EW MEXICO OIL CONSERVATION CC SSION

MULTIPOINT AND ONE POINT BACK PRESSURE LST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: ☒ Initial FOUR POINT ☐ Annual ☐ Special			Test Date: 1-20-82 RECEIVED	1980 FWL
Company: J. JACK GRYNBURG [redacted]	Connection: AIR NEW WELL			660 FSL
Pool: WILDCAT Wolfcamp	Formation: WOLFCAMP FEB 08 '88			Unit: N
Completion Date: 1-18-82	Total Depth:	Plug Back TD: 4518	Elevation: O. C. D. ARTESIA OFFICE	Farm or Lease Name: SOUTH COTTONWOOD DRAW UNIT
Csg. Size: 4.50 / Wt.: 10.5 / d: 4.052 / Set At: 4518		Perforations: From 4292 To 4350		Well No.: 1
Tbg. Size: 2.375 / Wt.: 4.7 / d: 1.995 / Set At: 4197		Perforations: From OPEN To ENDED		Unit: N / Sec.: 29 / Twp.: 16S / Rge.: 24E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE		Packer Set At: 4104		County: EDDY
Producing Thru: TUBING	Reservoir Temp. °F: 117@ 4321	Mean Annual Temp. °F: 60°	Baro. Press. – P_a: 13.2	State: NEW MEXICO

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
4321	4321	.699	4.81	6.27		2.00		

	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					42	1358	50	1545		48 HRS.
1.	2.00	X .125	370	0	48	1269	49	1445		1
2.	2.00	X .250	175	0	55	1127	50	1283		1
3.	2.00	X .250	250	0	61	942	54	1076		1
4.	2.00	X .250	270	0	63	485	66	577		1
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	.2716	.00	383.2	1.0117	1.1961	1.0375	131
2	1.1150	.00	188.2	1.0048	1.1961	1.0181	257
3	1.1150	.00	263.2	.990	1.1961	1.0244	359
4	1.1150	.00	283.2	.9971	1.1961	1.0260	386
5							

NO.	P_r	Temp. °R	T_r	Z
1	.56	508	1.40	.929
2	.28	515	1.42	.965
3	.39	521	1.43	.953
4	.42	523	1.44	.950
5				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas .6990 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 679 P.S.I.A. _____ P.S.I.A.
Critical Temperature 363 R _____ R

P_c 1558.2 P_c^2 2428.0

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		1458.2	2126.3	302.0
2		1296.2	1680.1	748.0
3		1089.2	1186.4	1242.0
4		590.2	348.3	2080.8
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.9549$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.6165$

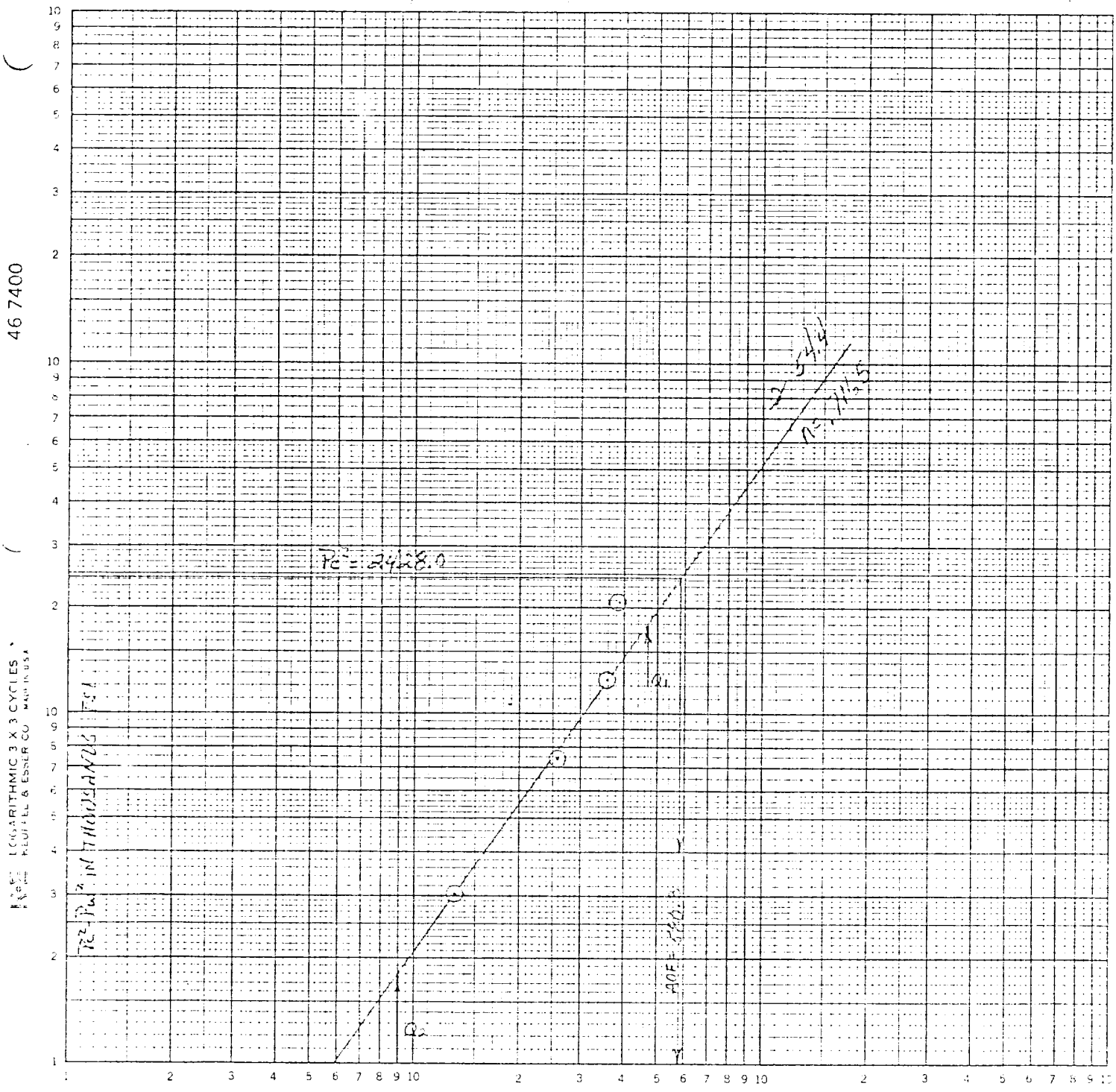
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 580.3$

Absolute Open Flow 580.3 Mcfd @ 15.025 Angle of Slope θ 54.4 Slope, n .7165

Remarks: BOTTOM HOLE PRESSURES MEAASURED WITH AMERADA PRESSURE GUAGES

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	RICHARD TOWNLEY	BENNETT-CATHEY	

SOUTH COTTONWOOD DR. #1
N -29- 16S - 24E
EDDY COUNTY
1-20-82



$\Delta P_1^2 = P_c^2 - P_{s1}^2 = 1800.$

$\Delta P_2^2 = P_c^2 - P_{s2}^2 = 1954$

$Q_1 = 90$

$Q_2 = 465.5$

LOG Q_1 = [illegible]

LOG $Q_2 = 1.9542$

n = .7115

[illegible] LAB
P. O. BOX [illegible]
[illegible] [illegible] [illegible]
[illegible]

ANALYSIS NUMBER: 6816
DATE OF RUN: 1/21/92
DATE SECURED:

ANALYSIS CERTIFICATE

SAMPLE IDENT: CAIN BRYNELSE & ASSOC. - S. COTTON WOOD DRAW #1

CLIENT: BENNETT & CATHEY INC.
WELL: BIG TOT
CITY, STATE: ARTESIA NM [illegible]

SAMPLING PRESS @ PSIG SAMPLING TEMP @ DEG F
STATION NUMBER: EDDY CO., N.M.

********** GAS ANALYSIS **********

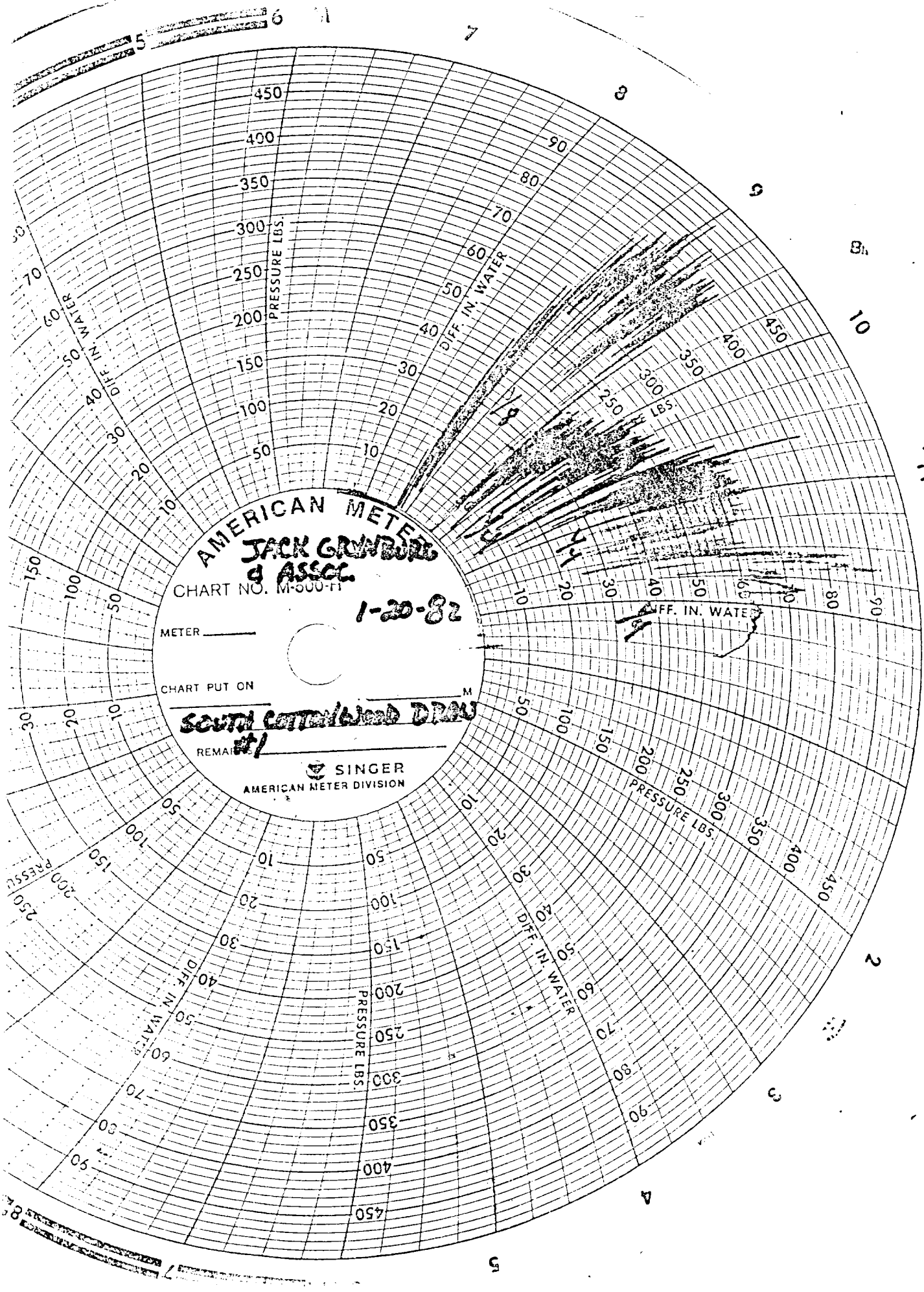
	MOL %	GAL/MCF
NITROGEN	0.[illegible]	
CARBON DIOXIDE	0.[illegible]	
METHANE	71.[illegible]	
ETHANE	[illegible]	[illegible]
PROPANE	[illegible]	[illegible]
ISOBUTANE	[illegible]	[illegible]
N-BUTANE	[illegible]	[illegible]
ISOPENTANE	[illegible]	[illegible]
N-PENTANE	[illegible]	[illegible]
HEXANE PLUS	[illegible]	[illegible]
TOTAL	100.[illegible]	[illegible]

PROPANE GPM: [illegible] BUTANES GPM: [illegible]
C5+ GPM: [illegible] PENTANES PLUS GPM: [illegible]

[illegible] (CALC.): [illegible]
REAL GRAVITY: [illegible]

REAL BTU/CU FT	PRESSURE (PSIA)	WET	DRY
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

ANALYZED BY: [illegible] APPROVED BY: [illegible]


AMERICAN METER
JACK GRAHAM & ASSOC.
CHART NO. M-500-H
1-20-82
METER
CHART PUT ON
M
SOUTH CATTAIL WASH DRAW #1
REMARKS
SINGER
AMERICAN METER DIVISION
PRESSURE LBS.
DIFF. IN. WATER
NOON

BENNETT - CATHEY
Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY JACK GRYNBURG & ASSOCIATES WELL NAME SOUTH COTTONWOOD DRAW WELL NO. 1
DATE OF TEST 1-20-82 FORMATION PAGE 1 OF 1

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #43798 RANGE 7,000 LBS.
CLOCK NUMBER RANGE 12 HOURS
TIME WELL SHUT IN 1405 HOURS
TIME CLOCK STARTED 738 HOURS
DEAD WEIGHT ELEMENT ON SURFACE 1371 LBS.
TIME ELEMENT REACHED BOTTOM 840 HOURS
DEAD WEIGHT ELEMENT ON BOTTOM 1371 HOURS LBS.
ELEMENT SET AT 4192 FEET.
TEMPERATURE 4192 FT. 117 °F.
DEAD WEIGHT AT THE END OF 48 HOURS 40 MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
1-20-82	0	0845		1538	20.2		1558
	1/4	0900		1521	20.2		1541
	1/2	0915		1475	20.2		1495
	3/4	0930		1441	20.2		1461
	1	0945		1438	20.2		1458
	1-1/4	1000		1404	20.2		1424
	1-1/2	1015		1363	20.2		1383
	1-3/4	1030		1314	20.2		1334
	2	1045		1276	20.2		1296
	2-1/4	1100		1214	20.2		1234
	2-1/2	1115		1154	20.2		1174
	2-3/4	1130		1104	20.2		1124
	3	1145		1069	20.2		1089
	3-1/4	1200		913	20.2		933
	3-1/2	1215		770	20.2		790
	3-3/4	1230		639	20.2		659
	4	1245		572	20.2		592

TEST DATE: 1-20-82
TEST DEPTH: 4,192

ELEMENT NO.: RPG3 #43798
RANGE: 7,000 LBS.

CLOCKS:
RANGE: 12 HOURS

OPERATOR: RICHARD TOWNLEY

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

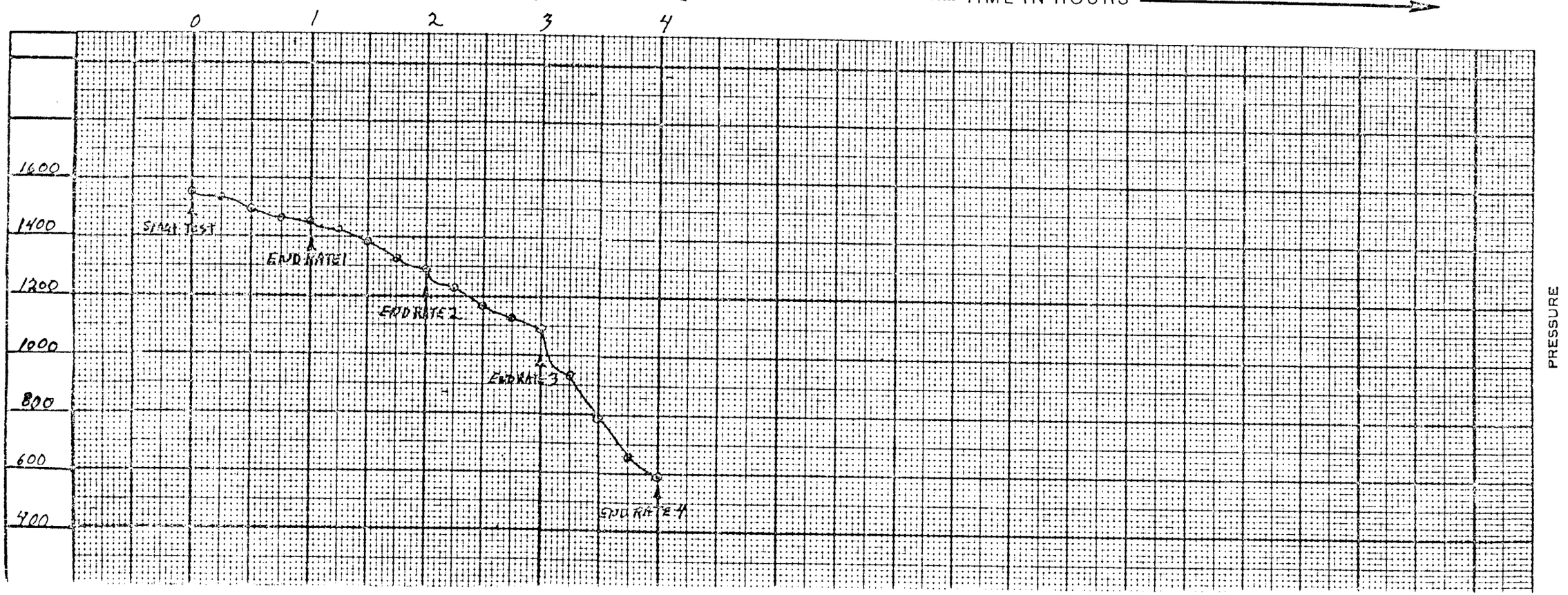
RUDY PITTMAN

JACK GRYNBURG & ASSOCIATES

BENNETT-CATHEY WIRE LINE SERVICE
Box 787 Artesia, N.M. 88210 505/746-3281
Drawn By Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES

UR POINT BACK PRESSURE TEST



BEN NETT-CATHEY WIRE LIN. SERVICE
P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone 746-3281

BOTTOM HOLE PRESSURE SURVEY REPORT

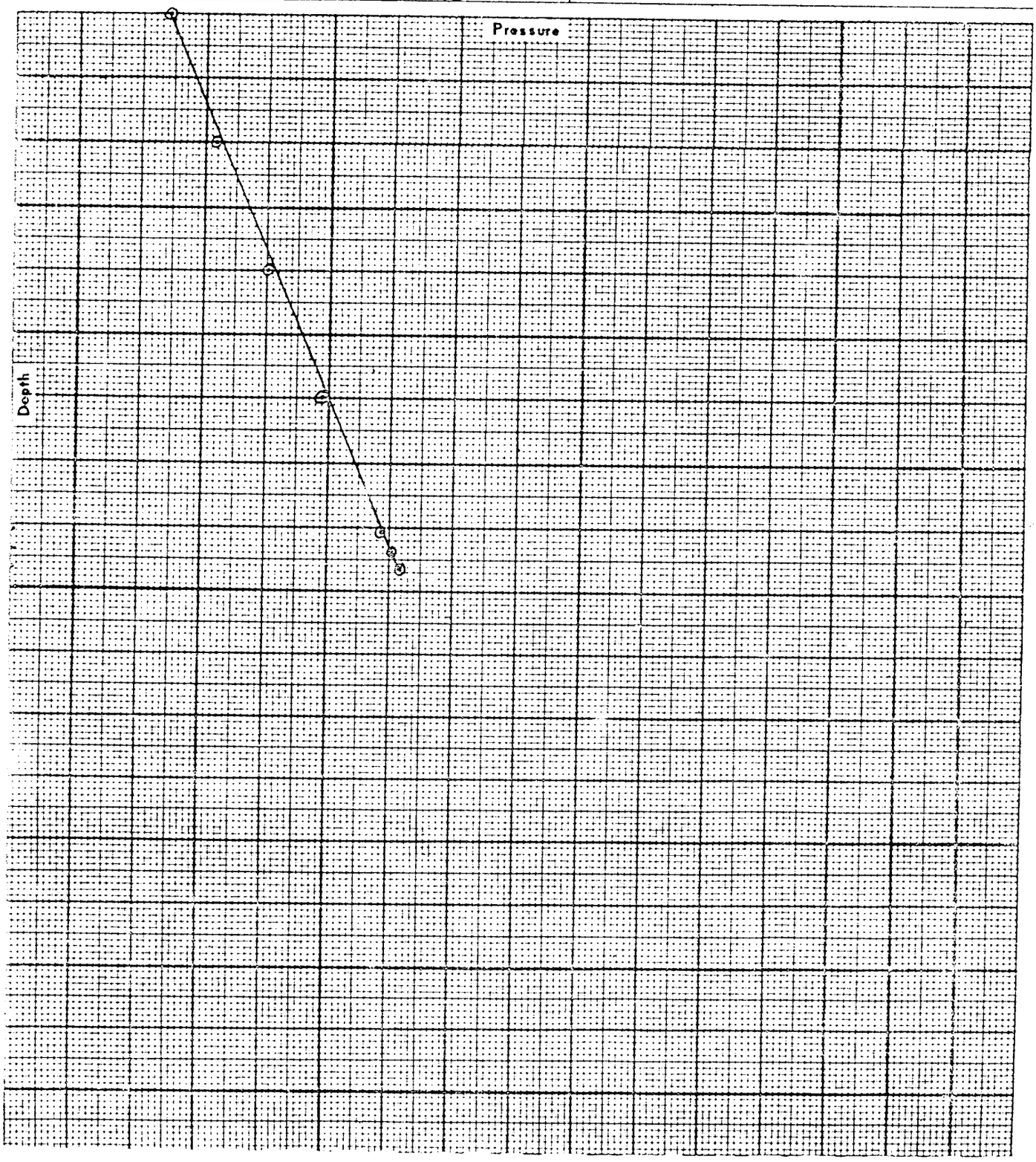
OPERATOR JACK GRYNBURG
LEASE SOUTH COTTONWOOD DRAW
WELL NO. 1
POOL _____ FORMATION WOLFCAMP
DATE 1-20-82 TIME 0840 HOURS

STATUS SHUT IN TEST DEPTH 4,321 FEET
TIME S.I. 0800 HRS. LAST TEST DATE 1ST TEST
CAS. PRES. 1-1-8-82 BHP LAST TEST _____
TUB. PRES. 1371 BHP CHANGE _____
ELE. _____ FLUID TOP _____
DATUM PLANE _____ WATER TOP _____
DATUM PSIA 1558 RUN BY BO FAULKENBERRY
TEMP 117° PRESSURE RANGE 7,000 LBS.
CLOCK NO. _____
ELEMENT NO. RPG3 #43798

DEPTH	PRESSURE	GRADIENT
0	1371	
1,000	1409	3.8
2,000	1451	4.2
3,000	1495	4.6
4,042	1543	4.6
4,192	1551	5.3
4,321	1558	5.3

TIME B.H.P. MEASURED: 0840 HRS.

LENGTH OF TIME WELL SHUT IN: 48 HRS. 40 MIN.



BENNETT - CATHEY
Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

RECEIVED
FEB 08 '88
ARTESIA, OFFICE

COMPANY JACK GRYNBURG WELL NAME SOUTH COTTONWOOD DRAW
DATE OF TEST 1-22-82 FORMATION WOLFCAMP

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #43798 RANGE 7,000 LBS.
CLOCK NUMBER 63179 RANGE 144 HOURS, DOUBLE PITCH LEAD
TIME WELL SHUT IN 1405 HOURS 1-22-82
TIME CLOCK STARTED 1337 HOURS
DEAD WEIGHT ELEMENT ON SURFACE 930 PSIA FLOWING LBS.
TIME ELEMENT REACHED BOTTOM 1402 HOURS 1-22-82
DEAD WEIGHT ELEMENT ON BOTTOM 340 PSIA FLOWING LBS.
ELEMENT SET AT 4192 FEET.
TEMPERATURE 4192 FT. 102 °F.
DEAD WEIGHT AT THE END OF 48 HOURS 55 MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
1-20-82	0	1405		389	20.2		409
	1/4	1420		646	20.2		666
	1/2	1435		859	20.2		879
	3/4	1450		1028	20.2		1048
	1	1505		1113	20.2		1133
	1-1/4	1520		1179	20.2		1199
	1-1/2	1535		1225	20.2		1245
	1-3/4	1550		1260	20.2		1280
	2	1605		1285	20.2		1305
	2-1/4	1620		1305	20.2		1325
	2-1/2	1635		1318	20.2		1338
	2-3/4	1650		1335	20.2		1355
	3	1705		1350	20.2		1370
	3-1/2	1735		1370	20.2		1390
	4	1805		1388	20.2		1408
	4-1/2	1835		1399	20.2		1419
	5	1905		1409	20.2		1429
	5-1/2	1935		1416	20.2		1436
	6	2005		1425	20.2		1445
	6-1/2	2035		1432	20.2		1452
	7	2105		1435	20.2		1455
	7-1/2	2135		1440	20.2		1460
	8	2205		1445	20.2		1465
	8-1/2	2235		1448	20.2		1468
	9	2305		1452	20.2		1472
	9-1/2	2335		1456	20.2		1476
	10	2405		1457	20.2		1477
1-21-82	11	0105		1464	20.2		1484
	12	0205		1470	20.2		1490
	13	0305		1474	20.2		1494
	14	0405		1479	20.2		1499
	15	0605		1484	20.2		1504
	16	0705		1487	20.2		1507
	17	0805		1491	20.2		1511
	18	0905		1495	20.2		1515
	19	1005		1498	20.2		1518
	20	1105		1500	20.2		1520
	25	1605		1512	20.2		1532

BENNETT WIRE LINE SERVICE
Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY JACK GRYNBURG WELL NAME SOUTH COTTONWOOD DRAW
DATE OF TEST 1-22-82 LOCATION WOLFCAMP PAGE 2 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psig	PRESSURE AT MID-POINT OF PERFORATIONS psig
1-21-82	30	2105		1519	20.2		1539
1-22-82	35	0205		1528	20.2		1548
	40	0705		1534	20.2		1554
	45	1205		1541	20.2		1561
	47	1405		1541	20.2		1561

TEST DATE: 1-22-82
TEST DEPTH: 4,192

ELEMENT NO.: RPG3 #43798
RANGE: 7,000 LBS.
CLOCKS: 63179
RANGE: 144 HOURS, DOUBLE PITCH LEAD SCREW

OPERATOR: BO FAULKENBERRY

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

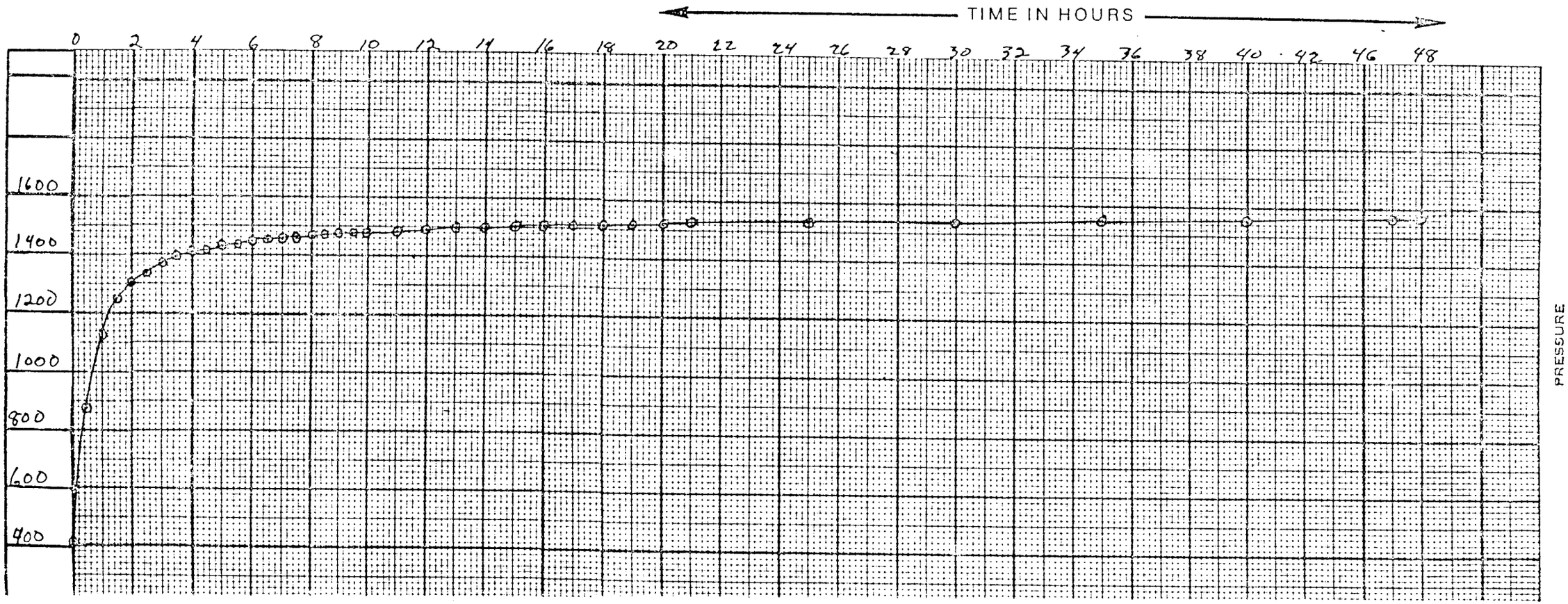
RUDY PITTMAN

JACK GRYNBURG & ASSOCIATES

SOUTH COTTONDRAW

BENNETT-CATHEY WIRE LINE SERVICE
Box 787 Artesia, N.M. 88210 505/746-3281
Drawn By Scale: As Shown

BENNETT-
CATHEY
WELL SERVICES



BEN JETT-CATHEY WIRE LINE SERVICE
P. O. BOX 787
ARTESIA, NEW MEXICO 88210
Phone 746-3281

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR JACK GRYNBURG
LEASE SOUTH COTTONWOOD DRAW
WELL NO. 1
POOL _____ FORMATION WOLFCAMP
DATE 1-22-82 TIME 1500 HOURS

STATUS SHUT IN TEST DEPTH 4,321
TIME S.I. 1405 HOURS LAST TEST DATE _____
CAS. PRES. 1-20-82 BHP LAST TEST _____
TUB. PRES. 1370 BHP CHANGE _____
ELE. _____ FLUID TOP _____
DATUM PLANE _____ WATER TOP _____
DATUM PSIA 1560 RUN BY BO FAULKENBERRY
TEMP 102° PRESSURE RANGE 7,000 LBS.
CLOCK NO. _____
ELEMENT NO. RPG3 #43798

DEPTH	PRESSURE	GRADIENT
0	1370	
1,000	1415	4.5
2,000	1458	4.3
3,000	1500	4.2
4,042	1547	4.5
4,192	1554	4.6
4,321	1560	4.6

TIME B.H.P. MEASURED: 1500 HRS.

LENGTH OF TIME WELL SHUT IN: 48 HRS. 55 MIN.