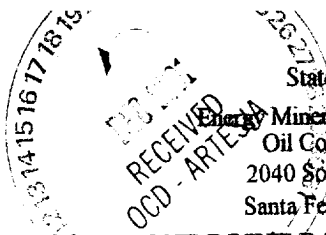


Submit in duplicate to
appropriate district office.
See Rule 401 & Rule 1122



State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

clsf

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator KUKUI OPERATING					Lease or Unit Name HIGHLAND 25 FED						
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 12/7/01		Well No. 1				
Completion Date 11/20/01		Total Depth 8000		Plug Back TD		Elevation		Unit Ltr - Sec - TWP - Rge 25 19 21			
Csg. Size 5 1/2	Wt. 17	d 4.892	Set At 8000	Perforations: From: 7761 To: 7774			County EDDY				
Tbg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 7707	Perforations: From: To:			Pool				
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 7707		Formation Bunling Ranch MORROW					
Producing Thru Tbg. Size		Reservoir Temp. °F 151.1 @ 7707		Mean Annual Temp. °F 60		Baro. Press. P _a 13.2		Connection VENTED			
L 7707	H 7707	Gg 0.622	%CO ₂ 0.473	%N ₂ 2.604	%H ₂ S N/A	Prover N/A	Meter Run 3.068	Taps FLG			
FLOW DATA					TUBING DATA					CASING DATA	
No.	Prover Line Size	Orifice x 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						1710		PKR		24 HRS	
1	3 X 1.500		192	10.2	76	1575		"		1 HR	
2	3 X 1.500		192	14.4	76	1365		"		1 HR	
3	3 X 1.500		192	20.25	77	1060		"		1 HR	
4	3 X 1.500		192	24.01	78	780		"		1 HR	
5											
RATE OF FLOW CALCULATIONS											
No.	COEFFICIENT (24 Hour)		$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress Factor F _{pv}	Rate of Flow Q, Mcfd			
1	11.13		45.75	205.2	0.985	1.268	1.016	646			
2	11.13		54.36	205.2	0.985	1.268	1.016	768			
3	11.13		64.46	205.2	0.984	1.268	1.016	910			
4	11.13		70.19	205.2	0.9831	1.268	1.016	989			
5											
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio			552.2 Mcf bbl.			
1	0.3	536	1.49	0.968	A.P. I. Gravity of Liquid Hydrocarbons			54.0 @ 60 Deg.			
2	0.3	536	1.49	0.968	Specific Gravity Separator Gas			0.622 XXXXXXXX			
3	0.3	537	1.49	0.968	Specific Gravity Flowing Fluid			XXXXXX Gmix = .627			
4	0.3	538	1.5	0.969	Critical Pressure			* 668 P.S.I.A. 671 P.S.I.A.			
5					Critical Temperature			* 359 R. 365 R			
P _c 1723.2 P _w 2969.4											
No.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	$(1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{6.691}{79825}$ $AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{1.668}{2.582}$ $(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{2.582}{1.668}$						
1		1589.2	2525.6	443.8							
2		1379.9	1904.2	1065.3							
3		1076.4	1158.7	1810.8							
4		798.6	637.7	2331.7							
5											
Absolute Open Flow					1.668	Mcf @ 15.025		Angle of Slope Q:	63.5	Slope n:	0.499
Remarks: WELL PRODUCED .25 BBL 54.0 API CONDENSATE * = CORRECTED TO 2.604 % N2											
Approved By Division:			Conducted By: SIGNAL WIRE LINE			Calculated By: BM			Checked By: BM		

L : 7707 H : 7707 L/H : 1 G/GMIX : 0.627
 %CO2 : 0.473 %N2 : 2.604 H2S : DATE :12-01-01
 d : 2.441 Fr :0.010763 GH : 4832.3 RANGE : 21

Pt2 = 2522.4 Pw = 1589.2 *
 1899.4 1379.9 *
 1151.8 1076.4 *
 629.2 798.6 *

VOL 1 : 646 PSIA 1 : 1588.2 RESV.TEMP 151.1
 VOL 2 : 768 PSIA 2 : 1378.2
 VOL 3 : 910 PSIA 3 : 1073.2 SHUT-IN PR= 1723.2
 VOL 4 : 989 PSIA 4 : 793.2

Pc2-Pw2= 443.8 Pw2 = 2525.6 *
 1065.3 1904.2 *
 1810.8 1158.7 *
 2331.7 637.7 *

PCR : 671
 TCR : 371

n = 0.499 ✓ *

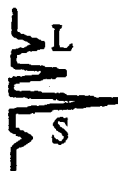
Pc2/(Pc2-Pw2) = 6.691 ✓ *
 2.787 *
 1.640 *
 1.273 *

LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	QM	0.646	0.646	0.768	0.768	0.910	0.910	0.989	0.989
2	TW	534	534	534	534	534	534	534	534
3	Ts	611.1	611.1	611.1	611.1	611.1	611.1	611.1	611.1
4	T	572.5	572.5	572.5	572.5	572.5	572.5	572.5	572.5
	PR (est)	2.37		2.05		1.60		1.18	
5	Z(est)	0.800	0.790	0.816	0.805	0.844	0.833	0.875	0.866
6	TZ	458.3	452.5	467.2	460.7	483.5	477.1	501.1	495.7
7	GH/TZ	10.545	10.680	10.343	10.490	9.995	10.129	9.643	9.747
8	eS	1.485	1.493	1.474	1.482	1.455	1.462	1.436	1.441
9	l-e-S	0.327	0.330	0.321	0.325	0.313	0.316	0.303	0.306
10	Pt	1588.2	1588.2	1378.2	1378.2	1073.2	1073.2	793.2	793.2
11	Pt2 /1000	2522.4	2522.4	1899.4	1899.4	1151.8	1151.8	629.2	629.2
12	Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763
13	Fc=FrTZ	4.932	4.870	5.029	4.958	5.204	5.135	5.394	5.336
14	FcQm	3.19	3.15	3.86	3.81	4.74	4.67	5.33	5.28
15	L/H(FcQm)	10.2	9.9	14.9	14.5	22.4	21.8	28.5	27.8
16	Fw	3.315932	3.266313	4.794960	4.715759	7.009452	6.900093	8.634402	8.5262362
17	Pw2	2525.7	2525.6	1904.2	1904.2	1158.8	1158.7	637.8	637.7
18	Ps2	3750.7	3769.6	2806.5	2821.9	1685.7	1694.0	915.7	919.1
19	Ps	1936.7	1941.6	1675.3	1679.8	1298.3	1301.5	956.9	958.7
20	P	1762.4	1764.9	1526.7	1529.0	1185.8	1187.4	875.0	875.9
21	Pr	2.63	2.63	2.28	2.28	1.77	1.77	1.30	1.31
22	Tr	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
23	Z	0.790	0.790	0.805	0.804	0.833	0.833	0.866	0.866

[Pc2/Pc2-Pw2]n = 2.582 ✓ *
 1.668 *
 1.280 *
 1.128 *

AOF= Q 1.668 ✓ *
 1.281 *
 1.165 *
 1.116 *

FORM C122-D *



Laboratory Services, Inc.

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: KUKUI Operating
Attention: Mr. Larry Strider
208 W. Wall, Suite 203
Midland, Texas 79702

SAMPLE:
IDENTIFICATION: Highland 25 Fed. #1
COMPANY: KUKUI Operating
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 12/7/01 2:45 pm
ANALYSIS DATE: 12/10/01
PRESSURE - PSIG 200
SAMPLE TEMP. °F 72
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: David Bump-Sognal Wirelin
ANALYSIS BY: Vickie Biggs

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	2.604	
Carbon Dioxide (CO2)	0.473	
Methane (C1)	90.123	
Ethane (C2)	4.557	1.216
Propane (C3)	1.225	0.337
I-Butane (IC4)	0.232	0.076
N-Butane (NC4)	0.240	0.076
I-Pentane (IC5)	0.117	0.043
N-Pentane (NC5)	0.086	0.081
Hexane Plus (C6+)	0.343	0.149
	100.000	1.928

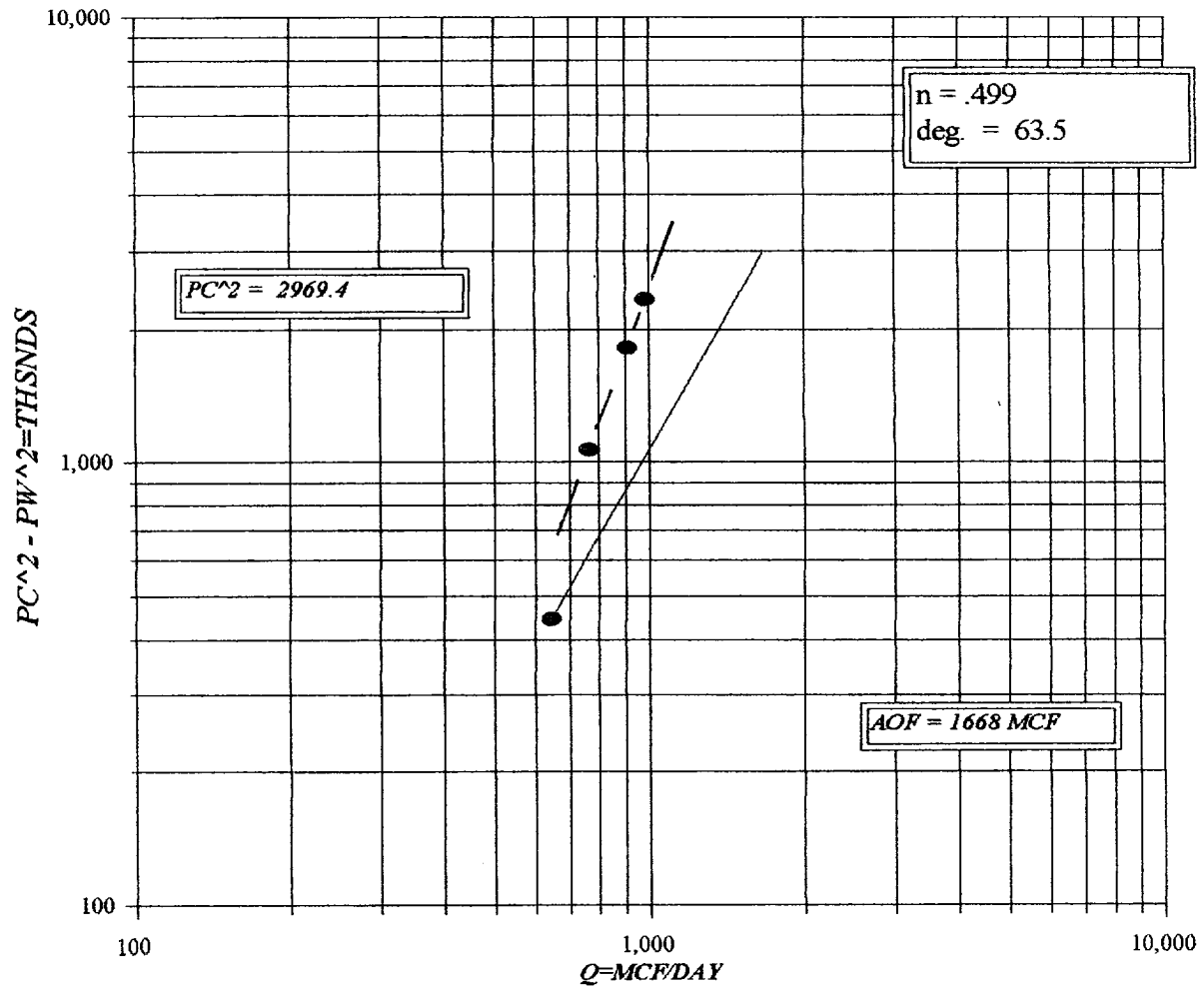
BTU/CU.FT. - DRY 1062
AT 14.650 DRY 1058
AT 14.650 WET 1040
AT 14.73 DRY 1064
AT 14.73 WET 1046

MOLECULAR WT. 18.0418

SPECIFIC GRAVITY -
CALCULATED 0.622
MEASURED

KUKUI OPERATING

HIGHLAND 25 FED. # 1



=====

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

=====

NO. OF BBLs PRODUCED = 0.3

API GRAVITY @ 60 DEG. = 54.0

.....
SPECIFIC GRAVITY OF GAS = 0.6220

XX

TOTAL GAS PRODUCED = 138

G.O.R. = 552.167

G.MIX = 0.627

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