temp.F 60		Baro. Pressure 13.20		Connection Nat. Gas Pipe Line	
L 9166	H 9166	Gg .644	% CO ₂ .44	% N ₂ .30	% H ₂ S	Prover		Meter Run 3.068	Taps Flange

FLOW DATA					TUBING DATA		CASING DATA		SIP/FLOW DURATION (HRS.)
NO.	(PROVER) LINE SIZE x ORIFICE SIZE	PRESS. PSIG	DIFF. h _w	TEMP. F	PRESS. PSIG	TEMP. F	PRESS. PSIG	TEMP. F	
SHUT-IN PRESSURE					2600	70	3412	157	110
1.	3.07 x 1.25	701.00	14.90	92	2275	70	3017	155	0.8
2.	3.07 x 1.25	702.00	22.80	108	2190	70	2902	154	0.8
3.	3.07 x 1.25	704.00	42.50	82	2000	70	2648	151	0.8
4.	3.07 x 1.25	707.30	75.00	74	1750	70	2294	143	0.8

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.	7.771	103.158	714.2	.9702	1.2461	1.0559	1023.4
2.	7.771	127.697	715.2	.9568	1.2461	1.0502	1242.5
3.	7.771	174.588	717.2	.9787	1.2461	1.0601	1754.1
4.	7.771	232.460	720.5	.9862	1.2461	1.0642	2362.4

NO.	P _r	TEMP.	T _r	Z
1.	1.064	552	1.498	.8970
2.	1.065	568	1.540	.9067
3.	1.068	542	1.472	.8898
4.	1.073	534	1.450	.8830

Gas-Liquid Hydrocarbon Ratio	44.2	Mcf/bbl
API Gravity of Liquid Hydrocarbons	59.000	Deg.
Specific Gravity Separator Gas	.644	
Specific Gravity Flowing Fluid	.708	
Critical Pressure	671 PSIA	668 PSIA
Critical Temperature	368 R	389 R

P_C = 3425.2 P_C² = 11732.0

NO.	P _w	P _w ²	P _C ² - P _w ²
1.	3030.2	9182	2549.883
2.	2915.2	8498	3233.604
3.	2661.2	7081	4650.010
4.	2307.2	5323	6408.823

$$(1) \frac{P_C^2}{P_C^2 - P_W^2} = \frac{1.831}{\left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n} = \frac{1.739}{\left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n} = \frac{4108}{\left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n}$$

AOF = Q

Absolute Open Flow 4108 Mcfd @ 15.025		Angle of Slope - 47.5		Slope, n .915	
Remarks Calculated from bottomhole pressure					
Approved By Division:		Conducted By: Larry Davis <i>Larry Davis</i>		Calculated By: BPT System/SCHLUMBERGER	
				Checked By: D.Sykes-Bookhammer <i>D.Sykes-Bookhammer</i>	