

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 5/13/81			
Company Estoril Producing Corporation				Connection None					
Pool Antelope Ridge				Formation Morrow				Unit	
Completion Date 5/12/81		Total Depth 13274'		Plug Back TD 13274'		Elevation 3410'GL		Farm or Lease Name Adobe Federal	
Coq. Size 5 1/2" Liner	Wt. 20.0	d 4.778	Set At 13288	Perforations: Open Hole From 13238 To 13274				Well No. 1	
Trg. Size 2 7/8"	Wt. 6.5	d 2.441	Set At 13140	Perforations: Open Ended From To				Unit Sec. Twp. Rge. G 15 23s 34e	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At 13140		County Lea			
Producing Thru Tubing		Reservoir Temp. °F 188 @ 12300		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L 13256	H -	Gg 0.6228	% CO ₂ 0.405	% N ₂ 0.403	% H ₂ S -	Prover	Meter Run 4,026	Type F	

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							4198	60	PACKER		30.0 hrs.
1.	4	5.5/64	1.500	500	4	98	3483	60			1.0 hr
2.	4	7/64	1.500	510	10	84	3089	60			1.0 hr
3.	4	10/64	1.500	510	14	87	2919	60			1.0 hr
4.	4	13/64	1.500	520	27	82	2559	60			1.0 hr
5.											

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, Mscf
1	10.84	45.31	513.2	0.9653	1.267	1.037	622.93
2	10.84	72.33	523.2	0.9777	1.267	1.040	1010.10
3	10.84	85.59	523.2	0.9750	1.267	1.039	1190.83
4	10.84	119.99	533.2	0.9795	1.267	1.042	1681.99
5							

NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.76	558	1.55	0.930	6.953	-	0.6228	XXXXXX	674	361
2	0.78	544	1.51	0.924						
3	0.78	547	1.52	0.927						
4	0.79	542	1.50	0.921						
5										

P _c 5700.2 P _c ² 32492.3		(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.219$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.007$	
NO.	P _t ²	P _w *	P _w ²	P _c ² - P _w ²	
1		5262.2	27690.7	4801.6	
2		4910.2	24110.1	8382.2	
3		4683.2	21932.4	10559.9	
4		4225.2	17852.3	14640.0	
5					

Absolute Open Flow 3376		Mscf @ 15.025		Angle of Slope @ 48° 52'		Slope, n 0.874	
Remarks: * BOTTOM HOLE PRESSURE @ (-9846) 13256' USED FOR PRESSURE CALCULATIONS							

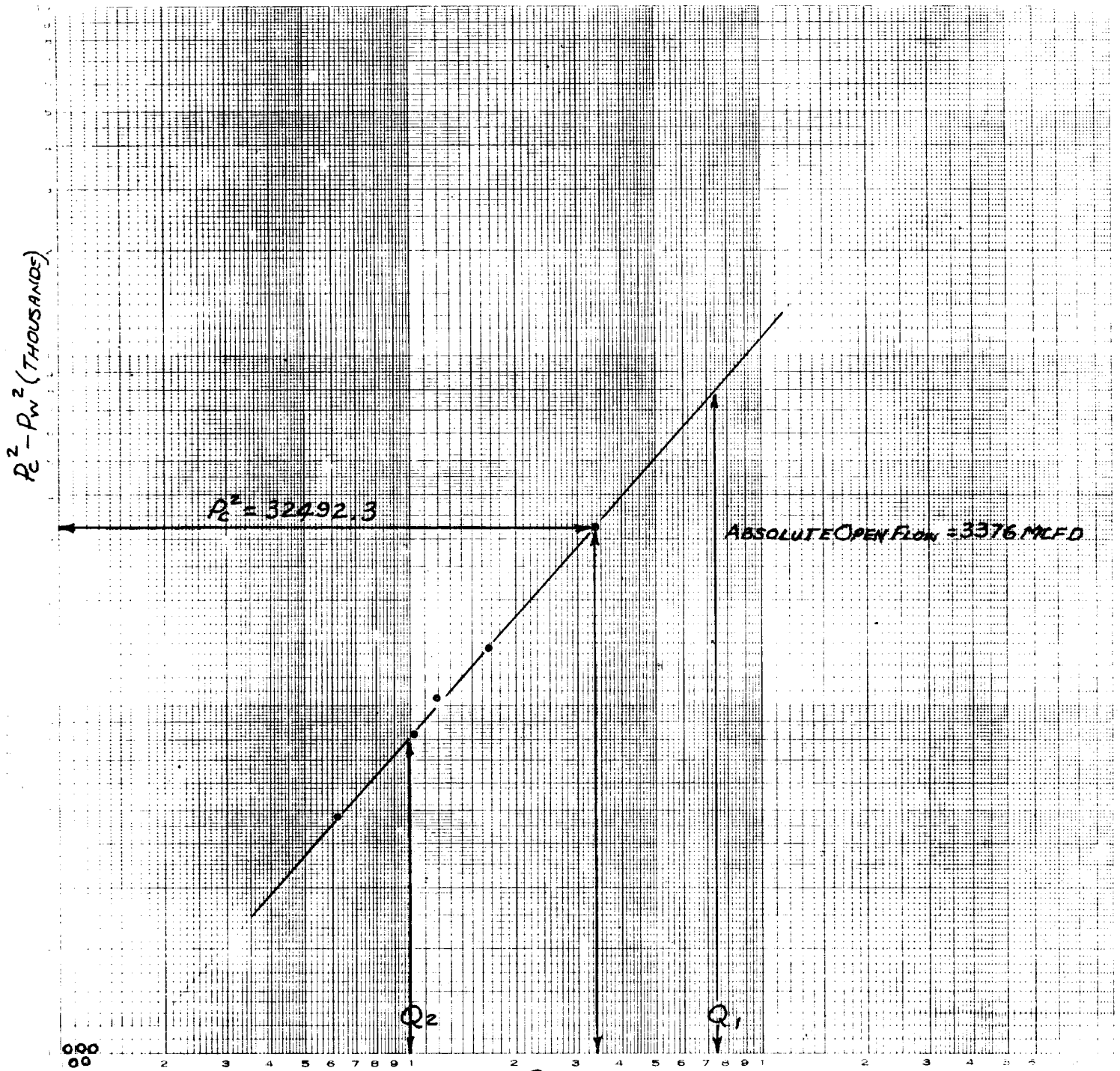
Approved By Division	Conducted By: JARREL SERVICES, INC.	Calculated By: Joe A. Coleman	Checked By: Joe A. Coleman PE #2208
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OIL CONSERVATION DIV.

JUN 1 1981

RECEIVED

COMPANY: Entorill Producing Corporation
 WELL: Adobe Federal, No. 1
 LOCATION: G 15 23s 34e
 COUNTY: Lea
 DATE: May 13, 1981



$Q_1 = 7400 \text{ MCFD}; \text{LOG } Q_1 = 3.86923$
 $Q_2 = 990 \text{ MCFD}; \text{LOG } Q_2 = 2.99564$
 $n = 0.87359 = 0.874$

OIL CONSERVATION DIV.

JUN 1 1981

RECEIVED

NEW-TEX LAB

P. O. BOX 1161
HOBBS, N.M. 88240

No. 4970
Run No. _____
Date of Run. 5-14-81
Date Secured 5-13-81

CERTIFICATE OF ANALYSIS

A Sample of Estoril Adobe State #1
Secured from Jarrel Well Testing
At Box 1654 Secured by _____
Hobbs, New Mexico 88240 Time _____ Date _____
Sampling conditions _____ Press _____
Temp. _____

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
Carbon Dioxide	.405		
Air			
Nitrogen	.403		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	91.443		
Ethane	4.968	1.325	
Propane	1.553	.426	
Butanes			
Iso-Butane	.226	.074	
N-Butane	.309	.097	
Pentanes			
Iso-Pentane	.126	.046	
N-Pentane	.095	.034	
Hexanes	.108	.044	
Heptanes	Plus .364	.168	
Octanes			
TOTAL	100.000	2.214	

Calc. Sp. Gr. 0.6228
Calc. A.P.I. _____
Calc. Vapor Press. _____ PSIA
Sp. Gr. _____
Mol. Wt. 18.05

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M. .428
Butanes Calc. G.P.M. .171
Pentanes Plus. G.P.M. .292
Ethane Calc. G.P.M. 1.325
*RVP Gasoline G.P.M. _____
B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1102
Wet Basis 1083
Sulfur Analysis by Titration
Gr./100 Cu. Ft. _____
Hydrogen Sulfide _____
Mercaptans _____
Sulfides _____
Residual Sulfur _____
Total Sulfur _____

Run by Deane Simpson Checked by _____ Approved by Deane Simpson

Additional Data and Remarks

JARREL SERVICES, INC.

POST OFFICE BOX 1654

PHONES 505 393-5396 — 393-8274

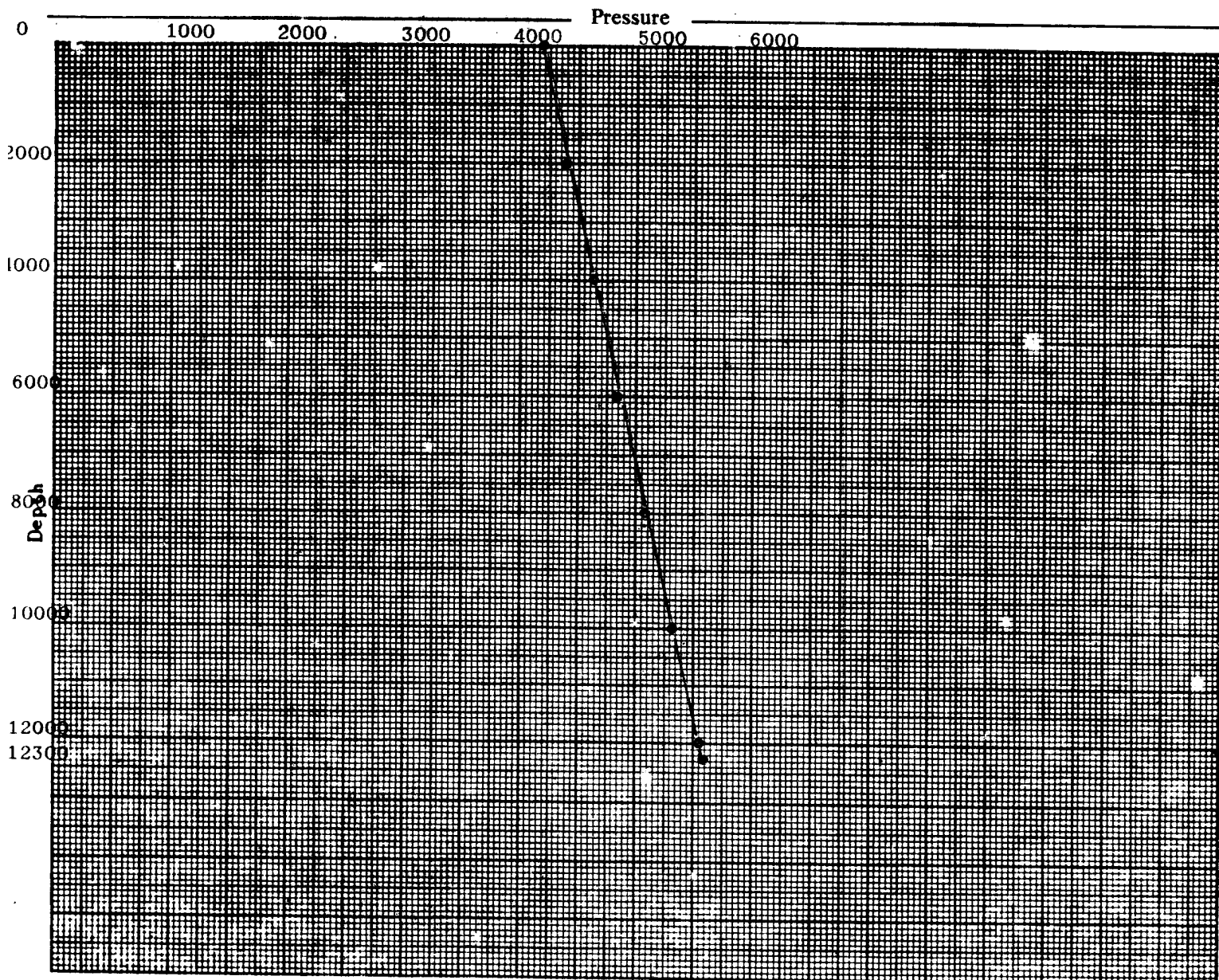
HOBBS, NEW MEXICO 88240

OPERATOR Estoril Producing Corporation
 FIELD Antelope Ridge
 FORMATION Morrow
 LEASE Adobe Federal WELL #1
 COUNTY Lea STATE New Mexico
 DATE 5/13/81 TIME 10:00 AM
 Status Shut in
 Test Depth 12300'
 Time S. I. 30.0 hrs. Last test date -
 Tub Pres. 4198 DWT BHP last test -
 Cas. Pres. PKR BHP change -
 Elev. 3410' Fluid top None
 Datum (-9846)** Water top None
 Temp. @ 188°F Run by JSI #10
 Cal. No. A14637N Chart No. 1

BOTTOM HOLE PRESSURE RECORD

Depth	Pressure	Gradient
0	4198	-
2000	4400	.101
4000	4624	.112
6000	4850	.113
8000	5078	.114
10000	5308	.115
12000	5540	.116
12300	5575	.117
13256 (-9846)	5687 * **	(.117)

* EXTRAPOLATED PRESSURE
 ** MIDPOINT OF OPEN HOLE



OIL CONSERVATION DIV.

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