

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FORECASTED BY

dsFile
Form C-122
Revised 9-1-65

APR 20 1984

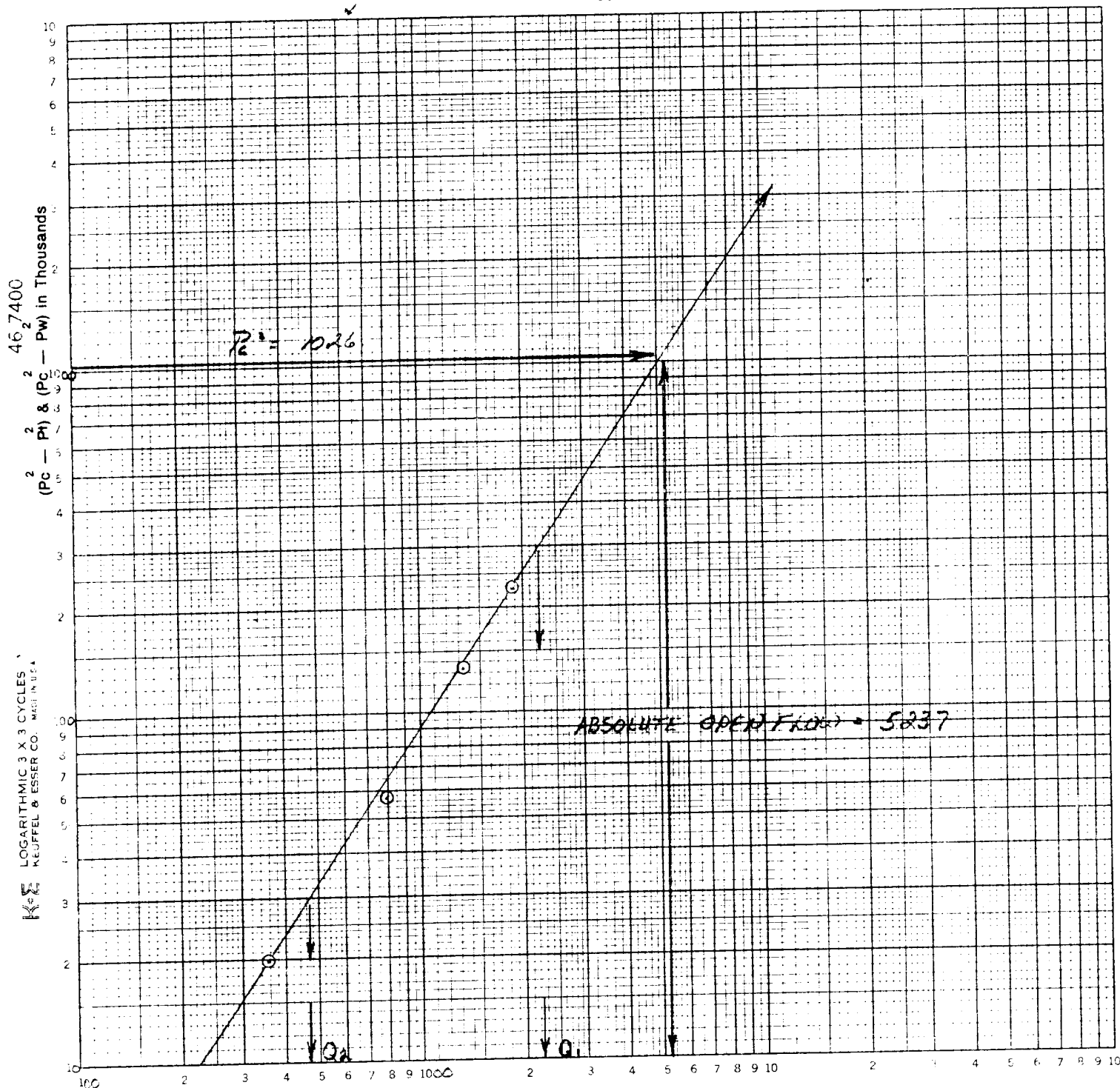
Type Test ☒ Initial 4-POINT ☐ Annual ☐ Special				Test Date 9-21-83		O C. D.																																																																																															
Company STEVENS OPERATING				Connection TO AIR																																																																																																	
Pool PECOS SLOPE U.D. <i>Ado</i>				Formation ABO		Unit 1																																																																																															
Completion Date 12-29-83 1-4-83		Total Depth 4590		Plug Back 4518-4528		Elevation 3657.2																																																																																															
Casing Size 4.500		Wt. 10.5		Set At 4518		Perforations: From 4075 To 4312																																																																																															
Tub. Size 2.375		Wt. 4.7		Set At 3978		Perforations: From OPEN To ENDED																																																																																															
Type Well - Single - Wardenhead - G.G. or G.O. Multiple SINGLE				Packer Set At 3978		County CHAVES																																																																																															
Producing Thru TUBING		Reservoir Temp. °F 111 4119		Mean Annual Temp. °F 60°		Baro. Press. - P _a 13.2																																																																																															
L 4119		H 4119		Cg .641		% CO ₂ .093																																																																																															
				% N ₂ 5.106		% H ₂ S 0																																																																																															
				Provor 2.00		Motor Run 0																																																																																															
				Taps 0																																																																																																	
<table border="1"> <thead> <tr> <th colspan="6">FLOW DATA</th> <th colspan="2">TUBING DATA</th> <th colspan="2">B.H.P. DATA</th> <th rowspan="2">Duration of Flow</th> </tr> <tr> <th>NO.</th> <th>Provor Line Size</th> <th>X</th> <th>Orifice Size</th> <th>Press. p.s.i.g.</th> <th>Diff. h_w</th> <th>Temp. °F</th> <th>Press. p.s.i.g.</th> <th>Temp. °F</th> <th>Press. p.s.i.g.</th> <th>CHOKE</th> </tr> </thead> <tbody> <tr> <td>51</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>993</td> <td></td> <td>1110</td> <td></td> <td>72.250</td> </tr> <tr> <td>1.</td> <td>2.000</td> <td>X</td> <td>.125</td> <td>982</td> <td>0.00</td> <td>63°</td> <td>982</td> <td>64°</td> <td>1099</td> <td>48/64</td> <td>1.0</td> </tr> <tr> <td>2.</td> <td>2.000</td> <td>X</td> <td>.1875</td> <td>960</td> <td>0.00</td> <td>65°</td> <td>960</td> <td>67°</td> <td>1078</td> <td>48/64</td> <td>1.0</td> </tr> <tr> <td>3.</td> <td>2.000</td> <td>X</td> <td>.250</td> <td>912</td> <td>0.00</td> <td>70°</td> <td>912</td> <td>70°</td> <td>1034</td> <td>48/64</td> <td>1.0</td> </tr> <tr> <td>4.</td> <td>2.000</td> <td>X</td> <td>.3125</td> <td>844</td> <td>0.00</td> <td>70°</td> <td>844</td> <td>70°</td> <td>977</td> <td>48/64</td> <td>1.0</td> </tr> <tr> <td>5.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								FLOW DATA						TUBING DATA		B.H.P. DATA		Duration of Flow	NO.	Provor 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.	CHOKE	51							993		1110		72.250	1.	2.000	X	.125	982	0.00	63°	982	64°	1099	48/64	1.0	2.	2.000	X	.1875	960	0.00	65°	960	67°	1078	48/64	1.0	3.	2.000	X	.250	912	0.00	70°	912	70°	1034	48/64	1.0	4.	2.000	X	.3125	844	0.00	70°	844	70°	977	48/64	1.0	5.											
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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 _{sp}	Rate of Flow Q, Mcld																																																																																														
1	0.2648	0.00	995.2	.9971	1.249	1.088	357																																																																																														
2	0.6082	0.00	973.2	.9952	1.249	1.083	797																																																																																														
3	1.087	0.00	925.2	.9840	1.249	1.076	1330																																																																																														
4	1.672	0.00	857.2	.9840	1.249	1.071	1886																																																																																														
5																																																																																																					
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl. A.P.I. Gravity of Liquid Hydrocarbons _____ Deg. Specific Gravity Separator Gas _____ .641 Specific Gravity Flowing Fluid _____ .641 Critical Pressure _____ 665 P.S.I.A. Critical Temperature _____ 357 °R																																																																																																
1	1.50	523	1.46	.845																																																																																																	
2	1.46	525	1.47	.852																																																																																																	
3	1.37	530	1.48	.863																																																																																																	
4	1.27	530	1.48	.872																																																																																																	
5																																																																																																					
$P_c = 1012.8$ $P_c^2 = 1025.7$					$(1) \frac{P_c^2}{P_r^2 - P_w^2} = 4.5405$																																																																																																
$(2) \left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 2.7768$																																																																																																					
NO.	P _r	P _w	P _w ²	P _r ² - P _w ²	$AOI = 0 \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 5237.0$																																																																																																
1		1003	1006.0	19.7																																																																																																	
2		984	968.8	56.9																																																																																																	
3		945	893.3	132.4																																																																																																	
4		894	799.8	225.9																																																																																																	
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Absolute Open Flow _____ 5237 Mcld @ 15.025					Angle of Slope _____ 56°		Slope, n _____ 0.675																																																																																														
REMARKS: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE ELEMENTS.																																																																																																					
Approved By Commission		Conducted By: RICHARD TOWNLEY		Calculated By: BENNETT & CATHEY		Checked By:																																																																																															

BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CURV

2987

Operator Sterens Operating Lease Allen Collins Fed. Well No. 2
 County Chaves Field Pecos Slope U.D. Location 9 75 26E
 Date of Test 9-21-83 Slope "n" 0.675 Angle of Slope 56°

Calc. Abs. Potential 5237 MCF/D



$$\Delta P_1^2: P_c^2 - P_w^2 = 300$$

$$\Delta P_2^2: P_c^2 - P_w^2 = 30$$

$$Q_1 = 2233$$

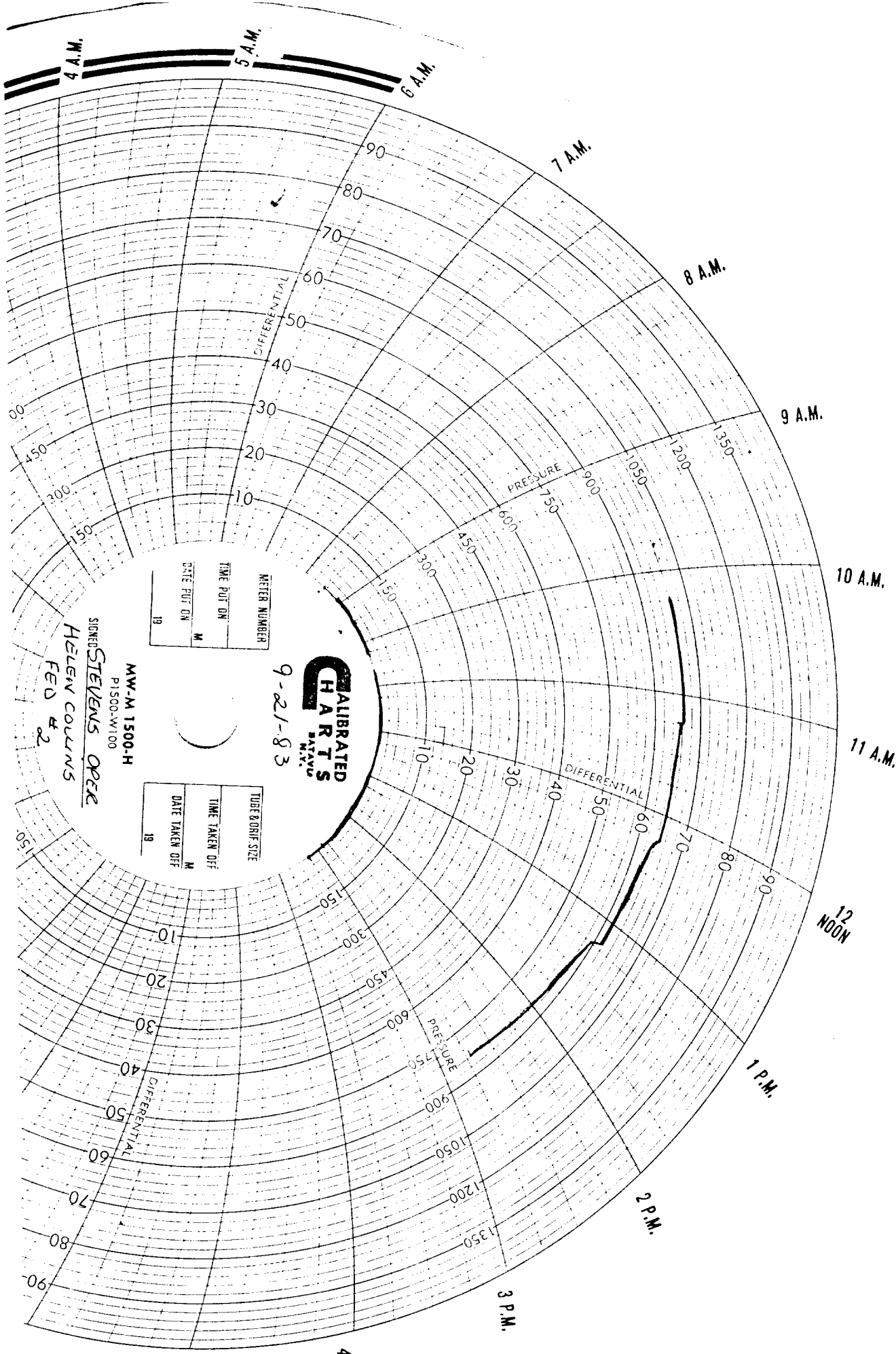
$$Q_2 = 472$$

Q in MCF/Day

$$\log Q_1 = 3.3489$$

$$\log Q_2 = 2.6739$$

$$n = 0.675$$



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

RECEIVED BY

APR 20 1984

S O. C. D.
ARTESIA, OFFICE

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

4 POINT BACK PRESSURE TEST

[illegible]

TEST DATE: 9-21-83
TEST DEPTH: 4,119 FEET

ELEMENT NO.: RFG#21121N
RANGE: 5175 LBS.

CLOCKS: B-3443
RANGE: 12 HOUR

OPERATOR: RICHARD TOWNLEY

Note: See Attached Sheet for Tabulation of Pressure
And Time.

4 POINT BACK PRESSURE TEST

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APR 20 1984

O.C.D.
ARTESIA OFFICE

MIKE VOWELL

STEVENS OPERATING

HELEN COLLINS FEDERAL #2

BENNETT-CATHEY WIRE LINE SERVICE

Box 787

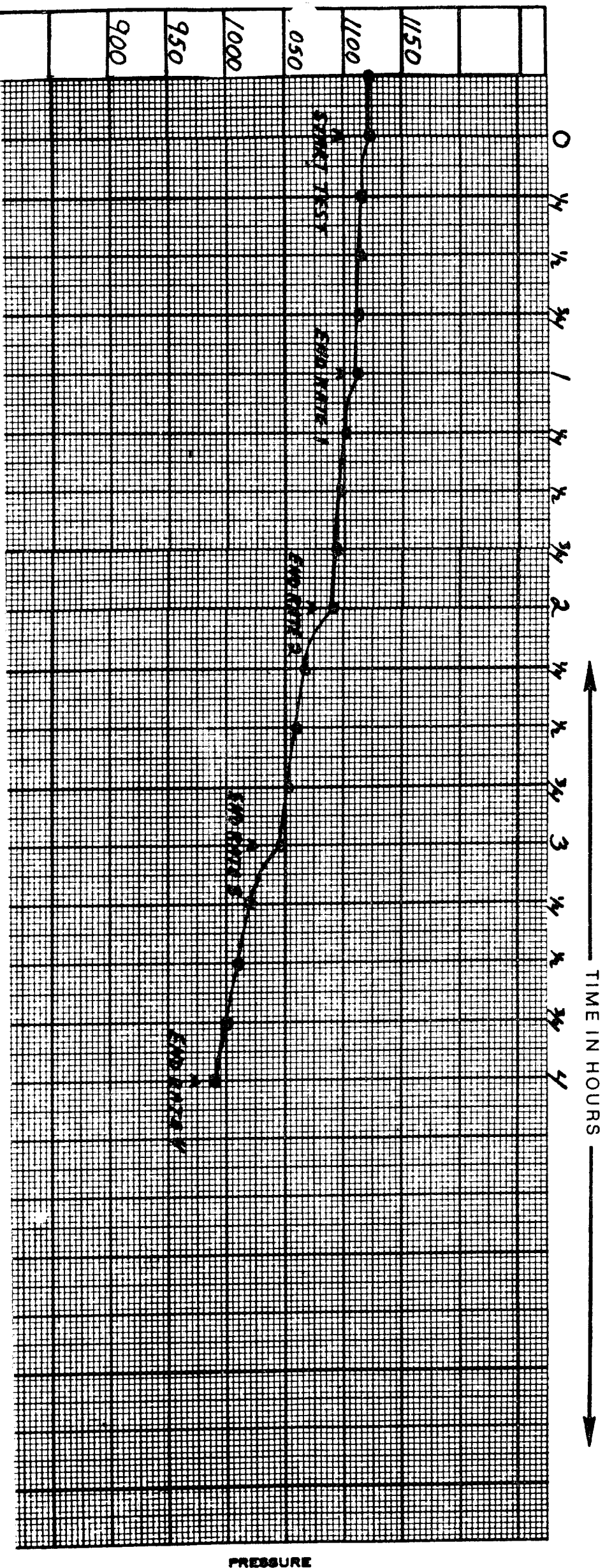
Artesia, N.M. 88210

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

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APR 20 1984

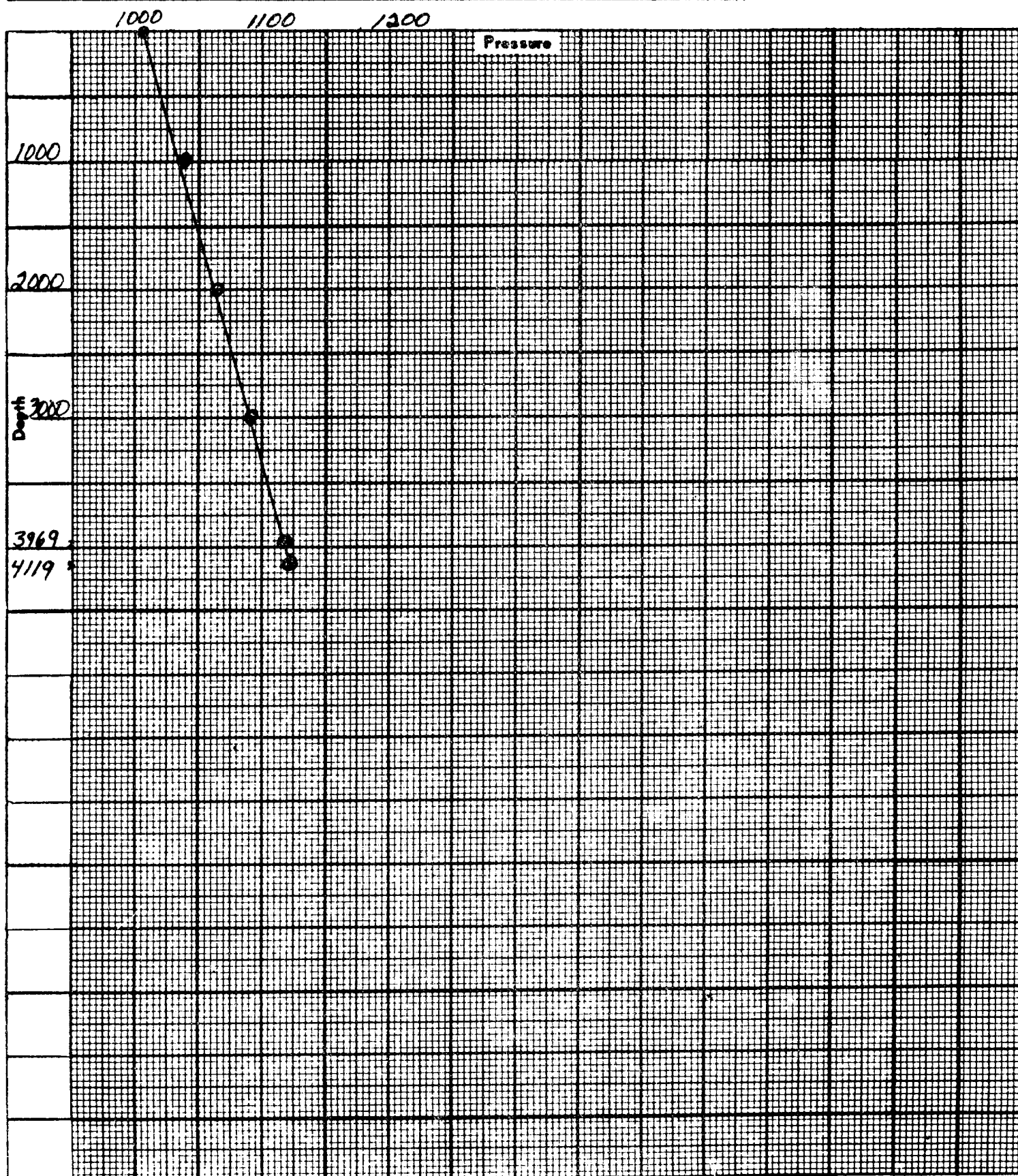
BOTTOM HOLE PRESSURE SURVEY REPORT

O. C. D.
ARTESIA, OFFICE

OPERATOR STEVENS OPERATING
LEASE HELEN COLLINS FEDERAL
WELL NO. #2
POOL FORMATION
DATE 9-21-83 TIME 1007 HOUR
CO. MAN MIKE VOWELL
STATUS SHUT IN TEST DEPTH 4,119 FEET
TIME S.I. 0800 HOUR LAST TEST DATE 1ST TEST
9-18-83 BHP LAST TEST
TUB. PRES. 1006.2# BHP CHANGE
CAS. PRES. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 1123.2# RUN BY BO FAULKENBERRY
TEMP 96° CLOCK # B-3443
PRESSURE RANGE 5175LBS 5150LBS
ELEMENT NO. RPG3#21121N RPG3#22749

DEPTH	PRESSURE	GRADIENT
0	1006.2	
1000	1038.2	3.2
2000	1064.2	2.6
3000	1092.2	2.8
3969	1118.2	2.6
4119	1123.2	3.3

TIME B.H.P. MEASURED 1007 HOUR.
LENGTH OF TIME WELL SHUT IN 74HR 7MI



"It is our Interest in Measurement be our Concern"



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

O. C. D.
ARTESIA, OFFICE

Run No. 921-7
Date Run 09/21/83
Date Sampled 09/21/83

Analysis For: STEVENS OPERATING CORP

Lease: Helen Collins #2
Location: Pecos Slope
Purpose: Well Test
Sampling Temp: 70 °F
Volume/day: 1600 MCF
Pressure on Bomb: 840
Producer: Stevens Operating
County: Chaves State: New Mexico
Sampled By: B & C WRLN.
Atmos Temp: 70 °F
Formation: ABO
PSIG, Line Pressure: 340 PSIG

Gas Component Analysis Press. Base: 14.73

	Mol. %	Liq. %	GPM Per MCF
Carbon Dioxide CO ₂	.093		
Oxygen O ₂	.086		
Nitrogen N ₂	5.106		
Hydrogen Sulfide H ₂ S			
Methane C ₁	87.133		14.735
Ethane C ₂	4.458		1.189
Propane C ₃	1.708		.469
Iso-Butane IC ₄	.288		.094
Nor-Butane NC ₄	.528		.166
Iso-Pentane IC ₅	.168		.061
Nor-Pentane NC ₅	.188		.068
exanes plus	.246		.107
Hexanes C ₆			
eptanes			
Heptanes Plus C ₇ +			
Total	100.000		16.889
Pentane + G.P.M.			.236
opane + GPM			.965
-lb Gasoline			.795

BTU Dry 1060
BTU Wet 1059
Calc. Specific Gravity .441

@ Std. Press. 14.696
BTU Dry 1058
BTU Wet 1057

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

Z Factor .9277
N Value 1.3042
Ave Mol Wt 18.5303
Ave Cu Ft/Gal

Run by Jeffrey A. Propp

Calculated By Jeffrey A. Propp

Ethane + GPM 2.154

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

Distribution: