

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

Form C-122
Revised 9-1-65

RECEIVED BY

JUL 27 1984

O. C. D.

ARTESIA, OFFICE

Type Test 4 POINT ☒ Initial ☐ Annual ☐ Special				Test Date 5-17-84	
Company STEVENS OPERATING Corp.				Connection TO AIR	
Pool PECOS SLOPE <i>Adio</i>				Formation ABO	
Completion Date 5-11-84		Total Depth 4396. <i>4460</i>		Elevation 3648.	
Casing Size 4.500		Well ID 11.6		Perforations: <i>3891</i> From 4142. To 4218.	
Tubing Size 2.375		Well ID 4.7		Perforations: From 0. To 0.	
Type Well - Single - Brownhead - G.G. or G.O. Multiple SINGLE				Packer Set At 4058.	
Producing Thru TUBING		Reservoir Temp. °F 105. 4180.		Baro. Press. - P _a 13.2	
L 4180.		H 4180.		Cg 0.713	
				% CO ₂ 8.12	
				% N ₂ 5.27	
				% H ₂ S 0.	
				Provar 2.0	
				Motor Run 0	
				Tape	
COUNTY CHAVES					
STATE NEW MEXICO					

FLOW DATA						TUBING DATA		B.H.P. DATA		Duration of Flow	
NO.	Provar Line Size	X	Orifice Size	Pres. p.s.i.g.	Diff. hw	Temp. °F	Pres. p.s.i.g.	Temp. °F	Pres. p.s.i.g.		CHOKE
51							739.		828.		72.0
1.	2.00 X 0.125			718.	0.	54.	727.	0.	813.	64/64	1.0
2.	2.00 X 0.188			695.	0.	58.	715.	0.	778.	64/64	1.0
3.	2.00 X 0.313			600.	0.	57.	613.	0.	737.	64/64	1.0
4.	2.00 X 0.438			335.	0.	56.	457.	0.	724.	23/64	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. Compres. Factor, Fpv	Rate of Flow Q, Mgd
1	0.26	0.	731.2	1.0058	1.1843	1.0719	247.
2	0.61	0.	708.2	1.0019	1.1843	1.0677	544.
3	1.67	0.	613.2	1.0029	1.1843	1.0586	1286.
4	3.40	0.	348.2	1.0039	1.1843	1.0332	1455.
5							

NO.	P _r	Temp. °R	T _r	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	1.05	514.	1.41	0.870	0.	0.	0.713	XXXXXX	693.	366.
2	1.02	518.	1.42	0.877				XXXXXX		
3	0.88	517.	1.41	0.892						
4	0.50	516.	1.41	0.937						
5										

NO.	P _r ²	P _w ²	P _w ² - P _r ²	(1) $\frac{P_r^2}{P_w^2 - P_r^2}$	(2) $\left[\frac{P_r^2}{P_w^2 - P_r^2} \right]^n$
1	683.	735.	541.	4.3580	4.0096
2	626.	705.	496.		
3	563.	669.	447.		
4	543.	657.	432.		
5					

Absolute Open Flow <u>5832.</u> Mgd @ 15.025				Angle of Slope @ <u>46.7</u>		Slope, n <u>0.943</u>	
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Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE ELEMENTS.

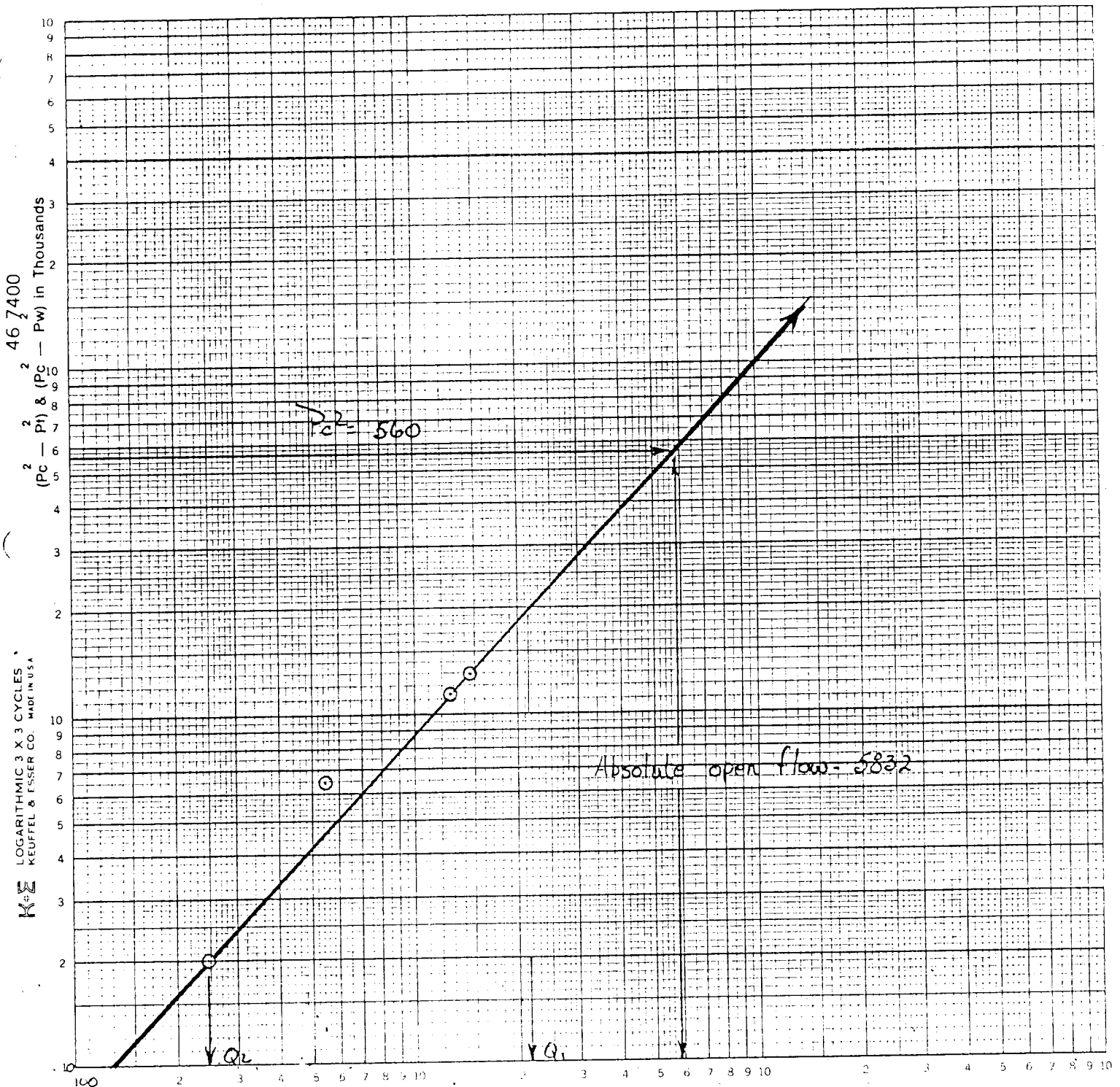
Approved By Commission	Conducted By	Calculated By	Checked By
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*Post ID-2
7-3-84
Camp & BK*

BACK PRESSURE CURVE

Operator Sterens Operating Lease Hellen Collins Fed Well No. 6
 County Chaves Field Pecos Slope Location 4 72 26E
 Date of Test 5-17-84 Slope "n" 0.943 Angle of Slope 46.7

Calc. Abs. Potential 5832 MCF/D



$$\overline{\Delta P}_1^2 \cdot P_c^2 - P_w^2 = 200$$

$$\overline{\Delta P}_2^2 \cdot P_c^2 - P_w^2 = 20$$

$$Q_1 = 2166$$

Q in MCF/Day

$$\text{LOG } Q_1 = 3.3357$$

$$\text{LOG } Q_2 = 2.3927$$

$$n = 0.943$$

"Let your Interest in Measurement be our Concern"



PRECISION SERVICE INC.
Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601

Run No. 517-1
Date Run 05/17/04
Date Sampled 05/17/04

Analysis For: STEVENS OPERATING CORP
Lease: #8 Helen Collins Federal Producer: Stevens Operating Corp
Location: Ister County: Chaves State: New Mexico
Purpose: Well Test Sampled By: J. Propp
Sampling Temp.: 58 °F Atmos Temp.: 64 °F
Volume/day: 500 MCF Formation:
Pressure on Bomb: 700 PSIG; Line Pressure: 713.2 PSIA PSIG

Gas Component

Analysis

Press. Base: 14.73

Mol. % Liq. % GPM
Per MCF

Carbon Dioxide CO ₂	8.124		
Oxygen O ₂	.058		
Nitrogen N ₂	5.270		
Hydrogen Sulfide H ₂ S			
Methane C ₁	79.744		13.485
Ethane C ₂	4.007		1.069
Propane C ₃	1.522		.419
Iso-Butane IC ₄	.269		.088
Nor-Butane NC ₄	.488		.153
Iso-Pentane IC ₅	.163		.059
Nor-Pentane NC ₅	.166		.060
Hexanes plus	.187		.086
Hexanes C ₆			
Heptanes			
Heptanes Plus C ₇ +			
Total	100.000		15.420
Pentane + G.P.M.			.206
Propane + GPM			.866
26-lb Gasoline			.752

BTU Dry 967
BTU Wet 967
Calc. Specific Gravity .713

@ Std. Press. 14.696

BTU Dry 965
BTU Wet 948

Calc. Vap. Press. #/Sq.In.
Reid Vap. Press. #/Sq.In.

Z Factor .9976
N Value 1.3009
Ave Mol Wt 20.6053
Ave Cu Ft/Gal

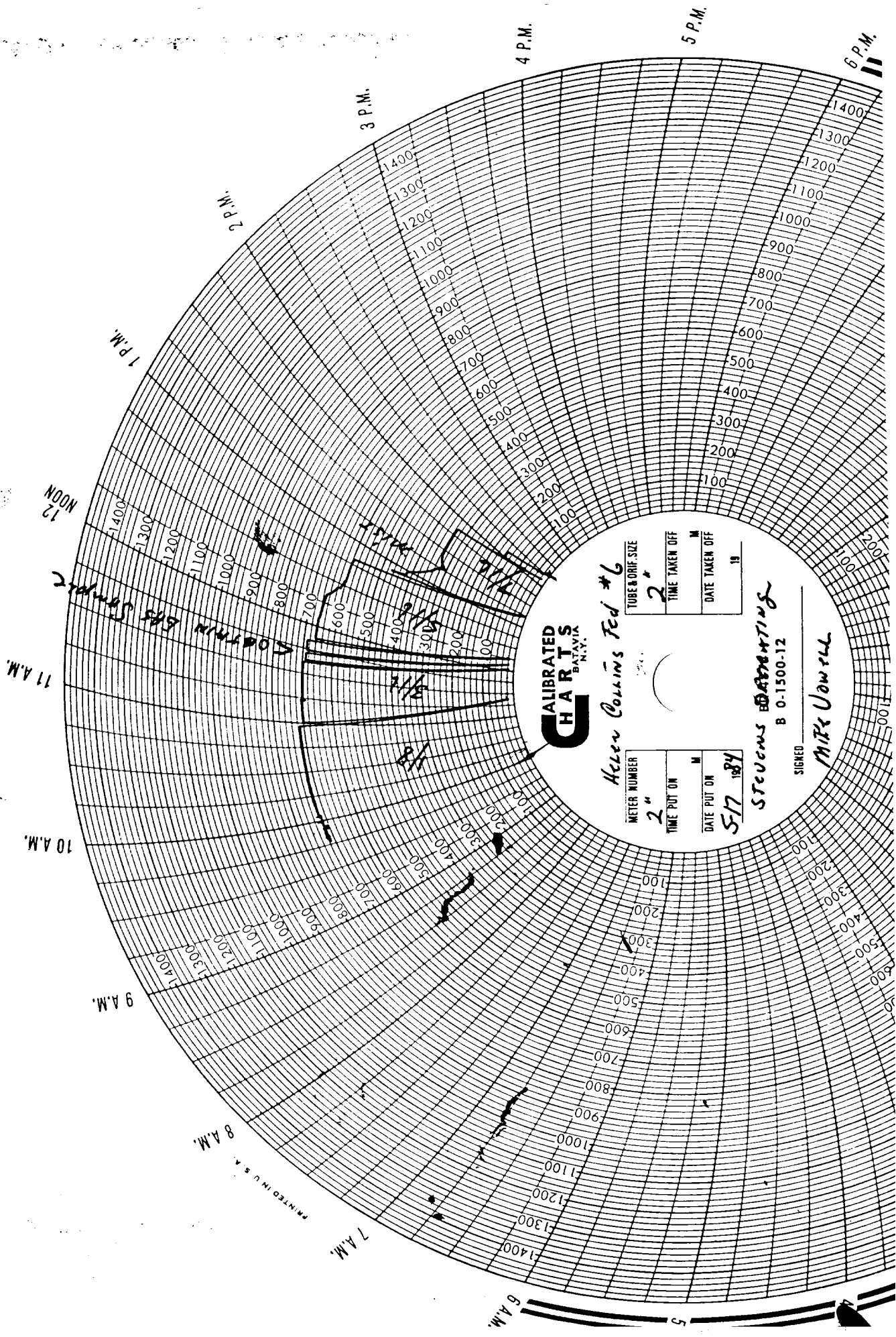
Run by Joe Kroum

Calculated By Jeffrey A. Propp

Ethane + GPM 1.935

Remarks: BTU Wet adjusted to flowing conditions as established by FERC Order #93/93-A and calculated per GPA Reference Bulletin 181-82.

Distribution:



**CALIBRATED
HARTS**
BATAVIA
N.Y.

Helen Collins Fed #6

METER NUMBER	2"
TIME PUT ON	M
DATE PUT ON	5/7/84
TUBE & DRIF SIZE	2"
TIME TAKEN OFF	M
DATE TAKEN OFF	19

STEVENS ENGINEERING
B O-1500-12

SIGNED *Mike Uowell*

PRINTED IN U.S.A.

(505) 746-3354 / Artesia, New Mexico 88210

COMPANY STEVENS OPERATING WELL NAME HELEN COLLINS FEDERAL #6
DATE OF TEST 5-17-84 FORMATION _____ PAGE 1 OF 1
COMPANY MAN MIKE VOWELL

ELEMENT NUMBER	RPG3#23060	RANGE	5225 LBS.
CLOCK NUMBER	27744	RANGE	48 HOUR
ELEMENT NUMBER	RPG3#23914	RANGE	5025 LBS.
CLOCK NUMBER	B-3443	RANGE	12 HOUR
TIME WELL SHUT IN	0830 HOUR	5-15-84	
TIME CLOCK STARTED	0820 HOUR	5-17-84	
DEAD WEIGHT ELEMENT ON SURFACE	739 PSIG		LBS.
TIME ELEMENT REACHED BOTTOM	0949 HOUR	5-17-84	
DEAD WEIGHT ELEMENT ON BOTTOM			LBS.
ELEMENT SET AT	4050 FEET		FEET
TEMPERATURE	4050 FEET	FT.	105 °F.
	DEAD WEIGHT AT THE END OF	49 HOURS	19 MINUTES

[illegible]

TEST DATE: 5-17-84
TEST DEPTH: 4050 FEET

ELEMENT NO.: RPG3#23060
RANGE: 5225 LBS.
CLOCKS: 27744
RANGE: 48 HOUR
12 HOUR

OPERATOR: DON BENNETT

Note: See Attached Sheet for Tabulation of Pressure

And Time
FOUR POINT BACK PRESSURE TEST

MIKE VOWELL

STEVENS OPERATING COMPANY

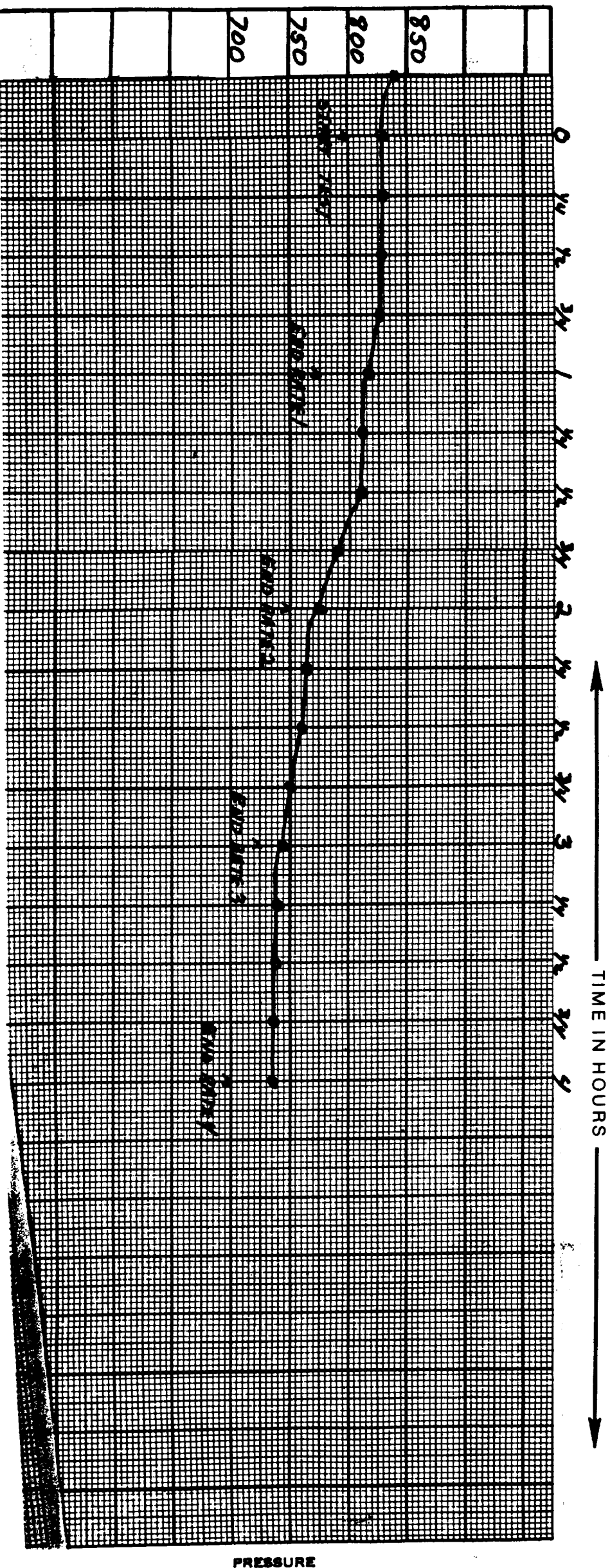
HELEN COLLINS FEDERAL #6

BENNETT-CATHEY WIRE LINE SERVICE
Box 787
Artesia, N.M. 88210
505/746-3281

Drawn By

Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES





BENNETT-CATHEY WIRE LINE SERVICE

P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone (505) 746-3281



BOTTOM HOLE PRESSURE SURVEY REPORT

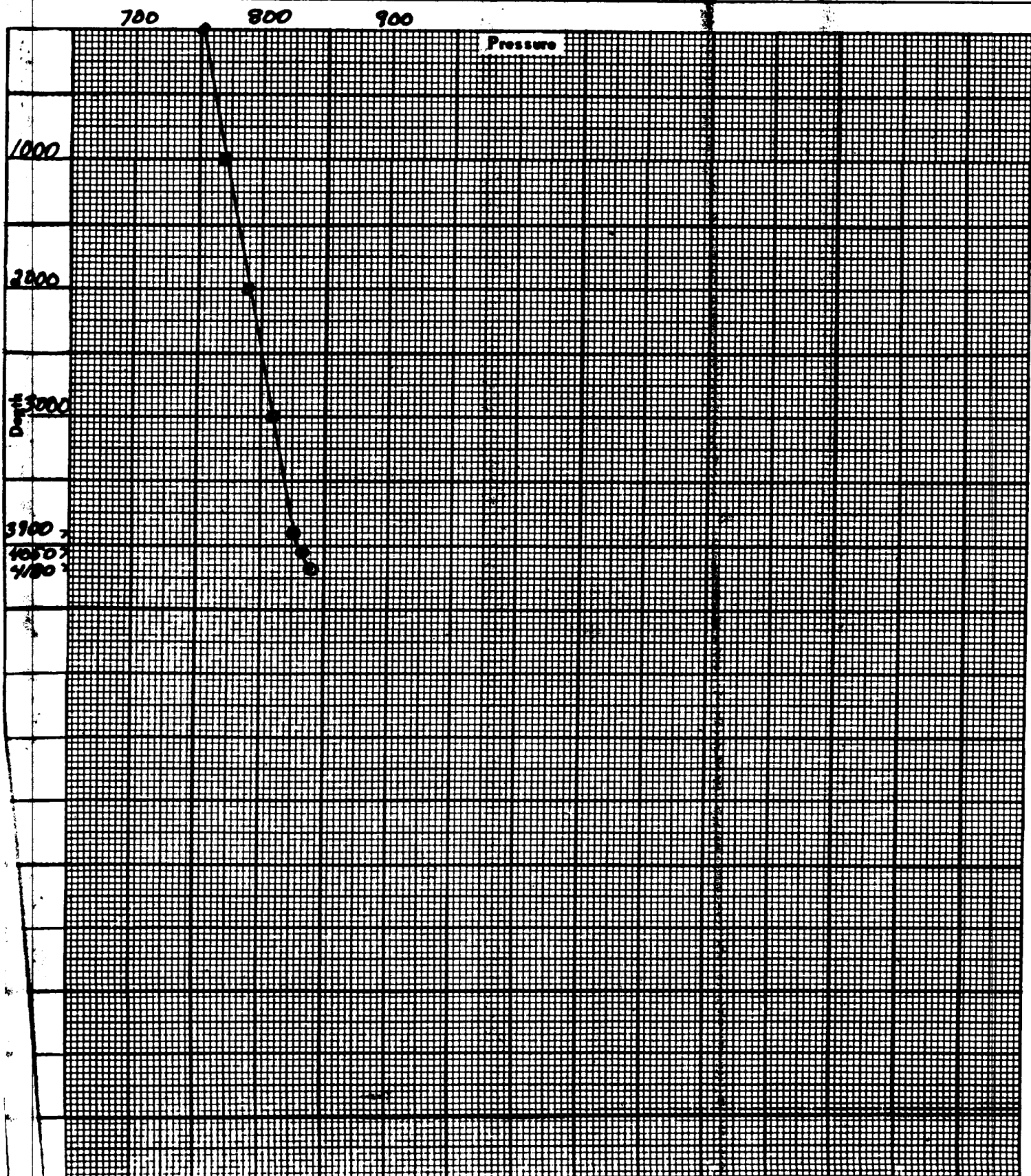
OPERATOR STEVENS OPERATING
LEASE HELEN COLLINS FEDERAL
WELL NO. #6
POOL PECOS SLOPE FORMATION ABO
DATE 05-17-84 TIME 0949 HRS.
CO. MAN MIKE VOWELL
STATUS SHUT IN TEST DEPTH 4050 FEET
TIME S.I. 0830 5-15-84 LAST TEST DATE _____
BHP LAST TEST _____
TUB. PRES. _____ BHP CHANGE _____
CAS. PRES. _____ FLUID TOP _____
DATUM PLANE _____ WATER TOP _____
DATUM PSIA 840 LBS. RUN BY BO FAULKENBERRY
TEMP 105° CLOCK # B3443
PRESSURE RANGE 3500#
ELEMENT NO. RPG3#23914

DEPTH	PSIA PRESSURE	LBS/100 FT GRADIENT
0	752	
1000	769	1.7
2000	789	2.0
3000	809	2.0
3900	827	2.0
4050	834	4.6
4180	840	4.6

4180 FEET WAS EXTRAPOLATED

PERFORATIONS: 4142 TO 4218 FEET

BOTTOM HOLE PRESSURE MEASURED AT: 0949
LENGTH OF TIME WELL SHUT IN. 49 HR 19 MIN



BENNETT-CATHEY WIRE LINE SERVICE
 PHONE (505) 748-3354
 ARTESIA, NEW MEXICO, 88210

PRESSURE TRANSIENT TEST DATA

COMPANY: STEVENS OPERATING
 LEASE: HELEN COLLINS FEDERAL
 FIELD: PECOS SLOPE
 COUNTY: CHAVES
 STATUS: BOTTOM HOLE BUILD UP TEST

CONTACT: MIKE VOWELL
 WELL: #6
 ZONE: ABO
 STATE: NEW MEXICO
 OPERATOR: BO FAULKENBERRY

PERFORATIONS FROM: 4,142.0'
 ELEMENT DEPTH: 4,050.0'

TO: 4,218.0'
 TEMPERATURE: 105.0°F

ELEMENT: RPC3#23060
 CLOCK: 27744
 ELEMENT: RPC3#23914
 CLOCK: 30996

RANGE: 5225 psig
 RANGE: 48 hrs
 RANGE: 5025 psig
 RANGE: 48 hrs

SURFACE PRESSURE MEASUREMENTS

EVENT	DATE	TIME	DEAD WEIGHT PRESSURE
START CLOCK	05/17/84	14:06:00	457.0 psig
SET ELEMENT	05/17/84	14:20:00	457.0 psig
WELL SHUT IN	05/17/84	14:50:00	457.0 psig
END OF TEST	05/18/84	16:13:00	773.0 psig

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	t hrs	GAUGE PRESSURE psig	ABSOLUTE PRESSURE psia	RESERVOIR PRESSURE psia
05/17/84	14:26:37	.390	762.3	775.5	781.5
05/17/84	14:35:00	.250	746.7	759.9	765.9
05/17/84	14:50:00	0.000	728.3	741.5	747.5
05/17/84	14:55:00	.083	749.1	762.3	768.3
05/17/84	15:00:00	.167	760.2	773.4	779.4
05/17/84	15:05:00	.250	766.2	779.4	785.4
05/17/84	15:10:00	.333	769.7	782.9	788.9
05/17/84	15:15:00	.417	772.1	785.3	791.3
05/17/84	15:20:00	.500	775.8	789.0	795.0
05/17/84	15:25:00	.583	778.4	791.6	797.6
05/17/84	15:30:00	.667	779.4	792.6	798.6
05/17/84	15:35:00	.750	780.6	793.8	799.8
05/17/84	15:40:00	.833	782.2	795.4	801.4
05/17/84	15:45:00	.917	783.8	797.0	803.0
05/17/84	15:50:00	1.000	785.4	798.6	804.6
05/17/84	16:05:00	1.250	788.8	802.0	808.0
05/17/84	16:20:00	1.500	791.5	804.7	810.7
05/17/84	16:35:00	1.750	794.2	807.4	813.4
05/17/84	16:50:00	2.000	796.1	809.3	815.3
05/17/84	17:05:00	2.250	797.6	810.8	816.8
05/17/84	17:20:00	2.500	799.1	812.3	818.3
05/17/84	17:35:00	2.750	800.7	813.9	819.9

BENNETT-CATHEY WIRE LINE SERVICE
 PHONE (505) 748-3354
 ARTESIA, NEW MEXICO, 88210

•
 PRESSURE TRANSIENT TEST DATA

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	t hrs	GAUGE PRESSURE psig	ABSOLUTE PRESSURE psia	RESERVOIR PRESSURE psia
05/17/84	17:50:00	3.000	802.3	815.5	821.5
05/17/84	18:05:00	3.250	803.9	817.1	823.1
05/17/84	18:20:00	3.500	805.4	818.6	824.6
05/17/84	18:35:00	3.750	806.4	819.6	825.6
05/17/84	18:50:00	4.000	807.4	820.6	826.6
05/17/84	19:05:00	4.250	808.4	821.6	827.6
05/17/84	19:20:00	4.500	809.3	822.5	828.5
05/17/84	19:35:00	4.750	810.0	823.2	829.2
05/17/84	19:50:00	5.000	810.8	824.0	830.0
05/17/84	20:05:00	5.250	811.5	824.7	830.7
05/17/84	20:20:00	5.500	812.4	825.6	831.6
05/17/84	20:35:00	5.750	813.4	826.6	832.6
05/17/84	20:50:00	6.000	814.3	827.5	833.5
05/17/84	21:05:00	6.250	815.2	828.4	834.4
05/17/84	21:20:00	6.500	815.9	829.1	835.1
05/17/84	21:35:00	6.750	816.5	829.7	835.7
05/17/84	21:50:00	7.000	817.2	830.4	836.4
05/17/84	22:05:00	7.250	817.7	830.9	836.9
05/17/84	22:20:00	7.500	818.2	831.4	837.4
05/17/84	22:35:00	7.750	818.6	831.8	837.8
05/17/84	22:50:00	8.000	819.1	832.3	838.3
05/17/84	23:05:00	8.250	819.6	832.8	838.8
05/17/84	23:20:00	8.500	820.2	833.4	839.4
05/17/84	23:35:00	8.750	820.9	834.1	840.1
05/17/84	23:50:00	9.000	821.5	834.7	840.7
05/18/84	00:05:00	9.250	822.0	835.2	841.2
05/18/84	00:20:00	9.500	822.5	835.7	841.7
05/18/84	00:35:00	9.750	822.9	836.1	842.1
05/18/84	00:50:00	10.000	823.4	836.6	842.6
05/18/84	01:20:00	10.500	824.3	837.5	843.5
05/18/84	01:50:00	11.000	825.5	838.7	844.7
05/18/84	02:20:00	11.500	826.8	840.0	846.0
05/18/84	02:50:00	12.000	828.2	841.4	847.4
05/18/84	03:20:00	12.500	828.6	841.8	847.8
05/18/84	03:50:00	13.000	829.0	842.2	848.2
05/18/84	04:20:00	13.500	829.3	842.5	848.5
05/18/84	04:50:00	14.000	830.0	843.2	849.2
05/18/84	05:20:00	14.500	830.6	843.8	849.8
05/18/84	05:50:00	15.000	831.2	844.4	850.4
05/18/84	06:50:00	16.000	832.4	845.6	851.6
05/18/84	07:50:00	17.000	834.0	847.2	853.2
05/18/84	08:50:00	18.000	835.8	849.0	855.0
05/18/84	09:50:00	19.000	837.3	850.5	856.5
05/18/84	10:50:00	20.000	838.6	851.8	857.8
05/18/84	12:50:00	22.000	840.6	853.8	859.8
05/18/84	14:50:00	24.000	843.5	856.7	862.7

BENNETT-CATHEY WIRE LINE SERVICE
PHONE (505) 748-3354
ARTESIA, NEW MEXICO, 88210

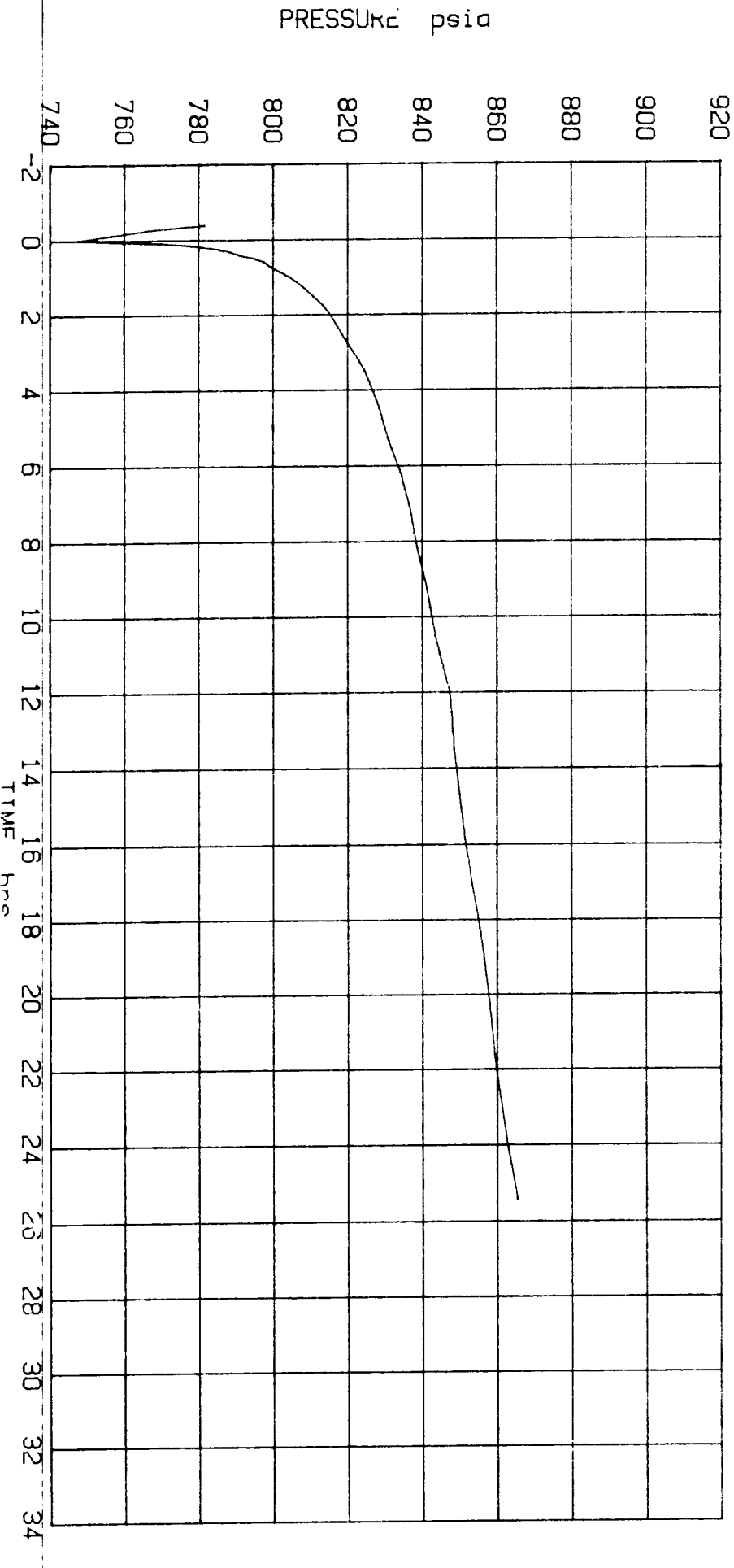
PRESSURE TRANSIENT TEST DATA

SUBSURFACE PRESSURE MEASUREMENTS

DATE	TIME	t hrs	GAUGE PRESSURE psig	ABSOLUTE PRESSURE psia	RESERVOIR PRESSURE psia
05/18/84	16:14:30	25.408	846.2	859.4	865.4

TEST DATE: 05/17/84 TO 05/18/84
 TEST DEPTH: 4050 ft
 ELEMENT NO: RPG3#23914
 RANGE: 5025 psig
 CLOCK: 30996
 RANGE: 48 hrs
 OPERATOR: BO FAULKENBERRY

MIKE VOWELL
STEVENS OPERATING
HELEN COLLINS FEDERAL #6
BENNETT-CATHEY WIRE LINE SERVICE Box 787 Artesia, N.M. 88210 (505) 748-3354



COMPANY: STEVENS OPERATING
LEASE: HELEN COLLINS FEDERAL
FIELD: PECOS SLOPE
COUNTY: CHAVES
STATUS: BOTTOM HOLE BUILD UP TEST

CONTACT: MIKE VOWELL
WELL: #6
ZONE: ABO
STATE: NEW MEXICO
OPERATOR: BO FAULKENBERRY

PERFORATIONS FROM: 4142 ft
DEPTH: 4050 ft

TO: 4218 ft
TEMPERATURE: 105°F

ELEMENT# RPG3#23060
CLOCK# 27744
ELEMENT# RPG3#23914
CLOCK# 30996

RANGE: 5225 psi
RANGE: 48 hrs
RANGE: 5025 psi
RANGE: 48 hrs

START CLOCK	05/17/84	14:06:00	457 psi
SET ELEMENT	05/17/84	14:20:00	457 psi
WELL SHUT IN	05/17/84	14:50:00	457 psi
TEST ENDED	05/18/84	16:13:00	773 psi

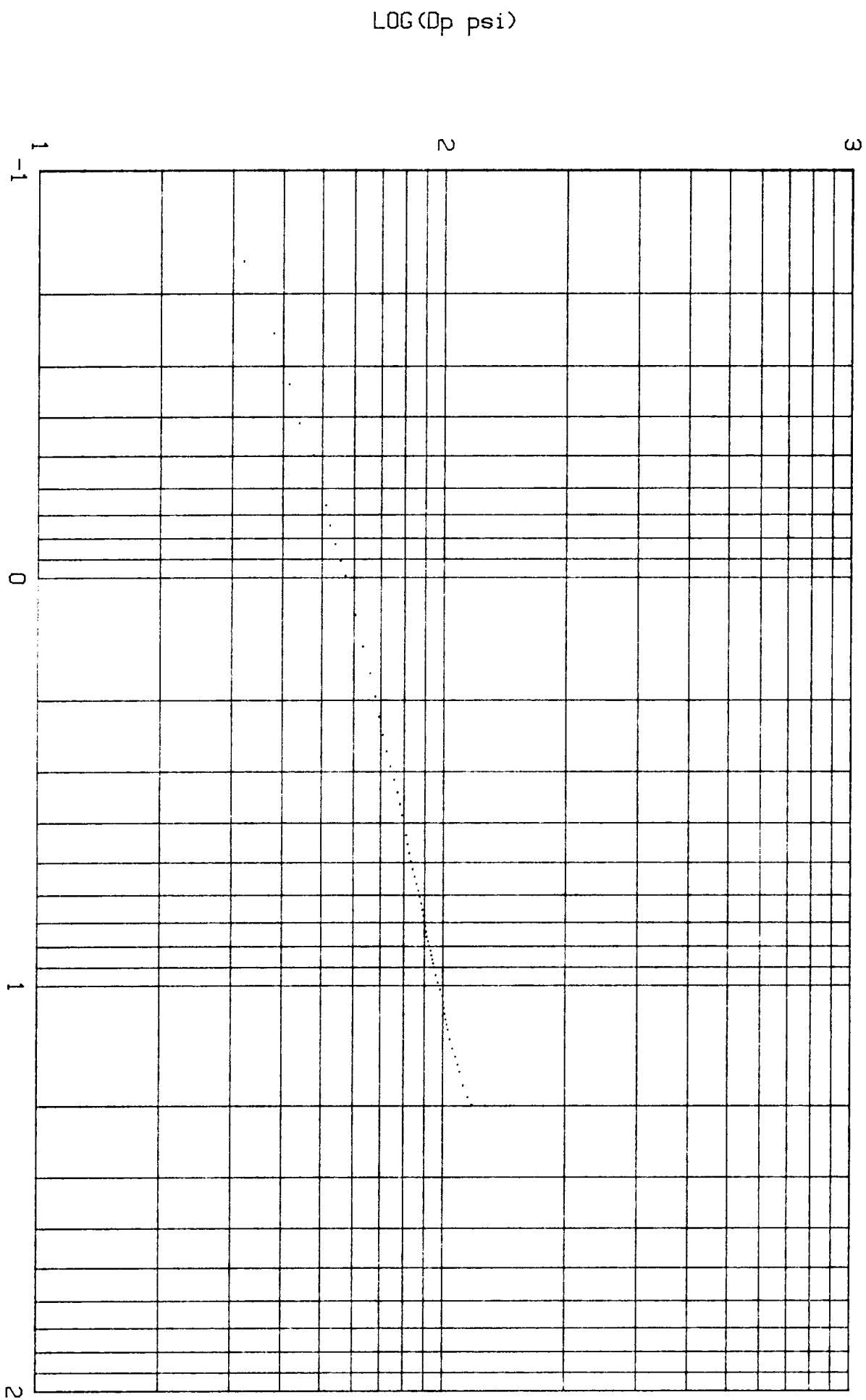
pA= 13.2 psia
CD= 0
Gain= 1
twf= 0 hrs
tp= 92 hrs
m= 0 psi/cycle

FILE: HC #6B/3:D701
FLOW: LINEAR
Bias= 6 psi
pwf= 747.48 psia
dps= 0 psi
p*= 0 psia

STEVENS OPERATING
5-17-84 TO 5-18-84

HELEN COLLINS FEDERAL #6

COMPANY MAN MIKE VOWELL



STEVENS OPERATING
5-17-84 TO 5-18-84

HELEN COLLINS FEDERAL #6

COMPANY MAN MIKE VOWELL

p psia

