

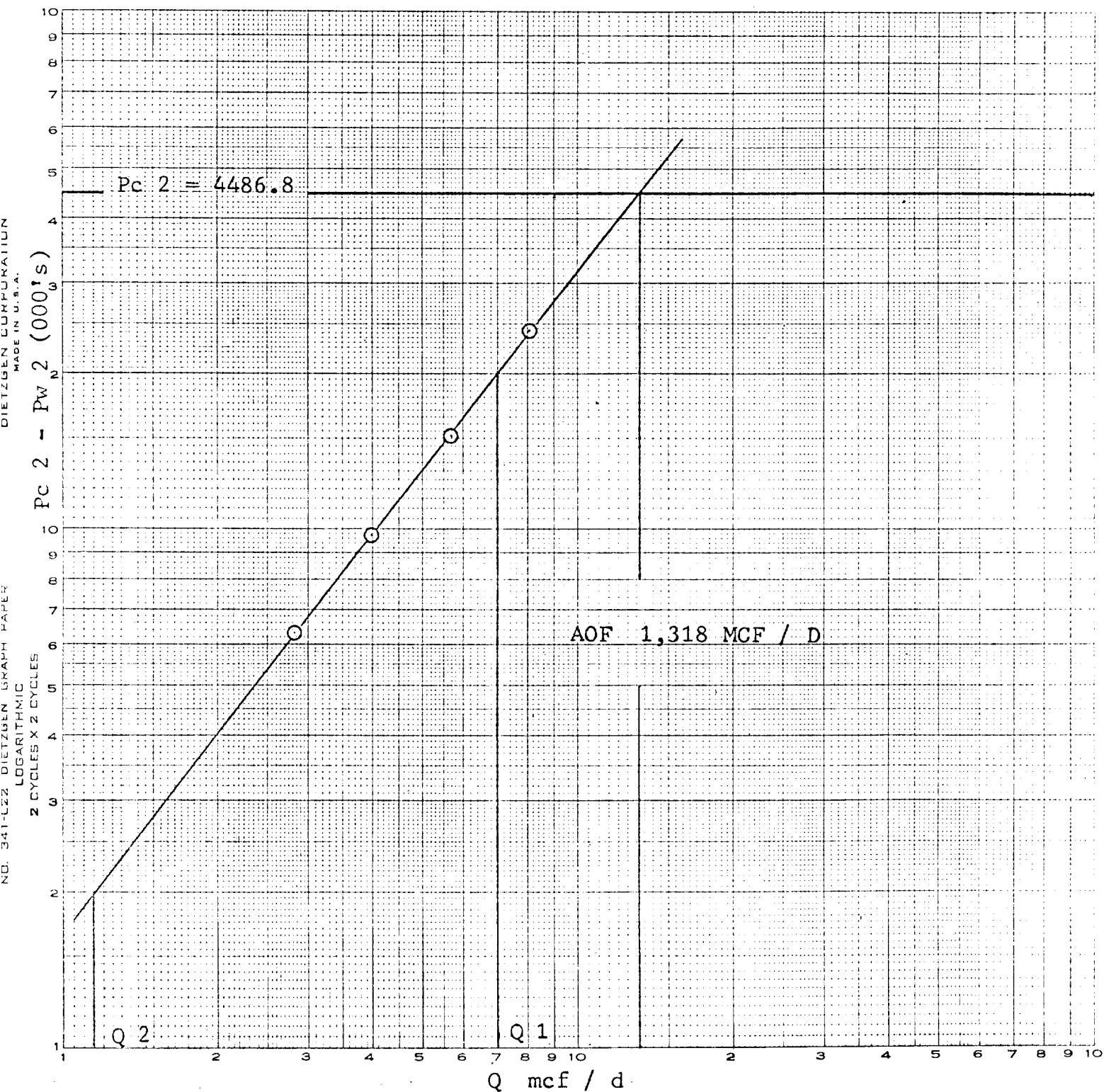
NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

File -
122 Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special			Test Date 10-19-79		OCT 24 1979	
Company MESA PETROLEUM CORP.			Connection AIR		Well O.C.C.	
Post <i>Runyan Ranch</i> WILCOX <i>WILCOX</i>			Formation MORROW		Well ARTESIA, OFFICE	
Completion Date 9-12-79		Total Length 7790 7796		Plug Hole To 7704		Elevation 4081.2 gr.
Casing Size 5 1/2		Set At 15/17		Perforations: From 7682 To 7693		Well No. # 2
Tub. Size 2 3/8		Set At J- 55		Perforations: From To		Unit H 18 19 23
Type well - Single - Provenhead - G.G. or G.O. Multiple SINGLE				Packer Set At 7614		County EDDY
Producing Thru TBG.		Reservoir Temp. °F 150° 7614		Mean Annual Temp. °F		State NEW MEXICO
L 7614	R 7614	Gg .602	% CO ₂ .67	% H ₂ 1.06	% H ₂ S 0	Prevor 4
FLOW DATA			TUBING DATA		CASING DATA	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F
51						2105
1.	4 X 1.375			570	1.0	100
2.	4 X 1.375			577	2.0	107
3.	4 X 1.375			590	4.0	110
4.	4 X 1.375			597	8.0	112
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}
1	9.071	24.15	583.2	.9636	1.289	1.040
2	9.071	34.36	590.2	.9577	1.289	1.038
3	9.071	49.12	603.2	.9551	1.289	1.038
4	9.071	69.87	610.2	.9535	1.289	1.037
5						
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio DRY Mcf/whl.	
1	.87	560	1.56	.925	A.P.I. Gravity of Liquid Hydrocarbons	
2	.88	567	1.58	.929	Specific Gravity Separator Gas	
3	.90	570	1.59	.929	Specific Gravity Flowing Fluid	
4	.91	572	1.60	.930	Critical Pressure 671 P.S.I.A.	
5					Critical Temperature 358 °R	
P _r 2118.2 P _w 4486.8				$(1) \frac{P_r^2}{P_r^2 - P_w^2} = 1.867$ $(2) \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.631$		
NO.	P _r	P _w	P _w ²	P _r ² - P _w ²	$AOF = Q \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.318$	
1		1963.7	3856.0	630.8		
2		1874.2	3512.5	974.3		
3		1723.3	2969.9	1516.9		
4		1443.5	2083.6	2403.2		
5						
Absolute Open Flow 1,318 Mcf/d @ 15.025				Angle of Slope 52°		Slope, n .784
Remarks:						
Approved by Commission:		Conducted By: JOHN DAVIS		Calculated By: LARRY DAVIS		Checked By:

1 .SE : RUNYAN FEDERAL C. M.
 WELL NO. : # 2
 UNIT : H / SEC 18/ TWP 19/ RGE. 23
 COUNTY : EDDY
 STATE : NEW MEXICO
 DATE : OCTOBER 19, 1979



Q 1 = 700; LOG OF Q 1 = 2.845098

Q 2 = 115; LOG OF Q 2 = 2.060698

N = .784

Analysis No.

44134

Sample From

RUNYAN FEDERAL COM. # 2

Owner

MESA PETROLEUM CORP.

State

N.M.

County

EDDY

Location or Field

WILDCAT

Formation

MORROW

Depth

From

To

Date Secured

10-19-79

Secured By

SWARTZ

Department

Date Run

10-21-79

Run By

VENABLE

Checked By

Source Press.

Bomb Press.

Source Temp.

Atmos. Temp.

SULPHUR - GRS.
 PER 100 cu. Ft.

Hydrogen Sulphide

0

Mercaptan

0

Total

0.0

Sweet

COMPONENT	AREA	FACTOR	CORRECTED AREA	MOLE %	GPM	BTU	Sp. Gr.
Helium HE_2							
Hydrogen Sulphide H_2S							
Carbon Dioxide CO_2	4.8945	1404	0.69	0.67			0.010
Nitrogen N_2	10.4841	1040	1.09	1.06			0.010
Methane C_1	521.7098	1820	94.95	92.47		935.80	0.512
Ethane C_2	34.7722	1220	4.24	4.13		73.22	0.043
Propane C_3	11.1844	0983	1.10	1.07	0.294	27.00	0.016
Iso Butane IC_4	2.3623	0890	0.21	0.21	0.069	6.85	0.004
Normal Butane C_4	2.6771	0877	0.23	0.22	0.069	7.19	0.004
Iso Pentane IC_5	1.1085	0872	0.10	0.10	0.037	4.01	0.002
Normal Pentane C_5	0.6891	0883	0.06	0.06	0.022	2.41	0.001
Hexane C_6	0.0759		0.01	0.01	0.004	0.48	-----
Heptane C_7							
TOTAL			102.68	100.00	0.495	1056.96	0.602

Meter No.

Remarks:

sec 18

twp 19

rge 23

footage unit H

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form O-122D
Adapted 9-1-65

COMPANY MESA PETROLEUM CORP. LEASE RUNYAN FEDERAL COM. WELL NO. # 2 DATE 10-19-79

LOCATION: Unit H Section 18 Township 19 Range 23

L 7614 H 7614 L/H 1.000 G .602 % CO₂ .67 % N₂ 1.06 % H₂S 0

d 1.995 F_r .018231 CH 4584 P_{cr} 671 T_{cr} 358

1 st 2 nd 3 rd 4 th

LINE	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd		
1 Q _m	.283	.283	.399	.399	.569	.569	.808	.808		
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534		
3 T _s (B.H. °R)	610	610	610	610	610	610	610	610		
4 T = ($\frac{T_w + T_s}{2}$)	572	572	572	572	572	572	572	572		
5 Z (Est.)	.827	.821	.830	.823	.838	.830	.854	.846		
6 T _Z	473.0	469.6	474.8	470.8	479.3	474.8	488.5	483.9		
7 GH/T _Z	9.690	9.761	9.655	9.738	9.563	9.655	9.384	9.473		
8 e ^s (Table XIV)	1.438	1.442	1.436	1.441	1.431	1.436	1.422	1.427		
9 1-e ^s (Table XIV)	.305	.307	.304	.306	.301	.304	.297	.299		
10 P _t	1963.2	1963.2	1873.2	1873.2	1721.2	1721.2	1438.2	1438.2		
11 P _t ² /1000	3854.2	3854.2	3508.9	3508.9	2962.5	2962.5	2068.4	2068.4		
12 F _t (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231		
13 F _c = F _t T _Z	8.624	8.561	8.655	8.582	8.739	8.655	8.906	8.822		
14 F _c Q _m	2.441	2.423	3.453	3.424	4.972	4.925	7.196	7.128		
15 L/H (F _c Q _m) ²	5.957	5.870	11.927	11.726	24.724	24.255	51.779	50.813		
16 F _w =L/H (F _c Q _m) ² (1-e ^{-s})	1.815	1.799	3.623	3.587	7.451	7.368	15.360	15.193		
17 P _w ² = P _t ² + F _w	3856.0	3856.0	3512.5	3512.5	2970.0	2969.9	2083.8	2083.6		
18 P _s ² = e ^s P _w ²	5545.6	5560.4	5045.0	5060.6	4251.1	4265.7	2962.7	2972.3		
19 P _s	2354.9	2358.0	2246.1	2249.6	2061.8	2065.4	1721.2	1724.0		
20 P = ($\frac{P_t + P_s}{2}$)	2159.1	2160.6	2059.7	2061.4	1891.5	1893.3	1579.7	1581.1		
21 P _t = (P/P _{cr})	3.22	3.22	3.07	3.07	2.82	2.82	2.35	2.36		
22 T _r = (T/T _{cr})	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60		
23 Z (Table XI)	.821	.821	.823	.823	.830	.830	.846	.845		