

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 12-04-90	
Company Kaiser - Francis Oil Company				Connection Not connected for test		
Pool Avalon				Formation Delaware		Unit 160 acs.
Completion Date 11/16/90		Total Depth 10973		Plug Back TD 4195		Elevation 3242 Gr.
Farm or Lease Name AM Federal		Well No. 1				
Coq. Size 5 1/2	Wt. 17	d 4.892	Set At 10973	Perforations: From 4042 To 4062		Unit 8
Tbg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 3945	Perforations: From To		Sec. Twp. Rge. 21S 28E
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 3945		County Eddy
Producing Thru TBG		Reservoir Temp. °F 115 @ 4052		Mean Annual Temp. °F 60		State New Mexico
L * 4052	H 4052	Gg .796	% CO ₂ 4.95	% N ₂ 3.58	% H ₂ S ---	Prover Meter Run 3.068
						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.	Temp. °F	
1.	3	X	1.250	60	9.00	52	1070		PKR		72 hrs.
2.	3	X	1.250	75	30.00	46	1200		PKR		60 mins.
3.	3	X	1.250	75	62.00	55	1190		PKR		45 mins.
4.	3	X	1.750	40	55.00	40	1180		PKR		45 mins.
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}	Rate of Flow Q, Mcfd
1	7.577	25.67	73.2	1.008	1.121	1.010	222
2	7.577	51.44	88.2	1.014	1.121	1.013	449
3	7.577	73.95	88.2	1.005	1.121	1.013	640
4	15.61	54.09	53.2	1.020	1.121	1.008	973
5							

NO.	R _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.11	512	1.21	.980	A.P.I. Gravity of Liquid Hydrocarbons	50.2 Deg.
2	.13	506	1.20	.975	Specific Gravity Separator Gas	.796
3	.13	515	1.22	.975	Specific Gravity Flowing Fluid	X X X X X
4	.08	500	1.18	.985	Critical Pressure	***682 P.S.I.A.
5					Critical Temperature	***421 °R

****** $P_c = 1526.4$ $P_c^2 = 2329.9$

NO.	P_1^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	**	1498.9	2246.7	83.2
2	**	1466.1	2149.5	180.4
3	**	1420.9	2019.0	310.9
4	**	1355.6	1837.7	492.2
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.734$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.498$

BEFORE EXAMINATION

OIL CONSERVATION DIVISION

Kaiser Francis EXHIBIT NO. 4

CASE NO. 10251

Absolute Open Flow	3,498	Mcf/d @ 15.025	Angle of Slope @	50.5	Slope, n	.025
--------------------	-------	----------------	------------------	------	----------	------

Remarks: Well made 3.00 BBLS 50.2 API Gr. CONDENSATE & 4.00 BBLS H₂O

*=BHP Instrument set @ this depth.

=P_c & P_w calculated from known BHP's *=P_{cR} & T_{cR} corrected to 4.95% CO₂ & 3.85% N₂

Approved By Division	Conducted By: Pro Well Testers	Calculated By: BM	Checked By: BM
----------------------	-----------------------------------	----------------------	-------------------