NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 9/22/86	
Company: North American Royalties		Connection			
Pool: Wildcat		Formation: Atoka		Unit	
Completion Date	Total Depth: 11976	Plug Back T.D.: 11866		Elevation: 3883	Farm or Lease Name: Hudgens
Csg. Size: 5.5 / Wt. / d / Set At: 11976		Perforations: From 11774 To 11799			Well No.: 1
Tbg. Size: 2.375 / Wt.: 4.60 / d: 1.995 / Set At: 11500		Perforations: From To			Unit / Sec. 9 / Twp. 11-16-36 / Rge.
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 11499		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 177 @ 11500	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
11500	11500	0.791	0.5	2.5	0.0		3.068	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	3.068	1.25				2644	80			SI 43 hrs
1.	3.068	1.25	70	99	66	1180	81			3.25
2.	3.068	1.25	58	79	62	1422	84			1.5
3.	3.068	1.25	42	52	53	1811	81			1.5
4.	3.068	1.25	20	15	45	2290	78			1.75
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	7.577	90.76	83.2	0.9943	1.1244	1.0112	777.44
2	7.577	75.00	71.2	0.9981	1.1244	1.0096	643.88
3	7.577	53.58	55.2	1.0068	1.1244	1.0061	462.39
4	7.577	22.32	33.2	1.0147	1.1244	1.0045	193.82
5							

NO.	P_r	Temp. °R	T_r	Z
1	0.13	541	1.31	0.982
2.	0.11	544	1.32	0.984
3.	0.08	541	1.31	0.991
4.	0.05	538	1.30	0.999
5				

Gas Liquid Hydrocarbon Ratio 4713.82 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 74.1 Deg.
Specific Gravity Separator Gas 0.791 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 1.2147
Critical Pressure 664 P.S.I.A. ____ P.S.I.A.
Critical Temperature 413 R ____ R

P_c 2373 P_c^2 5631.1

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	1392.4	1176	1382.98	4248.2
2	2022.1	1370	1876.90	3754.2
3	3279.7	1697	2879.81	2751.3
4	5244.1	2088	4359.74	1271.4
5				

(1) $\frac{P_c^2}{P_t^2 - P_w^2} = 1.3255$ (2) $\left[\frac{P_t^2}{P_t^2 - P_w^2}\right]^n = 1.3255$

AOF = Q $\left[\frac{P_t^2}{P_t^2 - P_w^2}\right]^n = 1030.5$

Absolute Open Flow 1030.5 Mcfd @ 15.025 Angle of Slope @ 45° Slope, n 1.000

Remarks: The original slope of the data points was 41.5°. To determine the AOF, a line with a slope of 45° was drawn through the highest rate of flow.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

NEW MEXICO OIL CONSERVATION COMMISSION

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Pool: Wildcat		Formation: Atoka			Unit
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Tbg. Size: 2.375 / Wt.: 4.60 / d: 1.995 / Set At: 11500			Perforations: From To		Unit / Sec. / Twp. / Rge.
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 11499		County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 177 @ 11500		Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2	State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
11500	11500	0.791	0.5	2.5	0.0		3.068	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	3.068	1.25				2644	80			SI 43 hrs
1.	3.068	1.25	70	99	66	1180	81			3.25
2.	3.068	1.25	58	79	62	1422	84			1.5
3.	3.068	1.25	42	52	53	1811	81			1.5
4.	3.068	1.25	20	15	45	2290	78			1.75
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	7.577	90.76	83.2	0.9943	1.1244	1.0112	777.44
2	7.577	75.00	71.2	0.9981	1.1244	1.0096	643.88
3	7.577	53.58	55.2	1.0068	1.1244	1.0061	462.39
4	7.577	22.32	33.2	1.0147	1.1244	1.0045	193.82
5							

NO.	P_t	Temp. °R	T_f	Z
1	0.13	541	1.31	0.982
2.	0.11	544	1.32	0.984
3.	0.08	541	1.31	0.991
4	0.05	538	1.30	0.999
5				

Gas Liquid Hydrocarbon Ratio: 4713.82 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 74.1 Deg.
Specific Gravity Separator Gas: 0.791 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX 1.2147
Critical Pressure: 664 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 413 R ____ R

P_c 2373 P_c^2 5631.1

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	1392.4	1176	1382.98	4248.2
2	2022.1	1370	1876.90	3754.2
3	3279.7	1697	2879.81	2751.3
4	5244.1	2088	4359.74	1271.4
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(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.3255$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.3255$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1030.5$

Absolute Open Flow: 1030.5 Mcfd @ 15.025 Angle of Slope @: 45° Slope, n: 1.000

Remarks: The original slope of the data points was 41.5°. To determine the AOF, a line with a slope of 45° was drawn through the highest rate of flow.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Arc Pressure Data, Inc	Rod Dodson	

NEW MEXICO OIL CONSERVATION COMMISSION

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Tbg. Size: 2.375 / Wt.: 4.60 / d: 1.995 / Set At: 11500		Perforations: From To			Unit / Sec. / Twp. / Rge.
Type Well – Single – Bradenhead – G.C. or G.O. Multiple: Single		Packer Set At: 11499			County: Lea
Producing Thru: Tubing	Reservoir Temp. °F: 177 @ 11500	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
11500	11500	0.791	0.5	2.5	0.0		3.068	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	3.068	1.25				2644	80			SI 43 hrs
1.	3.068	1.25	70	99	66	1180	81			3.25
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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
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Specific Gravity Flowing Fluid XXXXX 1.2147
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		[illegible]	