

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

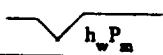
Form C-122
Revised 4-1-91

Submit in duplicate to
appropriate district office
See Rule 401 & Rule 1122

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Marathon Oil Company						Lease or Unit Name Indian Hills Unit					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 12-05-00		Well No. 26			
Completion Date		Total Depth 10,527'		Plug Back TD 10,286'		Elevation		Unit Ltr. - Sec. - TWP - Rge. 20-21-24			
Csg. Size 5"	Wt. 15#	d	Set At	Perforations: From: 10,125' To: 10,284'				County Eddy			
Tbg. Size 2-7/8"	Wt. 6.5	d 2.441	Set At	Perforations: From: To:				Pool Indian Basin Morrow			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 9,974		Formation Morrow			
Producing Thru Tbg		Reservoir Temp. °F		Mean Annual Temp. °F 60°		Baro. Press - P _a 13.2		Connection 11-23-06			
L 9,974	H 9,974	G _g .581	% CO ₂ .749	% N ₂ .849	% H ₂ S	Prover		Meter Run 4:026		Taps FLG	

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.	
SI							1,995		PKR	
1.	4 X 2.000					84	1,872		PKR	
2.	4 X 2.000					88	1,713		PKR	
3.	4 X 2.000					80	1,290		PKR	
4.	4 X 2.000					86	890		PKR	
5.										

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)		Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.							245
2.							895
3.		Measured by Total Flow Meter					1,793
4.							2,404
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>Dry Gas</u> Mcf/bbl.
1.					A.P. I. Gravity of Liquid Hydrocarbons <u>Dry</u> Deg.
2.		N/A			Specific Gravity Separator Gas <u>.581</u> XXXXXXXXXX
3.					Specific Gravity Flowing Fluid XXXXXX
4.					Critical Pressure <u>672</u> P.S.I.A. P.S.I.A.
5.					Critical Temperature <u>350</u> R R

P_c 2008.2 P_c² 4032.9

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²
1.		1,885.4	3,554.6	478.3
2.		1,728.5	2,987.5	1,045.4
3.		1,315.3	1,730.1	2,302.8
4.		935.6	875.3	3,175.6
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.277$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.277$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.070$

Absolute Open Flow <u>3,070</u> Mcfd @ 15.025	Angle of Slope Θ <u>45</u>	Slope, n <u>1.000</u>
---	-----------------------------------	-----------------------

Remarks: No Fluid Produced

Approved By Division	Conducted By: Metering & Testing	Calculated By: BM	Checked By: BM
----------------------	-------------------------------------	----------------------	-------------------

200

2000
2000
2000
2000

LEASE : INDIAN HILLS WELL NO. : 26 Pc = 2008.2 Pc2 = 4032.9 *
 SECTION : 20 TOWNSHIP : 21
 UNIT : L : 9974 H : 9974 L/H : 1 G/GMIX : 0.581
 %CO2 : 0.749 %N2 : 0.849 H2S : DATE : 12-5-00
 d : 2.441 Fr : 0.010763 GH : 5794.9 RANGE : 24

VOL 1 : 245 PSIA 1 : 1885.2
 VOL 2 : 895 PSIA 2 : 1726.2
 VOL 3 : 1793 PSIA 3 : 1303.2
 VOL 4 : 2404 PSIA 4 : 903.2

RESV.TEMP 156.3

SHUT-IN PR= 2008.2

PCR : 672
 TCR : 350

Pt2 = 3554.0 Pw = 1885.4 *
 2979.8 1728.4 *
 1698.3 1315.3 *
 815.8 935.6 *

Pc2-Pw2= 478.3 Pw2 = 3554.6 *
 1045.4 2987.5 *
 2302.8 1730.1 *
 3157.6 875.3 *

n = 1.000 ✓

Pc2/(Pc2-Pw2) = 8.431
 3.858
 1.751
 1.277 ✓

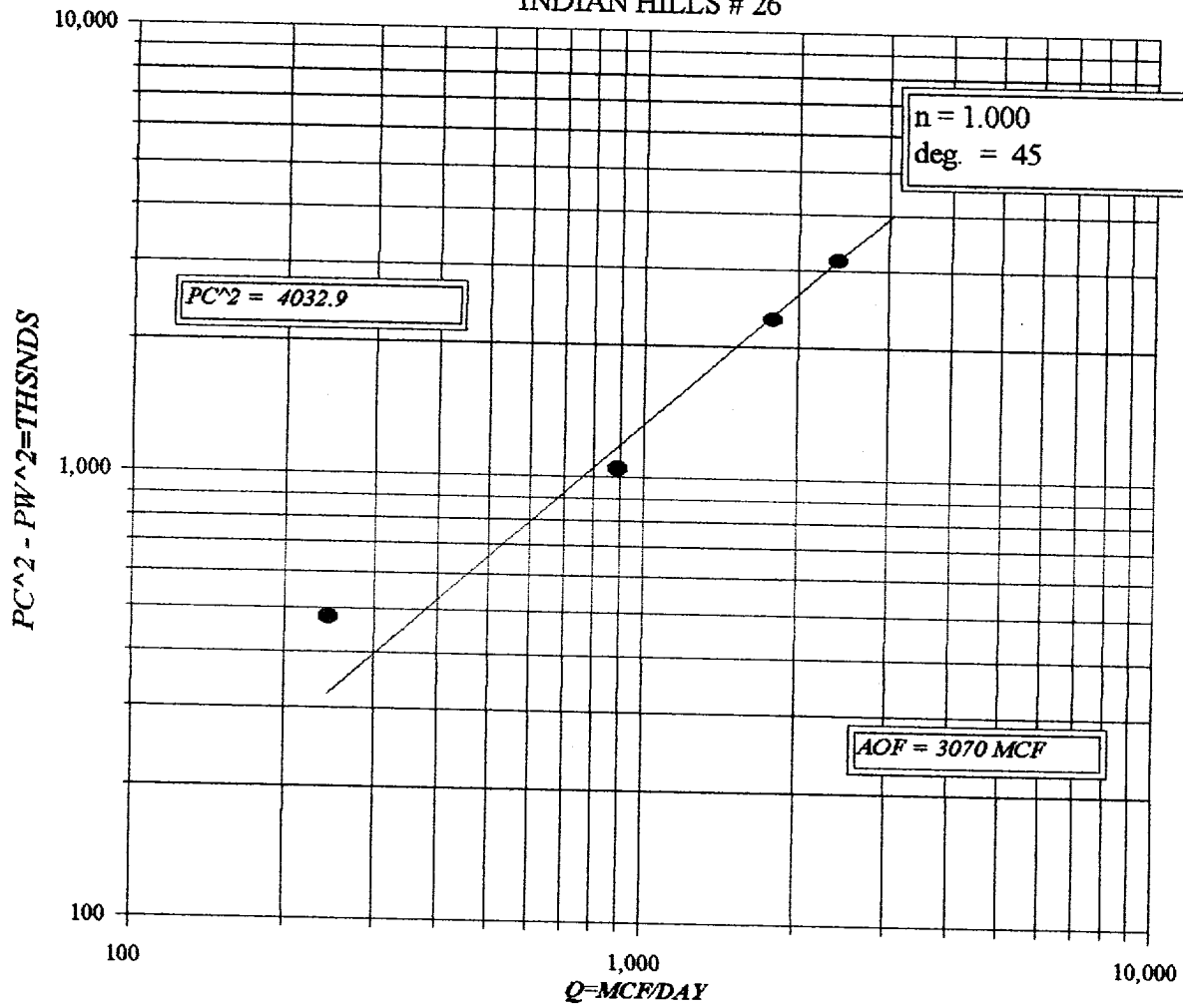
[Pc2/Pc2-Pw2]n = 8.431
 3.858
 1.751
 1.277 ✓

AOF= Q 2.066
 3.453
 3.140
 3.070 ✓

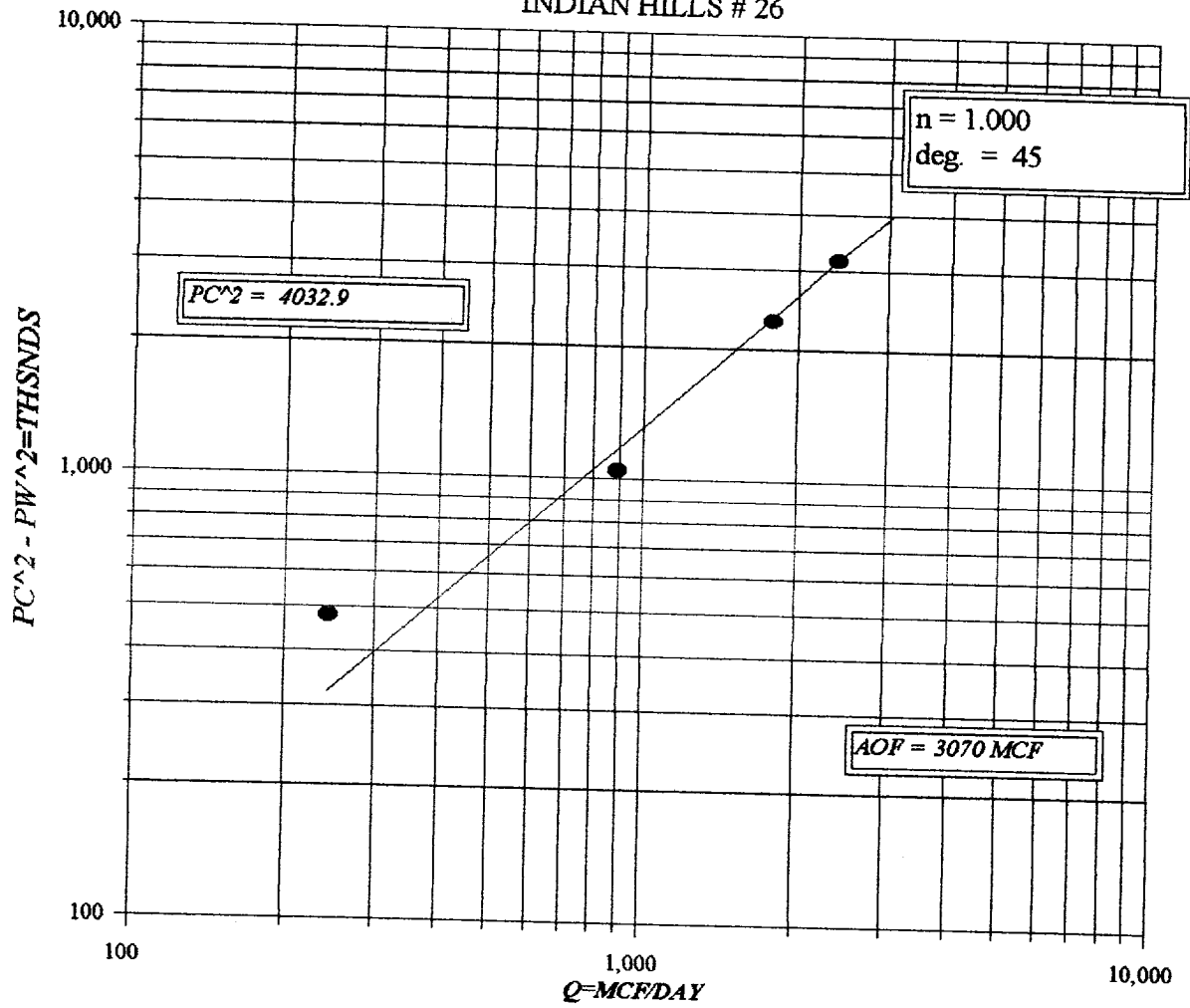
LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.245	0.245	0.895	0.895	1.793	1.793	2.404	2.404
2 TW	534	534	534	534	534	534	534	534
3 Ts	616.3	616.3	616.3	616.3	616.3	616.3	616.3	616.3
4 T	575.2	575.2	575.2	575.2	575.2	575.2	575.2	575.2
PR (est)	2.81		2.57		1.94		1.34	
5 Z(est)	0.828	0.823	0.834	0.826	0.856	0.846	0.887	0.876
6 TZ	476.2	473.1	479.4	475.2	492.4	486.5	509.9	503.9
7 GH/TZ	12.169	12.249	12.088	12.195	11.768	11.911	11.365	11.501
8 eS	1.578	1.583	1.573	1.580	1.555	1.563	1.531	1.539
9 l-e-S	0.366	0.368	0.364	0.367	0.357	0.360	0.347	0.350
10 Pt	1885.2	1885.2	1726.2	1726.2	1303.2	1303.2	903.2	903.2
11 Pt2 /1000	3554.0	3554.0	2979.8	2979.8	1698.3	1698.3	815.8	815.8
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763
13 Fc=FrTZ	5.125	5.092	5.160	5.114	5.300	5.236	5.488	5.423
14 FcQm	1.26	1.25	4.62	4.58	9.50	9.39	13.19	13.04
15 L/H(FcQm)	1.6	1.6	21.3	21.0	90.3	88.1	174.1	170.0
16 Fw	0.577732	0.573194	7.773007	7.690150	32.22170	31.75457	60.40088	59.544038
17 Pw2	3554.6	3554.6	2987.5	2987.5	1730.6	1730.1	876.2	875.3
18 Ps2	5610.2	5626.9	4700.8	4719.7	2690.5	2704.3	1341.8	1347.3
19 Ps	2368.6	2372.1	2168.1	2172.5	1640.3	1644.5	1158.3	1160.7
20 P	2126.9	2128.7	1947.2	1949.3	1471.7	1473.8	1030.8	1032.0
21 Pr	3.17	3.17	2.90	2.90	2.19	2.19	1.53	1.54
22 Tr	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64
23 Z	0.823	0.823	0.826	0.826	0.846	0.846	0.876	0.876

FORM C122-D

MARATHON OIL
INDIAN HILLS # 26



MARATHON OIL
INDIAN HILLS # 26



PHOne NO. (505)-397-1631
Fax. No. (505)-397-0990

Meter Run Size:
Office Meter Range:
Tbg. Size:
Csg Size:
Perfs:
Packer Depth:
TD / Pbitd:

4.026"	1500 x 140	Total Flow
278	6.5	18
5"	15	18
10125	10284	
9974		
10286	10327	

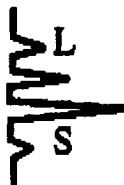
Running Totals:

Oil:

Water:

sec. 20 T-21S. R24E

Date	Time	Choke	Tbg PX	Csg PX	Gas Temp	Oil Meter	BBL Oil Per Hr	Total Oil	Water Meter	BBL H ₂ O Per Hr	Total Water	Diff Press	Static Press	Gas Rate	Comments
12-5	11:00	5/16"	1995			Start Test		Opened Well							5% 1895
	11:15		1880		76									236	10% 1795
	11:30		1871		96.4									286	15% 1695
	11:45		1874		84									310	20% 1595
	12:00		1872		84									345	on unit
	12:15	10/16"	1737		84									1005	1st hour 210 Pressure
	12:30		1713		84									946	2nd hour 219 Pressure
	12:45		1713		84									920	3rd hour 230
	1:00		1713		88									895	4th hour 230
	1:15	15/16"	1325		77									1956	2" Plate
	1:30		1314		78									1859	
	1:45		1296		80									1836	
	2:00		1290		80									1793	
	2:15	20/16"	954		78									2570	
	2:30		905		81									2443	
	2:45		895		86									2404	
	3:00		890		86									2404	
								No Fluid							



Laboratory Services, Inc.

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Metering & Testing Services Inc.
Attention: Mr. Tom Duncan
2807 West County road
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: Indian Hills #26
COMPANY: Marathon Oil Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 12/5/00 11:30 am
ANALYSIS DATE: 12/7/00
PRESSURE - PSIG 210
SAMPLE TEMP. °F 76
ATMOS. TEMP. °F 58

GAS (XX) LIQUID ()
SAMPLED BY: Floyd Davis
ANALYSIS BY: Vickie Walker

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.849	
Carbon Dioxide (CO2)	0.749	
Methane (C1)	95.848	
Ethane (C2)	2.456	0.655
Propane (C3)	0.483	0.183
I-Butane (IC4)	0.060	0.020
N-Butane (NC4)	0.060	0.019
I-Pentane (IC5)	0.000	0.000
N-Pentane (NC5)	0.000	0.000
Hexane Plus (C6+)	0.000	0.000
	100.000	0.827

BTU/CU.FT. - DRY 1028
AT 14.650 DRY 1024
AT 14.650 WET 1006
AT 14.73 DRY 1030
AT 14.73 WET 1012

MOLECULAR WT. 16.8219

SPECIFIC GRAVITY -
CALCULATED 0.581
MEASURED