

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

C/SF
6-123

Type Test ☒ Initial FOUR POINT ☐ Annual ☐ Special		1-25-82		1980 FNL	
Company SANDERS PETROLEUM Corp		Connection AIR NEW WELL		1980 FWL	
Pool UNDESIGNATED		Formation ABO		Unit F	
Completion Date 1-21-82		Total Depth 5000		Plug Back TD 4928	
Csg. Size 4.5		Wt. 11.6		Set At 4971	
Thg. Size 2.375		Wt. 4.7		Set At 1.995	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE		Packer Set At NONE		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 108		Mean Annual Temp. °F 60	
Baro. Press. - P _a 13.2		State NEW MEXICO		Meter Run 4.028	
Prover FLANGE		Taps			

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	B.H.P. PSIA	Temp. °F	Flow
1	4.00	X	.750	460	60.0	46	1015	46	1181		1
2	4.00	X	1.250	460	21.0	47	960	50	1150		1
3	4.00	X	1.250	475	42.0	50	845	55	1115		1
4	4.00	X	1.250	475	55.0	54	766	54	1074		1

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 _{pv}	Rate of Flow Q, Mcfd
1	2.7290	168.50	473.2	1.1037	1.2163	1.0454	593
2	7.6610	99.69	473.2	1.0127	1.2163	1.0454	983
3	7.6610	143.19	488.2	1.0098	1.2163	1.0454	1408
4	7.6610	163.86	488.2	1.0058	1.2163	1.0443	1604

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.72	506	1.43	.915	A.P.I. Gravity of Liquid Hydrocarbons	6760
2	.72	507	1.43	.915	Specific Gravity Separator Gas	.7102
3	.74	510	1.44	.915	Specific Gravity Flowing Fluid	
4	.74	514	1.45	.917	Critical Pressure	657
5					Critical Temperature	354

F _r 1235.2		P _c ² 1525.7	
NO.	P _r ²	P _w	P _w ²
1	1194.2	1426.1	100.0
2	1163.2	1353.0	173.0
3	1128.2	1272.8	253.0
4	1087.2	1182.0	344.0

(1) $\frac{P_c^2}{P_r^2 - P_w^2} = 6.0305$

AOF = Q $\left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 7,499.8$

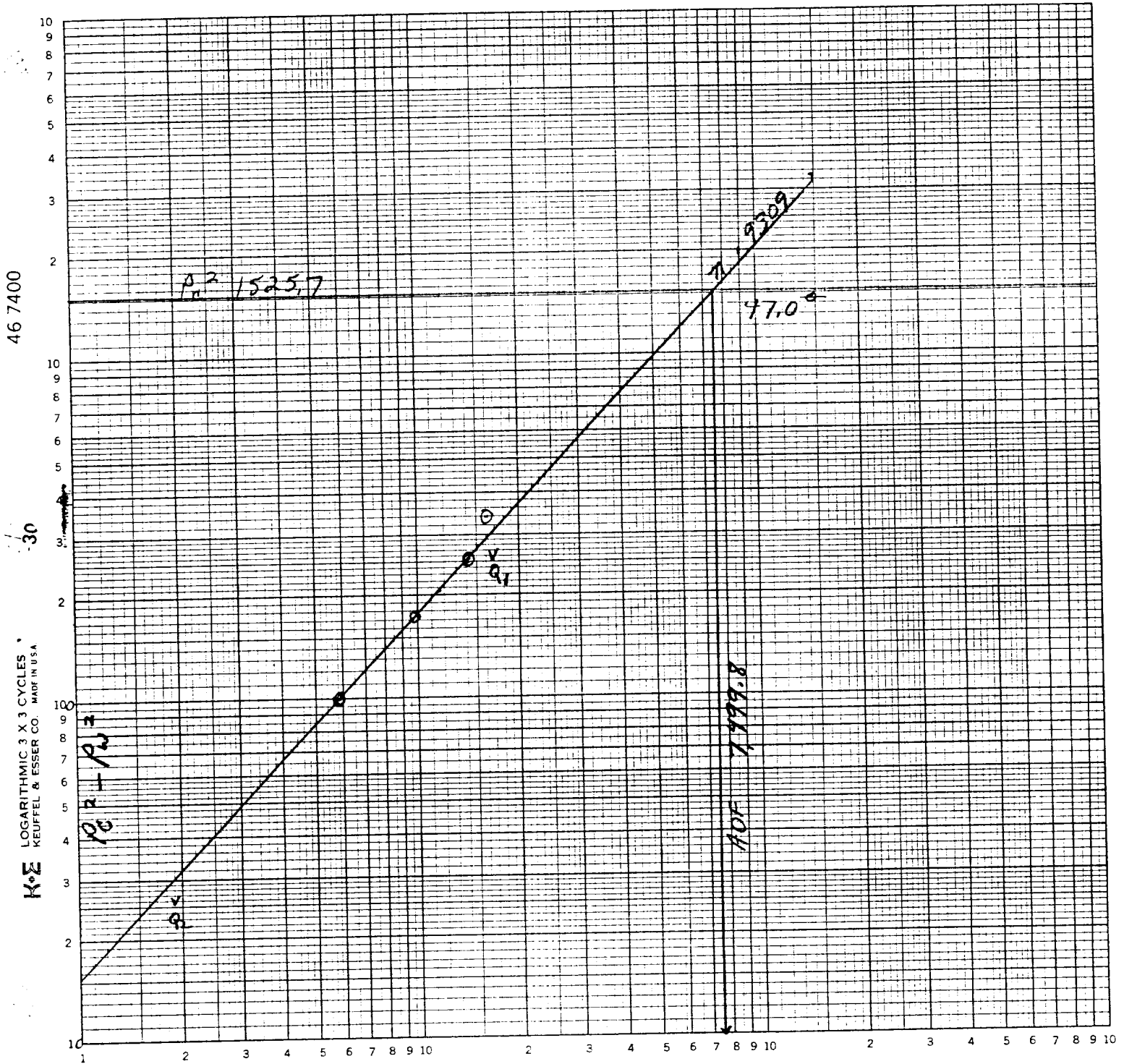
(2) $\left[\frac{P_r^2}{P_c^2 - P_w^2} \right]^n = 5.3266$

Absolute Open Flow	7,499.8	Mcf/d @ 15.025	Angle of Slope θ	47.0	Slope, n	.9309
--------------------	---------	----------------	------------------	------	----------	-------

Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA PRESSURE GUAGES

Approved By Commission:	Conducted By: RICHARD TOWNLEY	Calculated By: BENNETT- CATHEY	Checked By: <i>[Signature]</i>
-------------------------	----------------------------------	-----------------------------------	-----------------------------------

- ISLER FEDERAL WELL 2
UNIT F, Sec 6, Twp 7S, Rge 27E
CHAVES COUNTY
1-25 82



$$\Delta P_1^2 \quad P_o^2 - P_w^2 = 300$$

$$\Delta P_2^2 \quad P_o^2 - P_w^2 = 30$$

$$Q_1 = 1621$$

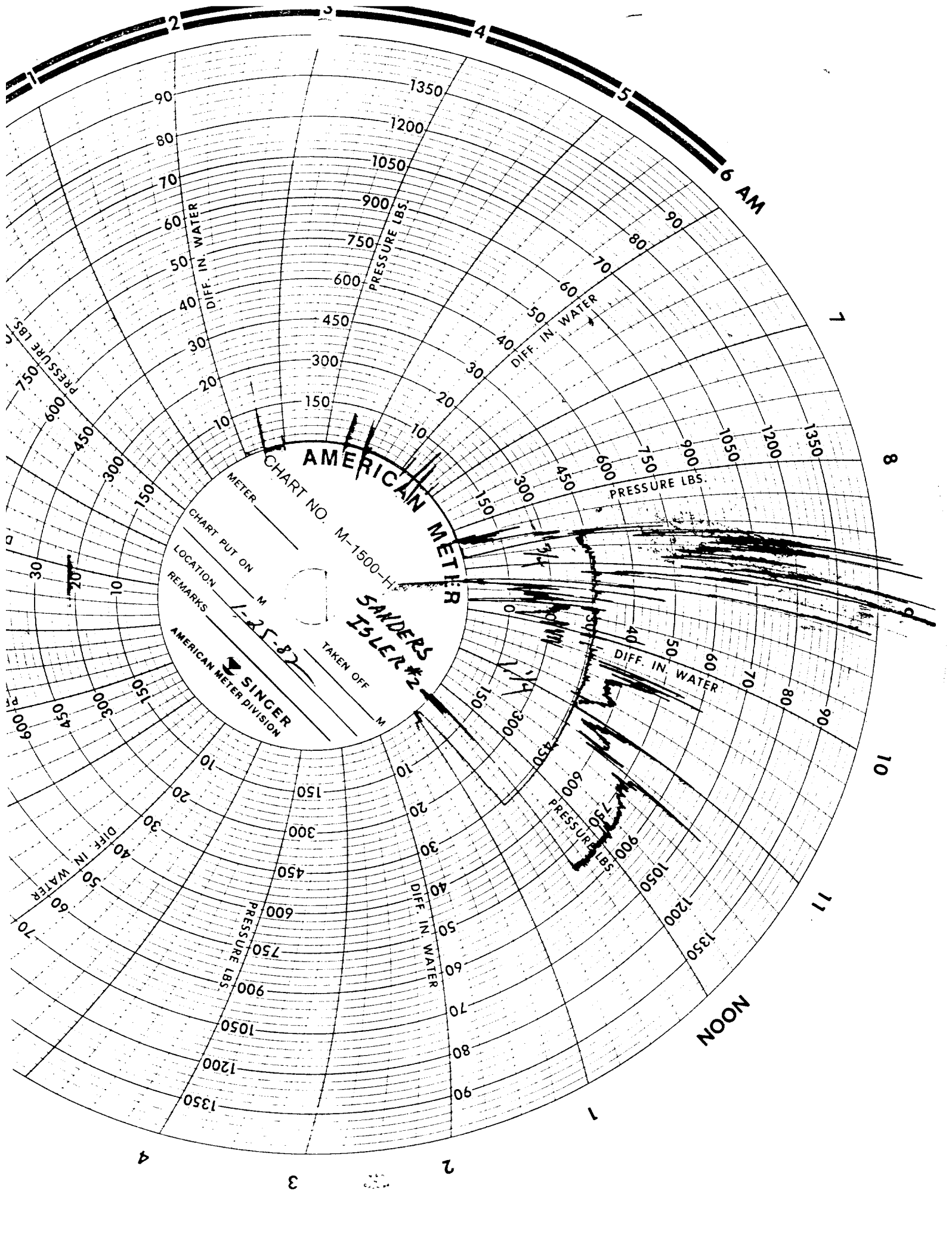
$$Q_2 = 190$$

Q in mcf/d

$$\log Q_1 = 3.2097$$

$$\log Q_2 = 2.2788$$

$$n = .9309$$



NEW-TEX LAB
P.O. BOX 1161

MOORE NM 88241-161
505-293-2551

ANALYSIS NUMBER: 6569

DATE OF RUN: 01/27/82

DATE SECURED:

ANALYSIS CERTIFICATE

SAMPLE IDENT: BANDERS PETRO - ISLER FEE #2

CLIENT: BENNETT-CATHEY

ADDRESS: BOX 787

CITY/STATE: ARTESIA NM 88212

SAMPLING PRESS: 2 PSIG

SAMPLING TEMP: 2 DEG F

STATION NUMBER: 1-75-375 CHAVES CO

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

MOLE
PERCENT

WAL/
MCF

NITROGEN	9.1446770	
CARBON DIOXIDE	0.7731232	
METHANE	81.2591752	
ETHANE	5.02260137	1.3405733
PROpane	1.9433597	0.5334522
ISO-BUTANE	0.3337364	0.1085782
NORMAL BUTANE	0.4220137	0.2137962
ISO-PENTANE	0.2172024	0.3793206
NORMAL PENTANE	0.2326384	0.3840755
HEXANES	0.1972565	0.3809145
HEPTANES PLUS	0.1928039	0.3878366
TOTAL	100.0000000	2.5292202

PROPANE GRAM 0.62

BUTANES GRAM 0.32

0.32

ETHANE GRAM 1.62

PENTANES PLUS GRAM 0.33

0.33

SPECIFIC GRAV (CALC):

1.6755

MOLE WEIGHT:

19.56

WIND-375/00-FF

PRESSURE (PSIA)

WET

DRY

14.696

1012

1032

14.652

1009

1227

14.720

1014

1032

14.725

1015

1033

ANALYZED BY:

APPROVED BY:

[Signature]

BENNETT - CATHEY
 Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY SANDERS PETROLEUM CORP. WELL NAME ISLER FEDERAL WELL NO. 2
 DATE OF TEST 1-24-82 TO 1-26-82 FORMATION ABO PAGE 1 OF 2

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #21121N RANGE 0-5,000 LBS.
 CLOCK NUMBER 21850 RANGE 60 HOURS
 TIME WELL SHUT IN 1245 HOURS 1-25-82 AFTER FOUR POINT
 TIME CLOCK STARTED 1219 HOURS 1-24-82
 DEAD WEIGHT ELEMENT ON SURFACE SHUT IN BEFORE FOUR POINT 10688 PSIA
 TIME ELEMENT REACHED BOTTOM 1248 HOURS 1-24-82
 DEAD WEIGHT ELEMENT ON BOTTOM 779 PSIA FLOWING AT START OF B.U.LBS.
 ELEMENT SET AT 7676 FEET.
 TEMPERATURE 7676 FT. 108 °F.
 1077 PSIA DEAD WEIGHT AT THE END OF 28 HOURS 5 MINUTES.

DATE	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION P ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
1-24-82	0	1248		1218	13.2	1231	
1-25-82	20 MIN.	0845		1222	13.2	1235	
START TEST	0	0845		1222	13.2	1235	
	1/4	0900		1212	13.2	1225	
	1/2	0915		1196	13.2	1209	
	3/4	0930		1190	13.2	1203	
END RATE 1	1	0945		1181	13.2	1194	
	1-1/4	1000		1175	13.2	1188	
	1-1/2	1015		1160	13.2	1173	
	1-3/4	1030		1155	13.2	1168	
END RATE 2	2	1045		1150	13.2	1163	
	2-1/4	1100		1129	13.2	1142	
	2-1/2	1115		1124	13.2	1137	
	2-3/4	1130		1120	13.2	1133	
END RATE 3	3	1145		1115	13.2	1128	
	3-1/4	1200		1095	13.2	1108	
	3-1/2	1215		1087	13.2	1100	
	3-3/4	1230		1078	13.2	1091	
END RATE 4	4	1245		1074	13.2	1087	
START BUILDUP	0	1245		1072	13.2	1085	
	1/4	1300		1151	13.2	1164	
	1/2	1315		1168	13.2	1181	
	3/4	1330		1174	13.2	1187	
	1	1345		1179	13.2	1192	
	1-1/4	1400		1183	13.2	1196	
	1-1/2	1415		1187	13.2	1200	
	1-3/4	1430		1189	13.2	1202	
	2	1445		1191	13.2	1204	
	2-1/2	1515		1194	13.2	1207	
	3	1545		1196	13.2	1209	
	4	1645		1199	13.2	1212	
	5	1745		1201	13.2	1214	
	10	2245		1208	13.2	1221	
1-26-82	15	0345		1212	13.2	1225	
	20	0845		1214	13.2	1227	

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

[illegible]

TEST DATE: 1-24-82

TEST DEPTH: 4,676 FEET

ELEMENT NO.: RPG3 #21121N

RANGE: 5,000-LBS.

CLOCKS: 21850

RANGE: 60 HOURS

OPERATOR: RICHARD TOWNLEY

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

FOUR POINT BACK PRESSURE TEST.

0

1/4

1/2

3/4

1

1 1/4

1 1/2

1 3/4

2

2 1/4

2 1/2

2 3/4

3

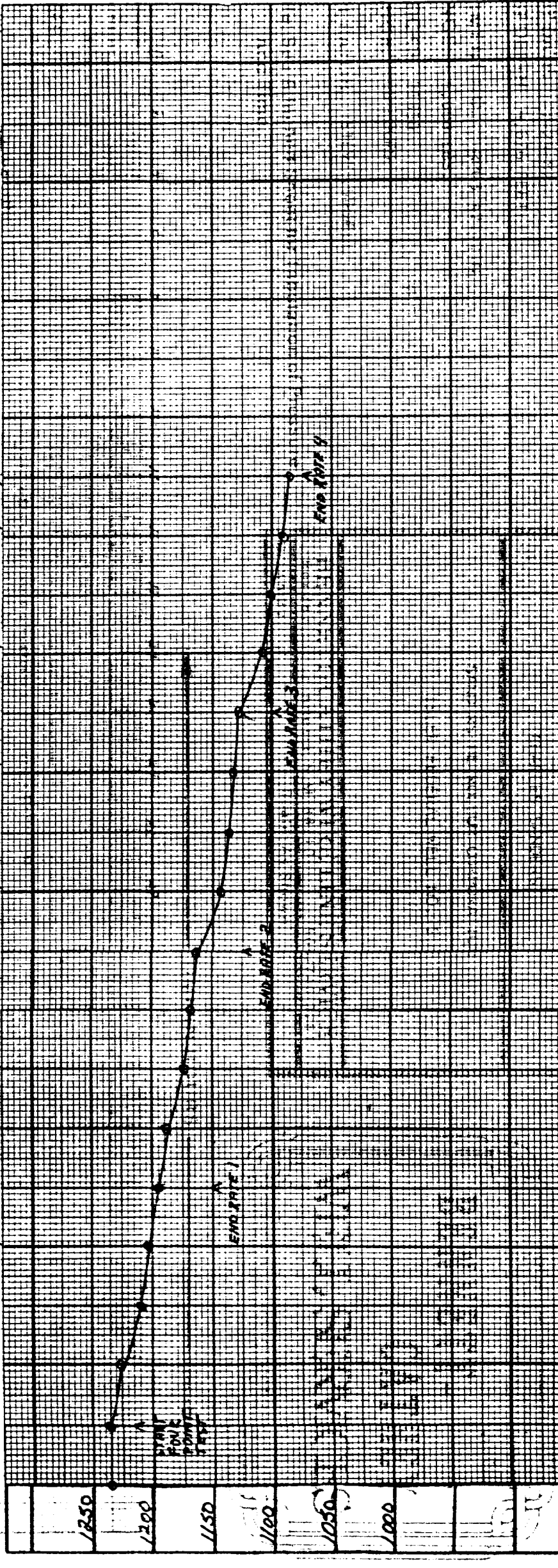
3 1/4

3 1/2

3 3/4

4

TIME IN HOURS



CHARLES SANDERS

SANDERS PETROLEUM CORPORATION

ISLER FEDERAL WELLS NO. 2

BENNETT-CATHEY WIRE LINE SERVICE

Box 787 Artesia, N.M. 88210 505/746-3281

Drawn By Scale: As Shown

BENNETT-CATHEY WIRE LINE SERVICES

TEST DATE: 1-25-82

TEST DEPTH: 4,676 FEET

ELEMENT NO.: 5 RPG3 #21121N
RANGE: 5,000 LBS. MINIMUM

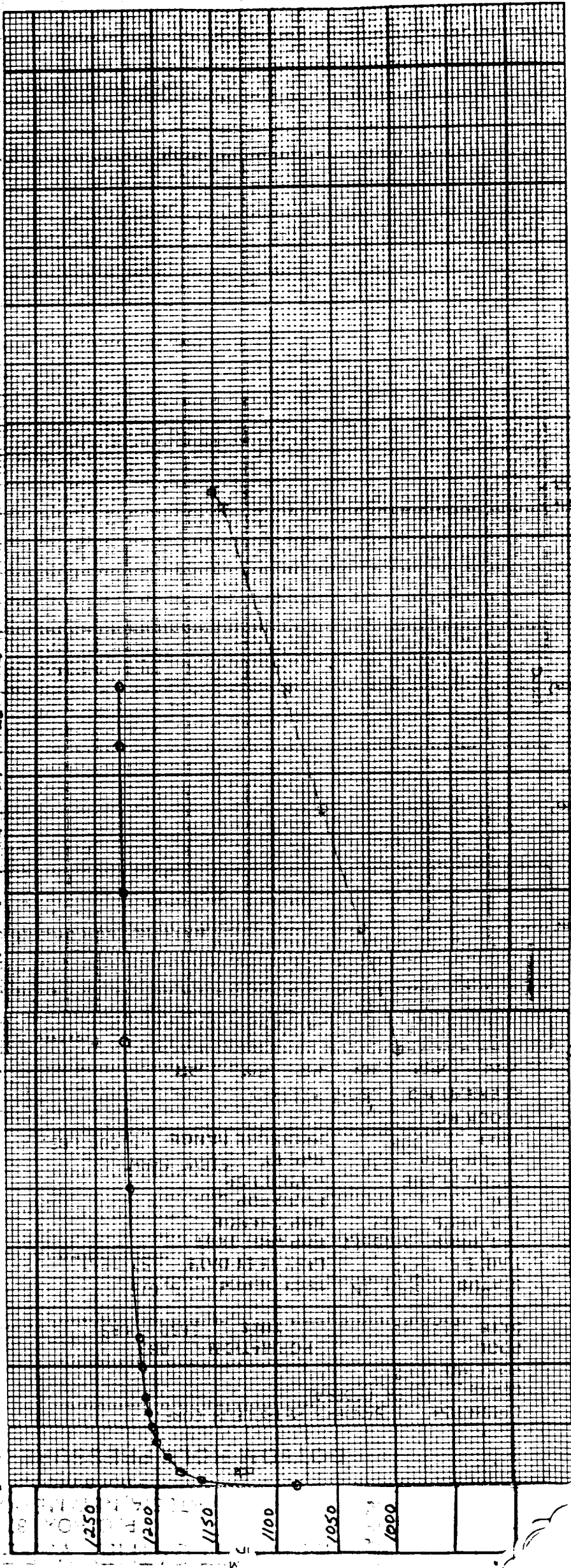
CLOCKS: 21850
RANGE: 60 HOURS

OPERATOR: STEVE HARWELL

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

DEPTH
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28

TIME IN HOURS

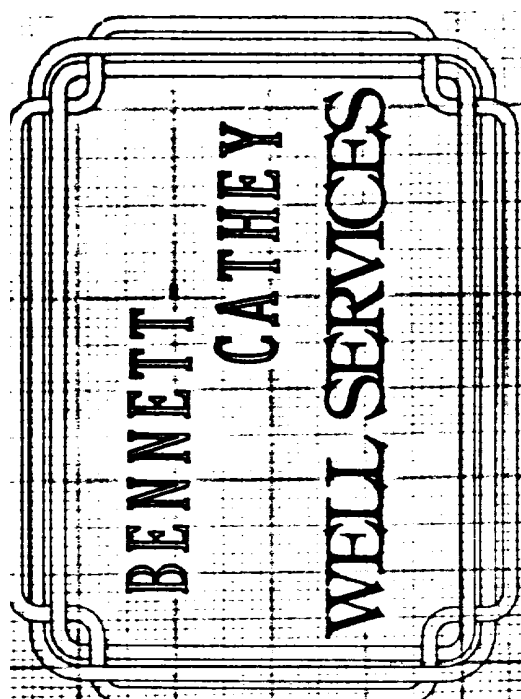


CHARLES SANDERS

SANDERS PETROLEUM CORPORATION
ISLER FEDERAL WELL NO. 2

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

Drawn By Scale: As Shown





BENNETT-CATHEY WIRE LINE SERVICE



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

BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATORS SANDERS PETROLEUM CORP.		AIR LINE WELL		1980 FWL	
LEASE ISLER FEDERAL					
WELL NO. 1GN2ED		ABO			
POOL		FORMATION ABO		1077 or Lease Name	
DATE 21-26-82		TIME 1650 HOURS		1107 ISLER FEDERAL 3.0	
STATUS SHUT IN		TEST DEPTH 4,676'		2,000 1139 3.2	
TIME S.I. 1245		LAST TEST DATE 1ST TEST		3,000 1168 2.9	
CAS. PRES. 125-82		BHP LAST TEST		4,526 1220 3.4	
TUB. PRES. 1077		BHP CHANGE		4,676 1230 6 3.4	
ELE.		FLUID TOP		1230 6 3.4	
DATUM PLANE		WATER TOP		TIME B.H.P. MEASURED: 1650 HOURS	
DATUM PSIA 1230		RUN BY STEVE HARWELL		COUNTY LEA, NEW MEXICO	
TEMP 108°		PRESSURE RANGE 5,000 LBS.		LENGTH OF TIME WELL SHUT IN: 28 HRS.	
CLOCK NO.				FLOW 5 MIN.	
ELEMENT NO. RPG3 #21121N					
1000 1050 1100 1150 1200 1250					

