

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

OIL CONSERVATION DIVISION

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

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator MURCHISON OIL AND GAS						Lease or Unit Name JACKSON					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8-7-97		Well No. 5			
Completion Date 7-29-97		Total Depth ?		Plug Back TD 13870		Elevation		Unit Ltr. - Sec. - TWP - Rge. 16 24-5 33-E			
Csg. Size 4 1/2"		Wt. 9.5#		d 4.090		Set At 12.217		Perforations:		County	
7"		29#		6.184		13870		From: 13144 To: 13787		Lea	
Tbg. Size 2 7/8		Wt. 6.5#		d 2.441		Set At 12150		Perforations:		Pool	
2 7/8		6.5#		2.441		12150		From:		To:	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 12150		Formation Wolfcamp			
Producing Thru TBG		Reservoir Temp. °F		Mean Annual Temp. °F 60		Baro. Press - P _a 13.2		Connection None			
L 13144	H 13144	Gg .713	% CO ₂ .53	% N ₂ .88	% H ₂ S 0	Prover 0	Meter Run 4.026		Taps F7G		

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	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						4857		PKR		
1.	4.026 X 1.500		540	2"	100°	4739				60min
2.	4.026 X 1.500		710	20"	95°	4389				60 min
3.	4.026 X 1.500		730	26"	78°	3889				60 min
4.	4.026 X 1.500		730	50"	70°	3588				60 min
5.										60 min

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, F _{pv}	Rate of Flow Q, Mcfd
1.	10.84	33.26	553.2	.9636	1.194	1.054	437
2.	10.84	85.04	723.2	.9680	1.194	1.052	1120
3.	10.84	139.00	743.2	.9831	1.194	1.059	1873
4.	10.84	192.76	743.2	.9905	1.194	1.059	2616
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	.83	560	1.44	.901	5.859	
2.	.82	555	1.43	.903	56.8	Deg.
3.	.80	538	1.38	.892	Specific Gravity Separator Gas 1.149	XXXXXXXXXX
4.	.80	538	1.38	.892	Specific Gravity Flowing Fluid N/A	XXXXXX N/A
5.					Critical Pressure 677 P.S.I.A.	655 P.S.I.A.
					Critical Temperature 388 R	520 R

P_c **5669.2** - P_c **32139.8**

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²
1.		5592.4	31274.9	864.9
2.		5326.0	28366.2	3773.6
3.		4993.6	24936.0	7203.8
4.		4614.4	21292.6	10847.2
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.96$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.10$

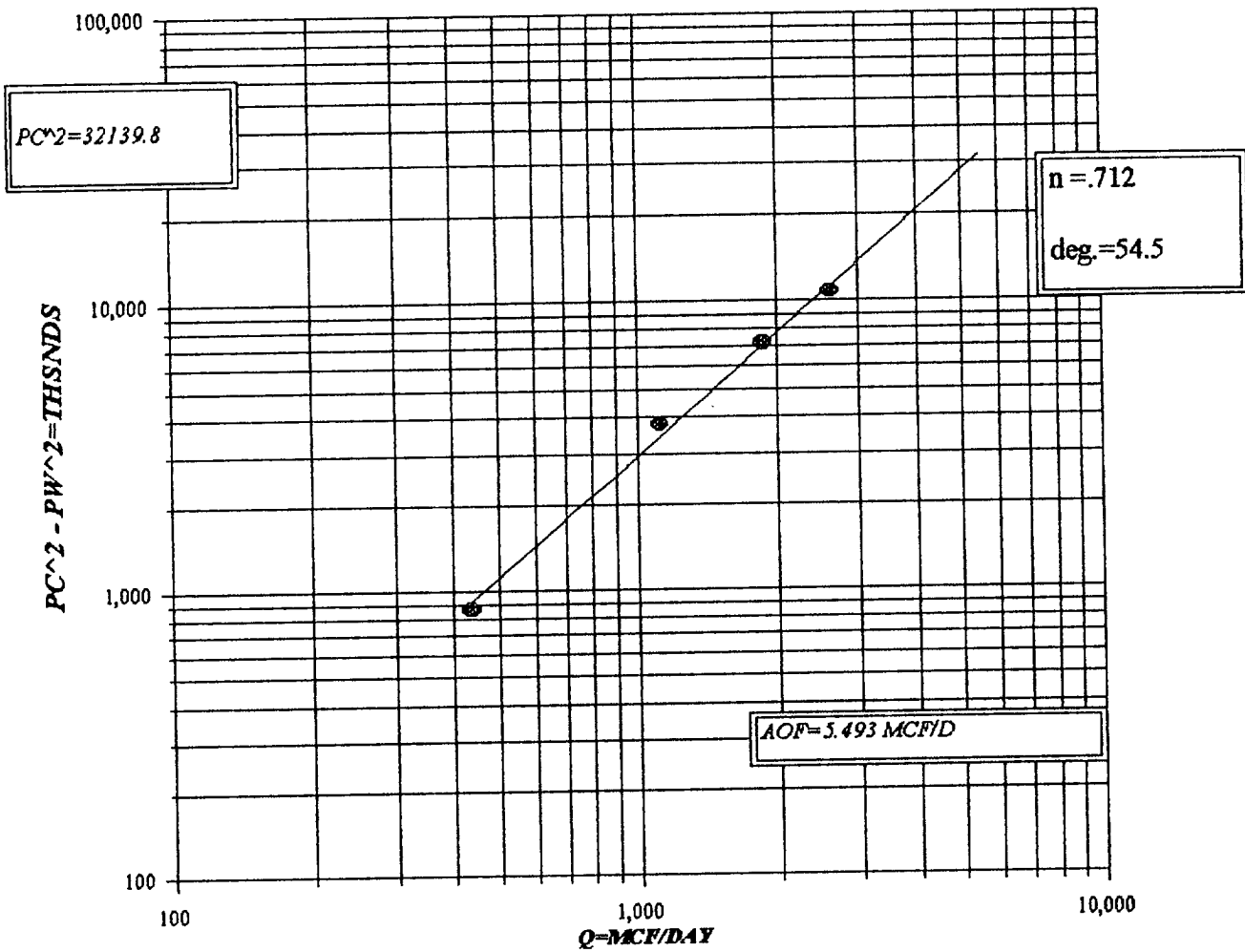
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.493$

Absolute Open Flow 5.493 Mcfd @ 15.025	Angle of Slope Θ 54.5	Slope, n .712
---	-------------------------------------	----------------------

Remarks: ***Well made 43 BBLS of condensate @ 55° API gravity**
***Calculated from known bottom hole pressures**

Approved By Division	Conducted By: Pro Well Testing	Calculated By: M. B.	Checked By: B. M.
----------------------	---------------------------------------	-----------------------------	--------------------------

MURCHISON OIL & GAS
JACKSON #5



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (P_c or P_w)
FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

FORM C-122F

COMPANY MURCHISON

LEASE : JACKSON

WELL NO. :

5

DATE 8/7/97

UNIT

SECTION : 16

TWNSHP : 24

RANGE : 33

L

13144

H : 13144

L/H : 1

G/GMIX : 0.7130

CO2 : 0.53

N2 : 0.88

H2S :

GH : 9371.7

PCR : 655

TCR : 520

LINE		1	2	3	4	5	6	7	8
1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	665.4	665.4	665.4	665.4	665.4	665.4	665.4	665.4
3	$T = (T_w + T_s / 2)$	599.7	599.7	599.7	599.7	599.7	599.7	599.7	599.7
4	Z (EST.)	1.343	1.154	1.214	1.109	1.165	1.059	1.107	1.002
5	TZ	805	692	728	665	699	635	664	601
6	GH/TZ	11.639	13.546	12.869	14.091	13.410	14.752	14.111	15.600
7	eS(TABLE XIV)	1.547	1.662	1.620	1.696	1.653	1.739	1.697	1.795
8	P_f or P_s	7209.5	7209.5	6936.5	6936.5	6584.8	6584.8	6182.2	6182.2
9	P_{f2} or P_{s2}	51976.9	51976.9	48115.0	48115.0	43359.6	43359.6	38219.6	38219.6
10	$P_{c2} = P_f / eS$ or $P_{w2} = P_{s2} / eS$	33593.5	31275.2	29695.4	28366.1	26223.0	24936.1	22515.5	21292.5
11	P_c or P_w	5796	5592	5449	5326	5121	4994	4745	4614
12	$P = (P_w + P_s / 2)$ or $(P_c + P_f / 2)$	6503	6401	6193	6131	5853	5789	5464	5398
13	$P_r = (P / P_{cr})$	9.93	9.77	9.45	9.36	8.94	8.84	8.34	8.24
14	$T_r(T / T_{cr})$	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
15	Z (TABLE XI)	1.154	1.139	1.109	1.100	1.059	1.050	1.002	0.992

PW 1 : 5592.4 PW 2 : 5326.0 PW 3 : 4993.6 PW 4 : 4614.4

NEW MEXICO G.O.R./G. MIX

NO. OF BBLs PRODUCED = 43.0

API GRAVITY @ 60 DEG. = 56.8

SPECIFIC GRAVITY OF GAS = 0.7130

XX
TOTAL GAS PRODUCED = 252

G.O.R. = 5.859

G.MIX = 1.149



Laboratory Services, Inc.

1331 Tasker Drive

Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Pro Well Testing & Wireline
Attention: Mr. Ray Ables
P. O. Box 791
Hobbs, New Mexico 88241

SAMPLE
IDENTIFICATION: Jackson #5
COMPANY: Murchison Oil & Gas
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 8/7/97
ANALYSIS DATE: 8/8/97
PRESSURE - PSIG 730
SAMPLE TEMP. °F 80
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Ray Ables
ANALYSIS BY: Vickie Walker

REMARKS: Sample taken @ the Meter Run.

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.88	
Carbon Dioxide (CO2)	0.53	
Methane (C1)	80.35	
Ethane (C2)	10.95	2.920
Propane (C3)	4.02	1.104
I-Butane (IC4)	0.62	0.202
N-Butane (NC4)	1.17	0.368
I-Pentane (IC5)	0.35	0.129
N-Pentane (NC5)	0.40	0.144
Hexane Plus (C6+)	0.73	0.301
	100.00	5.168

BTU/CU.FT. - DRY 1230
AT 14.650 DRY 1226
AT 14.650 WET 1204
AT 14.73 DRY 1232
AT 14.73 WET 1211

MOLECULAR WT. 20.6458

SPECIFIC GRAVITY -
CALCULATED 0.713
MEASURED

WELL TEST REPORT

COMPANY NAME : MURCHISON OIL & GAS
FIELD :
WELL NAME : JACKSON #5
LOCATION :
PERF. INTERVAL : 13144-13787
ELEVATION :
GAUGE DEPTH : 13037 feet
GAUGE MODEL : SS2500
GAUGE S/N : 70309

TEST TYPE : FOUR POINT FLOW TEST
COMMENTS :

TECHNICIAN : RANDOLPH
REPORT DATE : 08/07/97

By:

PRO WELL TESTING & WIRELINE
HOBBS, NEW MEXICO

WELL TEST DATA REPORT

Page: 1

COMPANY : MURCHISON OIL & GAS
 FIELD :
 WELL : JACKSON #5
 LOCATION :

TEST INT. : 13144-13787
 GAUGE DEPTH : 13037 feet
 GAUGE S/N : 70309
 START DATE: 08/07/97 (MM/DD/YY)
 START TIME: 13:00:00 (HH:MM:SS)

Day	Time HH:MM:SS	Delta Time Hours	Press PSIA	dp	Temp 'F	Record # in the DataFile
1	13:00:00	0.000	7290.7	0.0	181.1	1
	START RATE 1					
1	13:15:00	0.250	7241.9	-48.9	181.5	2
1	13:30:00	0.500	7225.4	-65.3	181.8	3
1	13:45:00	0.750	7216.2	-74.5	182.0	4
1	14:00:00	1.000	7209.5	-81.2	182.2	5
	START RATE 2					
1	14:15:00	1.250	7071.2	-219.5	183.2	6
1	14:30:00	1.500	7023.4	-267.3	184.1	7
1	14:45:00	1.750	6984.0	-306.8	184.4	8
1	15:00:00	2.000	6936.5	-354.3	184.6	9
	START RATE 3					
1	15:15:00	2.250	6751.9	-538.8	185.4	10
1	15:30:00	2.500	6690.7	-600.0	185.4	11
1	15:45:00	2.750	6631.2	-659.5	185.5	12
1	16:00:00	3.000	6584.8	-705.9	185.5	13
	START RATE 4					
1	16:15:00	3.250	6368.8	-922.0	185.6	14
1	16:30:00	3.500	6302.6	-988.1	185.7	15
1	16:45:00	3.750	6226.9	-1063.8	185.4	16
1	17:00:00	4.000	6182.2	-1108.5	185.6	17
END OF TEST						

PRO WELL TESTING & WIRELINE

WORK SHEET FOR CALCULATION OF WELL HEAD PRESSURE (Pc or Pw)

FORM C-122F

FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

COMPANY MURCHISON

LEASE : JACKSON

WELL NO. :

5

DATE 8/7/97

UNIT

SECTION : 16

TWNESH : 24

RANGE : 33

L

13144

H : 13144

L/H : 1

G/GMIX : 0.7130

CO2 : 0.53

N2 : 0.88

H2S :

GH : 9371.7

PCR : 655

TCR : 520

LINE

1

2

3

4

5

6

7

8

1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	665.4	665.4	665.4	665.4	665.4	665.4	665.4	665.4
3	T=(Tw+Ts/2)	599.7	599.7	599.7	599.7	599.7	599.7	599.7	599.7
4	Z (EST.)	1.354	1.165	ERR	ERR	ERR	ERR	ERR	ERR
5	TZ	812	699	ERR	ERR	ERR	ERR	ERR	ERR
6	GH/TZ	11.541	13.416	ERR	ERR	ERR	ERR	ERR	ERR
7	eS(TABLE XIV)	1.542	1.654	ERR	ERR	ERR	ERR	ERR	ERR
8	Pf or Ps	7290.7	7290.7	0	0	0	0	0	0
9	Pf2 or Ps2	53154.3	53154.3	0.0	0.0	0.0	0.0	0.0	0.0
10	Pc2=Pf/eS or Pw2=Ps2/eS	34481.1	32139.9	ERR	ERR	ERR	ERR	ERR	ERR

11	Pc or Pw	5872	5669	ERR	ERR	ERR	ERR	ERR	ERR
12	P=(Pw+Ps/2) or (Pc+Pf/2)	6581	6480	ERR	ERR	ERR	ERR	ERR	ERR
13	Pr=(P/Pcr)	10.05	9.89	ERR	ERR	ERR	ERR	ERR	ERR
14	Tr(T/Tcr)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
15	Z (TABLE XI)	1.165	1.150	ERR	ERR	ERR	ERR	ERR	ERR

PC PW 1 : 5669.2 PW 2 : ERR PW 3 : ERR PW 4 : ERR



Laboratory Services, Inc.

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

ASTM DISTILLATION

Pro Well Testing & Wireline
Attention: Mr. Merv Buecker
P. O. Box 791
Hobbs, New Mexico 88241

August 5, 1997

Murchison Oil & Gas
Jackson Unit #5

Percent Distilled

Temperature

IBP	92
5	128
10	154
20	191
30	227
40	254
50	317
60	387
70	482
80	593
90	712
95 EP	720

% Recovered = 95.0
% Residue = 0.2
% Loss = 4.8

API Gravity @ 60° F = 56.80

Rolland Perry