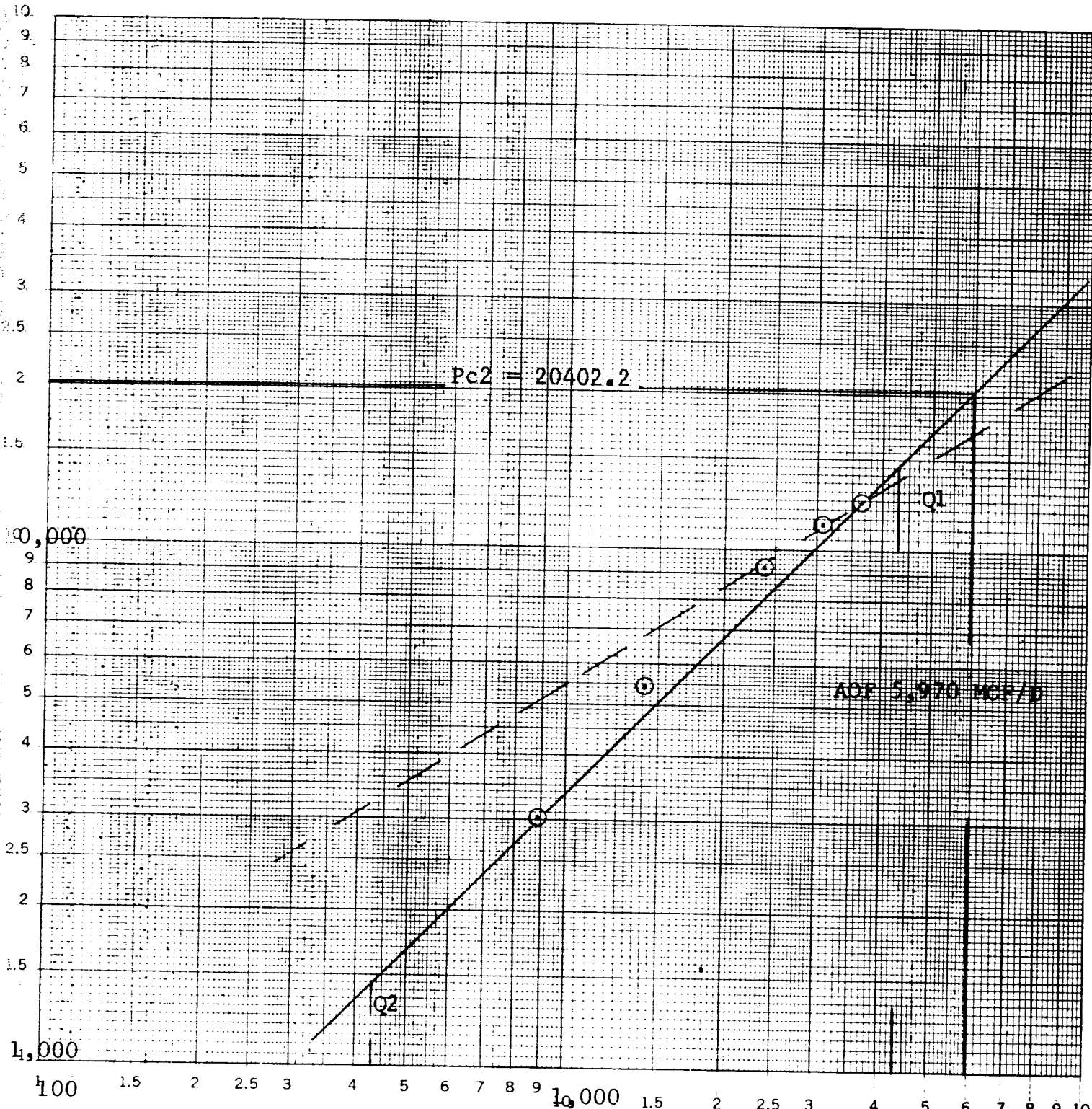


W MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type of Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 12-17-81							
Company Franks Petroleum, Inc.			Connection Air								
Well Hat Mesa			Formation Morrow		Unit A						
Completion Date 12-11-81		Total Length 14385		Flow Rate Test 14340	Elevation 3739 GL						
Casing Size 5 1/2		Wt. 17	Set At 14385	Perforations: From 14216 To 14282							
Tub. Size 2 3/8		Wt. N/80	Set At 14160	Perforations: From To							
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single Gas				Factor Set At 14160							
Producing Thru Tbg.		Reservoir Temp. °F 215 @ 14160	Mean Annual Temp. °F 60	Zero. Press. - P _g 13.2							
L 14160	H 14160	G _g .6187	% CO ₂ 1.038	% N ₂ .299	% H ₂ S						
Prover		Meter Run 3"		Type Flg.							
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
51							4127				72 hrs.
1.	3 X 2.000			500	2.0	80	3610				1 hr.
2.	3 X 2.000			510	5.0	86	3310				1 hr.
3.	3 X 2.000			510	14.0	72	3060				1 hr.
4.	3 X 2.000			510	23.0	70	2800				1 hr.
5.	3 X 2.000			510	32.0	66	2560				1 hr.
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	21.32	32.04	513.2	.9813	1.271	1.043	889				
2	21.32	51.15	523.2	.9759	1.271	1.041	1408				
3	21.32	85.59	523.2	.9887	1.271	1.046	2398				
4	21.32	109.70	523.2	.9905	1.271	1.047	3082				
5	21.32	129.39	523.2	.9943	1.271	1.048	3654				
NO.	P _g	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio 119.073 Mcf/bbl.						
1	.76	540	1.48	.920	A.P.L. Gravity of Liquid Hydrocarbons 51.6 @ 60 Deg.						
2	.78	546	1.50	.922	Specific Gravity Separator Gas .6187						
3	.78	532	1.46	.914	Specific Gravity Flowing Fluid .645						
4	.78	530	1.45	.912	Critical Pressure 671 P.S.I.A. 670 P.S.I.A.						
5	.78	526	1.44	.910	Critical Temperature 365 R 375 R						
P _c *4516.9 P _c ² 20402.2											
NO.	BHP	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.634$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.634$						
1*	5592.2	4168.31	17374.5	3027.7	AOP = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.970$						
2	5234.2	3866.01	14946.3	5455.9							
3	4591.2	3339.61	11152.7	7249.5							
4	4209.2	3032.5	9196.1	11206.1							
5	3929.2	2813.4	7915.1	12487.1							
Absolute Open Flow 6001.2 S.I.P.		5,970			Mcfd @ 15.025			Angle of Slope θ 45°		Slope, n 1.000	
Remarks: Produced 4 bbls. distillate and 1 bbl. H2O during the test.											
* Pressures obtained from a bottom-hole instrument set @ 14160 ft.											
Approved By: Davis Services, Inc.			Conducted By: Davis Services, Inc.			Calculated By: Rick Pagan			Checked By:		

COMPANY : FRANKS PETROLEUM, INC.
 LEASE : UNION FEDERAL
 WELL NO. : 1
 UNIT : A/Sec. 9/Twp. 21s/Rge. 32e
 COUNTY : LEA
 STATE : NEW MEXICO
 DATE : 12-17-81



$Q = \text{MCF/Day}$
 $Q1 = 4300: \text{Log of } Q1 = 3.633469$
 $Q2 = 430: \text{Log of } Q2 = 2.633469$
 $N = \frac{1.000}{\theta = 45^\circ}$

NEW-TEX LAB
 P.O. BOX 1161
 HOBBS NM 88241-1161
 505-393-3561

ANALYSIS NUMBER: 6283
 DATE OF RUN: 12 16 81
 DATE SECURED: 12 17 81

ANALYSIS CERTIFICATE

SAMPLE IDENT: FRANK PETROLEUM INC - UNION FEDERAL #1

CLIENT: DAVIS SERVICES INC
 ADDRESS: BOX 1654
 CITY, STATE: HOBBS NM 88240

SAMPLING PRESS: 0 PSIG SAMPLING TEMP: 0 DEG F
 STATION NUMBER:

***** GAS ANALYSIS *****

	MOLE PERCENT	GAL/MCF
NITROGEN	0.2989945	
CARBON DIOXIDE	1.0361111	
ETHANE	91.4710912	
ETHANE	3.1293092	1.3679900
PROPANE	1.1307447	0.3103090
ISO-BUTANE	0.1854850	0.0605241
NORMAL BUTANE	0.2629029	0.0845424
ISO-PENTANE	0.1011256	0.0369360
NORMAL PENTANE	0.2782324	0.0822183
HEXANES	0.07738102	0.0302770
HEPTANES PLUS	0.2242940	0.1032200
TOTAL	100.0000000	2.0220900

PROPANE GPM: 0.31 BUTANES GPM: 0.15
 ETHANE GPM: 1.37 PENTANES PLUS GPM: 0.20

SPECIFIC GRAV (CALC): .6187
 MOLE WEIGHT: 17.94

BTU/00 FT	PRESSURE (PSIA)	WET	DRY
14.696		1062	1081
14.650		1059	1078
14.730		1065	1084
14.735		1065	1084

ANALYZED BY:

APPROVED BY:

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (R_w or P_w)
 FROM KNOWN BOTTOM HOLE PRESSURE (R_s or P_s)

Form C-122F
 Adopted 9-1-65

COMPANY Franks Petroleum LEASE Union Federal WELL NO. 1 DATE 12-17-81

LOCATION: Unit A Section 9 Township 21S Range 32E

L. 14160 H 14160 L/H 1.000 G mix .645 %CO₂ 1.038 %N₂ .299 %H₂S _____

GH 9133 P_{cr} 670 T_{cr} 375

LINE		1st Rate	2nd Rate	3rd Rate	4th Rate
1	T _w (W.H.°R)	534	534	534	534
2	T _s (B.H.°R)	675	675	675	675
3	T = ($\frac{T_w + T_s}{2}$)	604.5	604.5	604.5	604.5
4	Z (Est.)	1.024	.964	.991	.935
5	TZ	619.0	582.7	599.1	565.2
6	GH/TZ	14.754	15.673	15.246	16.159
7	e ^s (Table XIV)	1.739	1.800	1.771	1.833
8	P _f or P _s	5592.2	5592.2	5234.2	4591.2
9	P _f ² or P _s ²	31272.7	31272.7	27396.9	21079.1
10	P _c ² = P _f ² /e ^s or P _w ² = P _s ² /e ^s	17983.8	17374.5	15466.9	14946.3
11	P _c or P _w	4240.7	*4168.3	3932.8	*3866.3
12	P _r = ($\frac{P_w + P_s}{2}$) or ($\frac{P_c + P_f}{2}$)	4916.5	4880.2	4583.5	4550.1
13	P _r = (P/P _{cr})	7.34	7.28	6.84	6.79
14	T _r = (T/T _{cr})	1.61	1.61	1.61	1.61
15	Z (Table XI)	.964	.961	.935	.932

One copy to be filed in District Office / Work may be corrected

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (~~R_{sc}~~ or P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (~~R_{sc}~~ P_s)

COMPANY _____ LEASE _____ WELL NO. _____ DATE _____

LOCATION: Unit _____ Section _____ Township _____ Range _____

L _____ H _____ G _____ % CO₂ _____ % N₂ _____ % H₂S _____

GH _____ Pcr _____ Tcr _____

5th Rate

S.I.P.

LINE	1	2	3	4	5	6	7	8
1	T _w (W.H. °R)	534	534				534	534
2	T _s (B.H. °R)	675	675				675	675
3	T = ($\frac{T_w + T_s}{2}$)	604.5	604.5				604.5	604.5
4	Z (Est.)	.885	.848				1.062	.997
5	TZ	535.0	512.6				642.0	602.7
6	GH/TZ	17.072	17.816				14.226	15.154
7	e ^s (Table XIV)	1.897	1.951				1.705	1.765
8	P _f or P _s	3929.2	3929.2				6001.2	6001.2
9	P _f ² or P _s ²	15438.6	15438.6				36014.4	36014.4
10	P _c ² = P _f ² /e ^s or P _w ² = P _s ² /e ^s	8139.0	7915.1				21124.7	20402.2
11	P _c or P _w	2852.9	* 2813.4				4596.2	*4516.9
12	P = ($\frac{P_w + P_s}{2}$) or ($\frac{P_c + P_f}{2}$)	3391.1	3371.3				5298.7	5259.0
13	P _r = (P/P _{cr})	5.06	5.03				7.91	7.85
14	T _r = (T/T _{cr})	1.61	1.61				1.61	1.61
15	Z (Table XI)	.848	.877				.997	.993