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

Form C-122
Revised 9-1-65

RECEIVED
JUL 29 1981
O. C. D.
ARTESIA, OFFICE

C/SF

Type Test: [X] Initial [ ] Annual [ ] Special		Test Date: 7-8-81	
Company: Amoco Production Company ✓	Connection: Phillips Petroleum Company		Unit
Pool: ~~Wildcat Morrow~~ Angell Ranch AT. MOR	Formation: Morrow		
Completion Date: 6-29-80	Total Depth: 10570	Plug Back TD: ~~10090~~ 10527	Elevation: 3481
Farm or Lease Name: State HE Com			
Csg. Size: 4.500 / Wt.: 13.5 / d: 3.920 / Set At: 10570	Perforations: From 9958 To ~~10001~~ 10280		Well No.: 1
Tbg. Size: 2.375 / Wt.: 4.7 / d: 1.995 / Set At: 9903	Perforations: From 0 To 0		Unit: K / Sec.: 11 / Twp.: 19S / Rge.: 27E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single	Packer Set At: 8583		County: Eddy
Producing Thru: Tubing	Reservoir Temp. °F: 166 @ 10119	Mean Annual Temp. °F: 60.0	Baro. Press. – P_a: 13.2
State: New Mexico			

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
10119	10119	0.636	1.10	0.26	0	0	4.0	Flange

	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
SI					2200	75			46.2
1.	4.00 x 2.500	37	1.0	73	2025	76	0	0	1.0
2.	4.00 x 2.500	39	2.0	71	1870	76	0	0	1.0
3.	4.00 x 2.500	40	4.5	70	1658	76	0	0	1.0
4.	4.00 x 2.500	39	6.8	72	1385	76	0	0	1.0
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, Fpv	Rate of Flow Q, Mcfd
1	32.71	7.10	50.4	0.9877	1.2535	1.0044	289
2.	32.71	10.18	51.8	0.9896	1.2535	1.0046	415
3.	32.71	15.49	53.3	0.9905	1.2535	1.0047	632
4.	32.71	18.77	51.8	0.9887	1.2535	1.0046	764
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	0.07	533	1.45	0.991
2.	0.08	531	1.45	0.991
3.	0.08	530	1.44	0.991
4.	0.08	532	1.45	0.991
5.				

Gas Liquid Hydrocarbon Ratio 0 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 0 Deg.
Specific Gravity Separator Gas 0.636 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.636
Critical Pressure 675 P.S.I.A. 675 P.S.I.A.
Critical Temperature 367 R 367 R

P_c 2213.2 P_c^2 4898

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	4154	2024	4095	803
2	3546	1871	3499	1339
3	2793	1662	2764	2134
4	1955	1394	1943	2955
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.6575$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.4675$

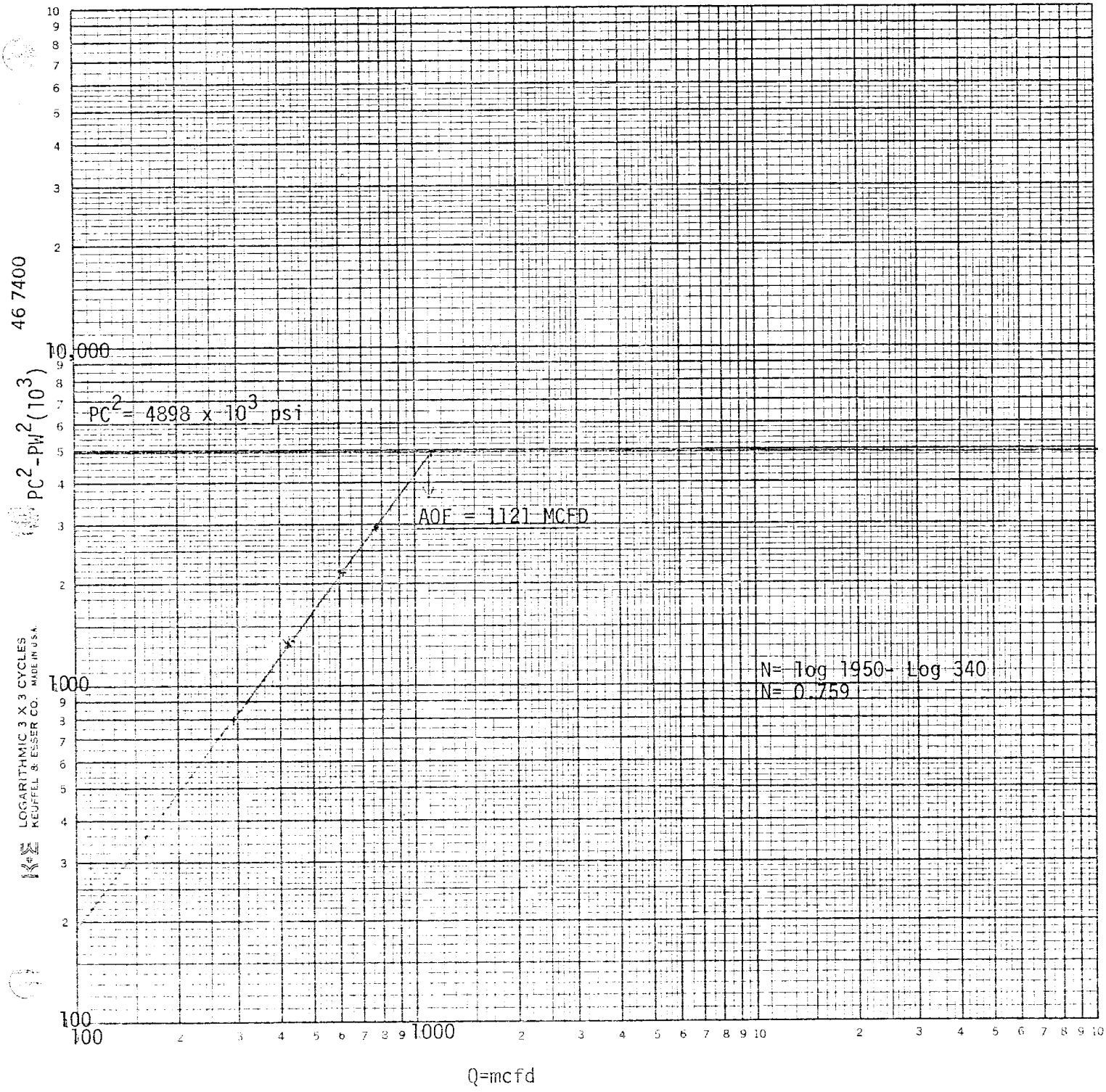
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1121$

Absolute Open Flow 1121 Mcfd @ 15.025 Angle of Slope θ 52.8 Slope, n 0.759

Remarks:

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	West Engineering	Debbie Etheridge	L. W. Sheppard

State "HE" Com. #1



SUGGESTED FIELD DATA SHEET (Not Required To File)

Type Test: [X] Initial [ ] Annual [ ] Special — Test Date: 7-8-81

Company: Amoco Production Co. — Connection: Phillips Petroleum Co.

Field — Reservoir — Location

Completion Date — Total Depth — Plug Back TD — Elevation

Csg. Size — Wt. — d — Set At — Perforations: From 9958 To 10280

Tbg. Size: 2 3/8 — Wt. — d — Set At: 9903 — Perforations: From — To

Type Completion (Describe): Tubing — Packer Set At: 8583

Producing Thru: Tubing — Reservoir Temp. °F: 166 @ 9980' — Mean Annual Temp. °F: 60 — Baro. Press. — P_a: 13.2

G_g: .634 — % CO_2: .796 — % N_2: .804 — % H_2S: -0-

Lease No. or Serial No.

Allottee

Unit

Farm or Lease Name: State "HE" Com

Well No.: 1

Sec.: 11 — Twp.-Blk.: 19S — Rge.: 27E

County or Parish: Eddy

State: New Mexico

Prover — Meter Run: 4" Flange

DATE / Time of Reading	ELAP. TIME Hrs.	Wellhead Working Pressure: D. W. Tbg. Psig.	Csg. Psig.	Temp. °F	METER OR PROVER: Pressure Psig.	Diff.	Temp. °F	Orifice	REMARKS (Include liquid production data: Type—A.P.I. Gravity—Amount)
8:30 AM		2200		75				2.500"	Shut-IN Meter 0-100 # 0-50 "
9:00		2200		75	37.2				Begin Test 6/64 Choke
9:15		2085		75	37.2	2.42			286 mcf/Day
9:30		2040		75	37.2	1.62			
9:45		2025		76	37.2	1.13			
10:00 AM		2025		76	37.2	1.00	73		End Rate I
10:15		1917		76	41.6	5.8			11/64 Choke
10:30		1885		76	40.1	4.6			
10:45		1870		76	39.6	4.4			410 mcf/Day
11:00 AM		1870		76	38.6	2.0	77		End Rate II
11:15		1720		76	49.2	7.60			13/64 Choke
11:30		1657		76	46.1	5.12			
11:45 AM		1650		76	44.6	6.20			625 mcf/Day
12:00 Noon		1658		76	40.1	4.5	70		End Rate III
12:15 PM		1508		76	47.6	8.2			16/64 Choke
12:30		1475		76	46.1	7.6			
12:45		1405		76	38.6	7.2			757 mcf/Day
1:00 pm		1385		76	38.6	6.8	72		End Rate IV

Fluid T.S.T.M.

Page 1 of 1 — Data By: Mark Rowland

NEW-TEX LAB
P. O. BOX 1161
HOBBS, N.M. 88240

No. 5254
Run No.
Date of Run 7-08-81
Date Secured 7-08-81

CERTIFICATE OF ANALYSIS

A Sample of Amoco Production Company State "HE" Comm #1
Secured from John West Engineering
At 412 North Dal Paso Street Secured by
Hobbs, New Mexico 88240 Time Date
Sampling conditions Press
Temp.

FRACTIONAL ANALYSIS

Percentage Composition

	MOL %	LIQ. %	G.P.M.
.....			
.....			
.....			
Carbon Dioxide	.796		
Air			
Nitrogen	.804		
Oxygen			
Hydrogen sulfide			
Hydrogen			
Methane	88.924		
Ethane	6.277		1.674
Propane	2.080		.571
Butanes			
Iso-Butane	.238		.078
N-Butane	.351		.110
Pentanes			
Iso-Pentane	.113		.041
N-Pentane	.095		.034
Hexanes	.049		.020
Heptanes ..... Plus	.273		.126
Octanes			
TOTAL	100.000		2.654

Calc. Sp. Gr.— 0.6364
Calc. A.P.I.—
Calc. Vapor Press.— PSIA
Sp. Gr.
Mol. Wt. 18.46

LIQUID CONTENT (GAL./MCF)

Propane Calc. G.P.M.	.571
Butanes Calc. G.P.M.	.188
Pentanes Plus. G.P.M.	.221
Ethane Calc. G.P.M.	1.674
___ RVP Gasoline G.P.M.	

B.T.U./Cu. Ft. @ 14.696 P.S.I.A.
Dry Basis 1107
Wet Basis 1088

Sulfur Analysis by Titration
Gr./100 Cu. Ft.
Hydrogen Sulfide
Mercaptans
Sulfides
Residual Sulfur
Total Sulfur

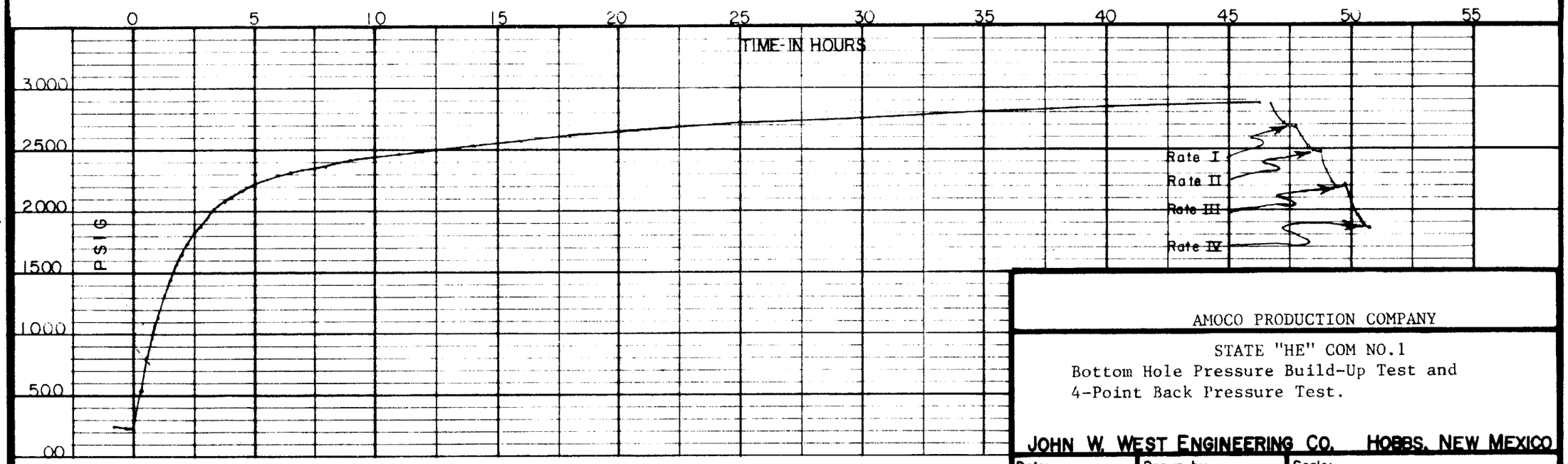
Run by R. H. Hamilton Checked by Deane Simpson Approved by Deane Simpson

Additional Data and Remarks

TEST DATE: JULY 6-8, 1981
TEST DEPTH: 9,980 FEET

ELEMENT NO: 18715
RANGE: (0- 4500 psi)
CLOCK NO: 20607
RANGE: 0-72 HOURS

NOTE: See attached sheet for tabulations of Pressures and Times.



AMOCO PRODUCTION COMPANY

STATE "HE" COM NO.1
Bottom Hole Pressure Build-Up Test and
4-Point Back Pressure Test.

JOHN W. WEST ENGINEERING CO. HOBBS, NEW MEXICO

Date: 7-11-81 | Drawn by: MCT | Scale: As Shown

AMOCO PRODUCTION COMPANY
STATE "HE" COM NO. 1
Bottom Hole Pressure Build-up test
and 4-point Back Pressure Test
Tabulation of Pressures and Times

TEST CONDUCTED BY:
JOHN WEST ENGINEERING COMPANY

TEST DATE: July 6-8, 1981
TEST DEPTH: 9,980 Feet
ELEMENT NO.: 18715 (0-4500 psi)
OPERATOR: M.R.

DATE	TIME	CUM. HRS./MIN.		PSIG @ 9,980 FEET	
7-6-81	9:30 AM			243	Gauge reached 9,980', Flowir
	10:00 AM			229	
	10:15 AM	00 Hrs.	00 Min.	227	Shut-in, Begin Build-up
		00	15	532	
		00	30	802	
		00	45	986	
	11:15 AM	01	00	1145	
	11:30 AM	01	15	1319	
	11:45 AM	01	30	1459	
	12:00 Noon	01	45	1570	
	12:15 PM	02	00	1655	
		02	15	1743	
		02	30	1809	
		02	45	1887	
	1:15 PM	03	00	1950	
		03	15	2002	
		03	30	2041	
		03	45	2081	
	2:15 PM	04	00	2115	
		04	30	2169	
	3:15 PM	05	00	2227	
		05	30	2266	
	4:15 PM	06	00	2300	
		06	30	2320	
	5:15 PM	07	00	2340	
		07	30	2354	
	6:15 PM	08	00	2374	
	7:15 PM	09	00	2412	
	8:15 PM	10	00	2441	
	9:15 PM	11	00	2471	
7-6-81	10:15 PM	12	00	2496	
7-7-81	12:15 AM	14	00	2540	
	2:15 AM	16	00	2578	
	4:15 AM	18	00	2614	
	6:15 AM	20	00	2643	
	11:15 AM	25	00	2708	
	4:15 PM	30	00	2757	
7-7-81	9:15 PM	35	00	2801	
7-8-81	2:15 AM	40	00	2844	
7-8-81	8:30 AM	46	15	2886	Off Bottom, gradient stops.

AMOCO PRODUCTION COMPANY
STATE "HE" COM. NO. 1
BOTTOM HOLE PRESSURE BUILD-UP
AND 4-POINT BACK PRESSURE TEST
TABULATION OF PRESSURE AND TIME

Continued from Page 1

DATE	TIME	CUM. HRS./MIN.	PSIG @ 9,980 FEET
7-8-81	9:00 AM	00 Hrs. 00 Min.	2886 Gauge Back to 9,980', Beg. T
		00 15	2775
		00 30	2721
		00 45	2694
	10:00 AM	01 00	2690 End Rate I
		01 15	2585
		01 30	2518
		01 45	2493
	11:00 AM	02 00	2489 End Rate II
		02 15	2345
		02 30	2230
	11:45 AM	02 45	2191
	12:00 PM	03 00	2205 End Rate III
	12:15 PM	03 15	2041
		03 30	1968
		03 45	1872
7-8-81	1:00 PM	04 00	1858 End Rate IV, Gauge out, End Test