

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial FOUR POINT ☐ Annual ☐ Special		Test Date 11-19-81		JAN 27 1982	
Company TRANSWESTERN GAS SUPPLY		Connection AIR NEW WELL		O. C. D.	
Pool UNDESIGNATED		Formation ABO		ARTESIA, OFFICE	
Completion Date 11-10-81		Total Depth 4100		Plug Back TD 3665	
Elevation 3870 KB		Form of Log WOLFSTATE		Well No. 1	
Coq. Size 4.500	Wt. 10.50	d 4.052	Set At 3665	Perforations: From 3158 To 3665	
Tiq. Size 2.375	Wt. 4.70	d 1.995	Set At 3512	Perforations: From OPEN To ENDED	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE				Packer Set At NONE	
Producing Thru TUBING		Reservoir Temp. °F 99 # 3400		Mean Annual Temp. °F 60°	
Baro. Press. - P _a 13.2		State NEW MEXICO		County CHAVES	
L 3412	H 3412	G _g .688	% CO ₂ .26	% N ₂ 31.43	% H ₂ S Prover
Meter Run 4"		Taps FLANGE			

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
SI							1033		1125		72 HRS.
1.	4.000	X	.625	420	2.0	50	900	25	983		11.75
2.	4.000	X	.625	420	4.0	64	852	45	933		4.00
3.	4.000	X	.625	420	5.5	72	703	58	856		4.15
4.	4.000	X	.625	420	9.0	64	585	50	834		4.00
5.											

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	1.8920	29.43	433.2	1.0098	1.2056	1.0206	69
2	1.8920	41.63	433.2	.9962	1.1056	1.0185	96
3	1.8920	48.81	433.2	.9887	1.2056	1.0174	112
4	1.8920	62.44	433.2	.9962	1.2056	1.0185	145
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	.70	510	1.72	.960			.6880		617	297
2	.70	524	1.77	.964						
3	.70	532	1.79	.966						
4	.70	522	1.77	.964						
5										

NO.	P _i	P _w	P _w ²	P _i ² - P _w ²
1	1138.2	996.2	992.4	303
2	1295.5	946.2	895.3	400
3		869.2	755.5	540
4		847.2	717.7	578
5				

(1) $\frac{P_i^2}{P_i^2 - P_w^2} = 2.2413$		(2) $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 2.2413$	
AOF = Q $\left[\frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 325$			

Absolute Open Flow	Mcfd @ 15.025	Angle of Slope @	Slope, n
325		45	1.0000

Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMARADA GAUGES.

Approved By Division	Conducted By:	Calculated By:	Checked By:
	RICHARD TOWNLEY	WOHLFORD & JENKINS	

Posted ID-2
+ Comp. Book
SI
2-5-82

TRANSWESTERN GAS SUPPLY

WOLF STATE #1

J N 6S 28E

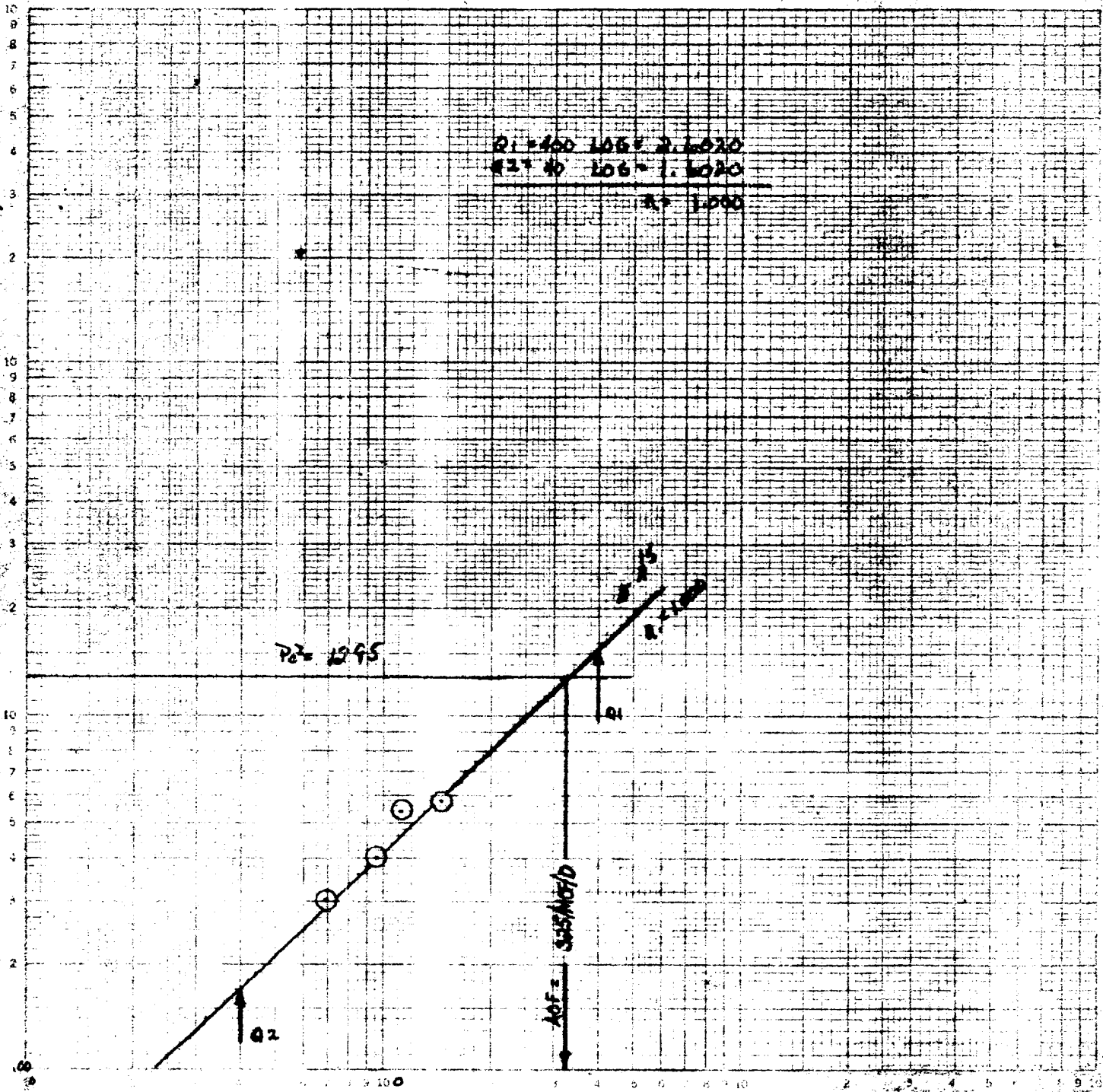
CHAYES, N

NEW MEXICO

46 7403

72-113-11-11-11

LOGARITHMIC 3 X 5 CYCLES
KUPFFEL & ESSER CO. NEW YORK



TEST DEPTH: 3400 FEET

ELEMENT NO.: RFG3 #41552

RANGE: 6,000 LBS.

CLOCKS: 63179

RANGE: 72 HOURS

OPERATOR: BOB HERREN

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

FOUR POINT BACK PRESSURE TEST

TRANSWESTERN GAS SUPPLY COMPANY

WOLF STATE WELL NO. 1

BENNETT-CATHEY WIRE LINE SERVICE

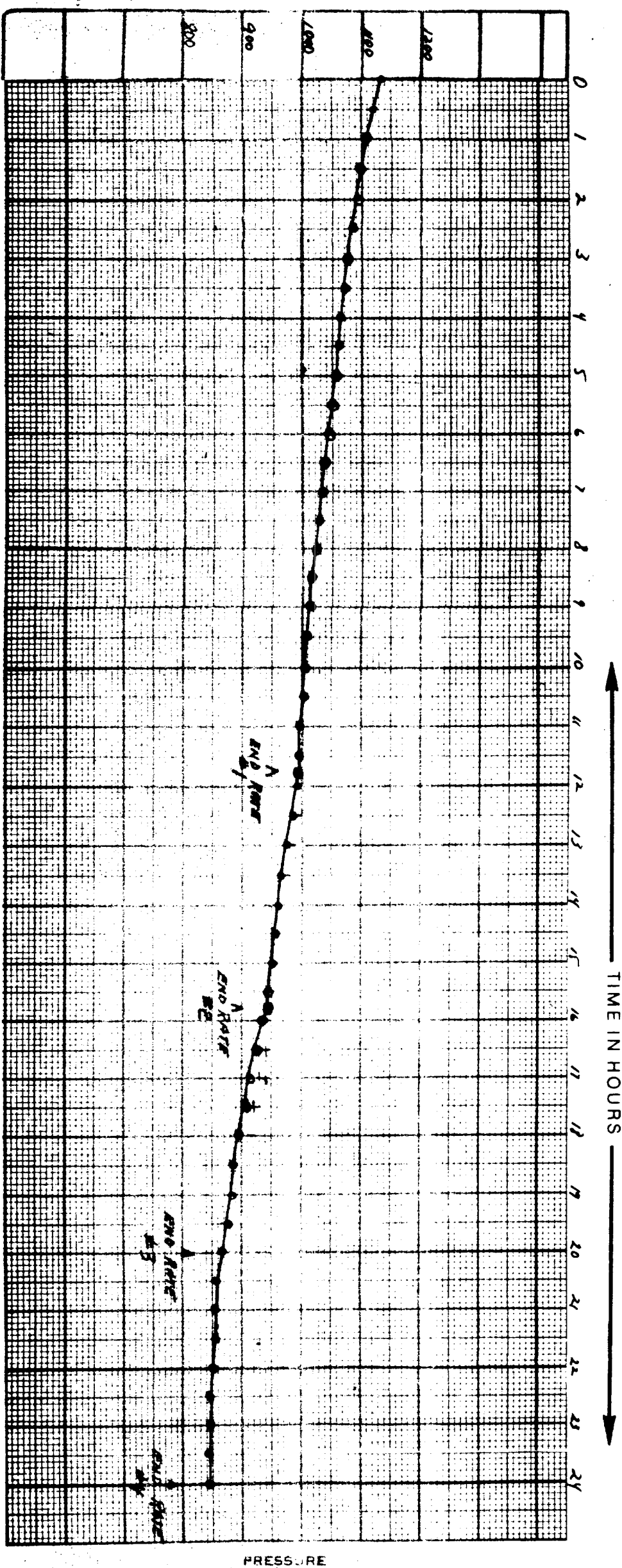
Box 787
Artesia, N.M. 88210
505/746-3281

Drawn By

Scale: As Shown

BENNETT-
CATHEY

WELL SERVICES



TEST DATE: 11-19-81
TEST DEPTH: 3400 FEET

ELEMENT NO.: RPG3 #41552
RANGE: 6,000 LBS.
CLOCKS: G3179
RANGE: 72 HOURS

OPERATOR: BOB HERREN

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

HANK SPRULL

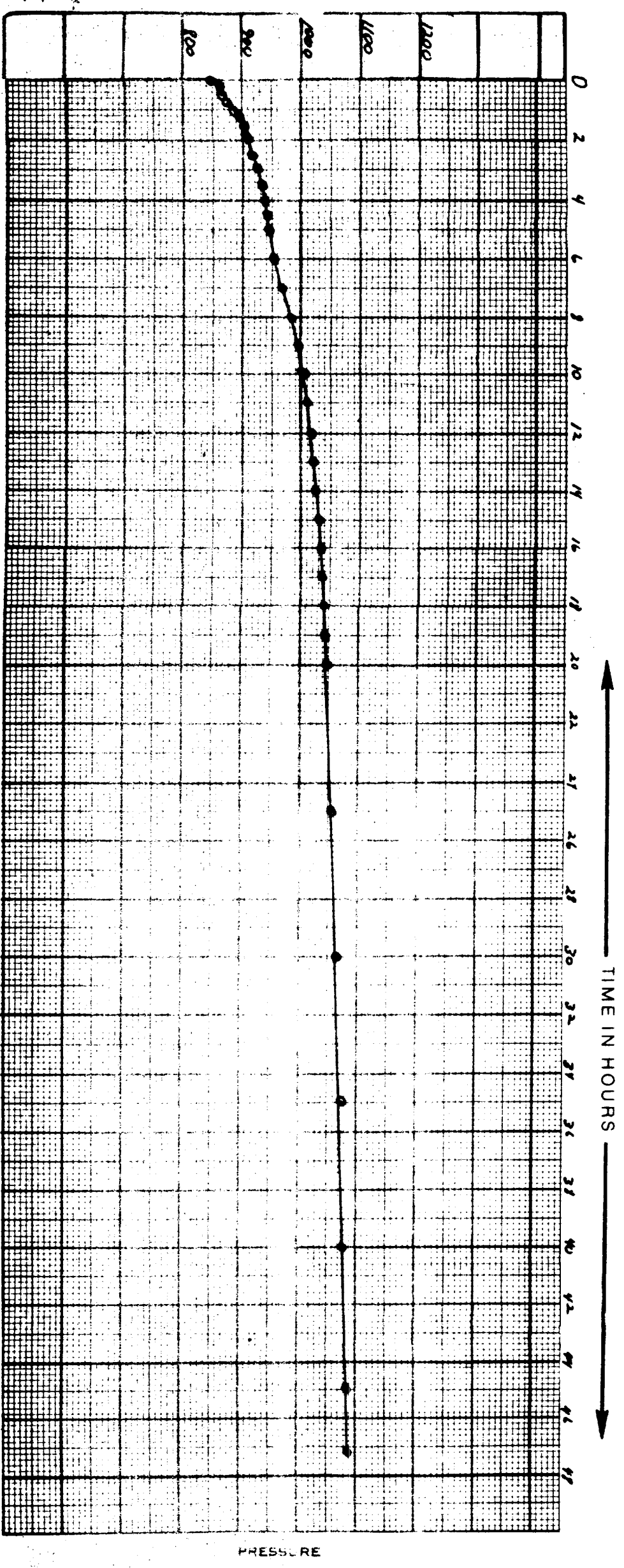
TRANSWESTERN GAS SUPPLY COMPANY
WOLF STATE WELL NO. 1

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

Drawn By Scale As Shown

BENNETT-
CATHEY
WELL SERVICES

47-1/2 HOUR BUILD UP FOLLOWING FOUR POINT BACK PRESSURE TEST





BENNETT-CATHEY WIRE LINE SERVICE

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



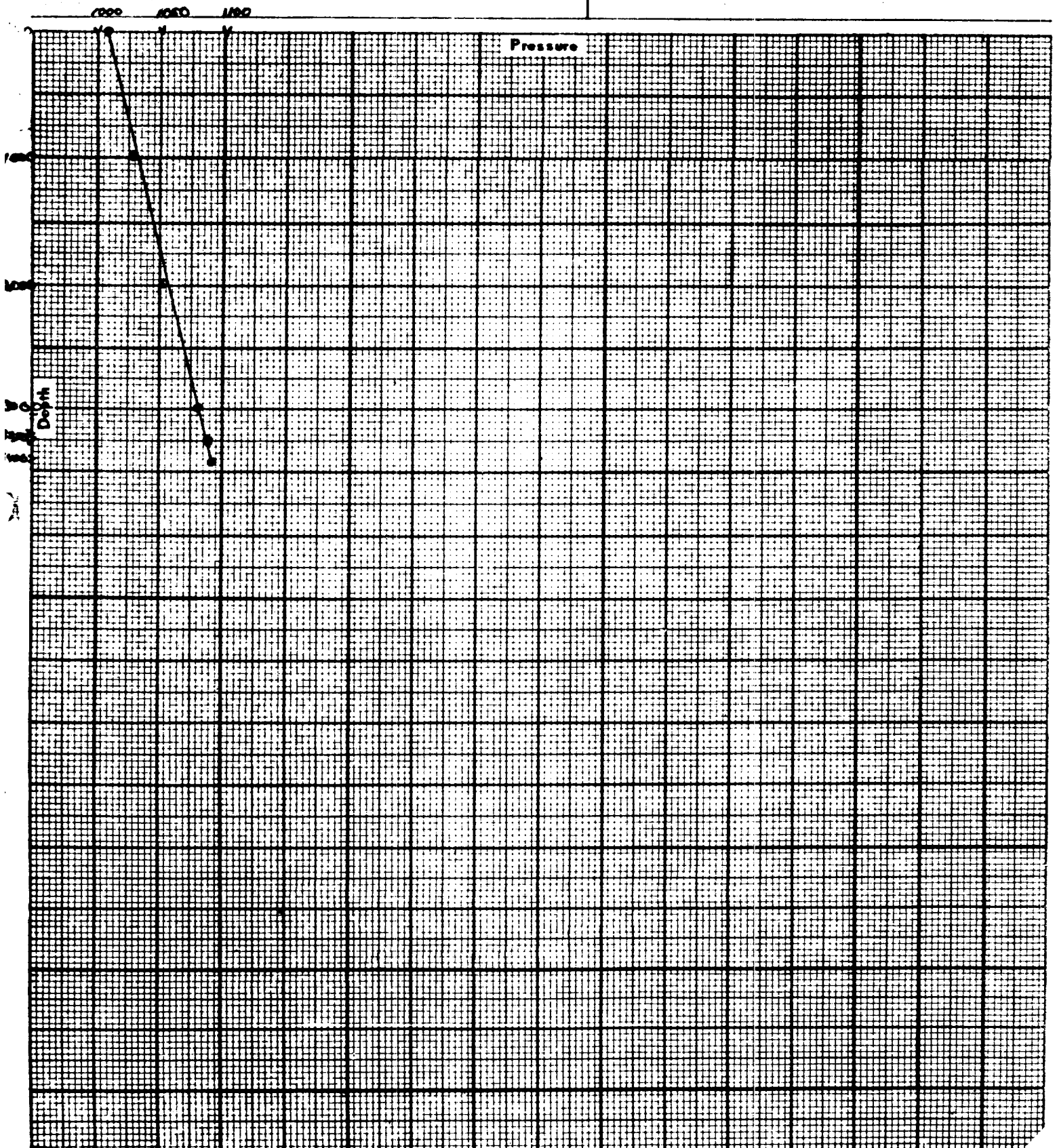
BOTTOM HOLE PRESSURE SURVEY REPORT

OPERATOR TRANSWESTERN GAS SUPPLY
LEASE WOLFSTATE
WELL NO. 1
POOL FORMATION ABO
DATE 11-22-81 TIME 2010 HOURS
STATUS SHUT IN TEST DEPTH 3,400 FEET
TIME S.I. 1815 HRS. LAST TEST DATE 11-17-81
CAS. PRES. 11-20-81 BHP LAST TEST 1144
TUB. PRES. 1007 BHP CHANGE -53
ELE. FLUID TOP
DATUM PLANE WATER TOP
DATUM PSIA 1091 RUN BY BOB HERREN
TEMP 99° PRESSURE RANGE 6,000 LBS.
CLOCK NO.
ELEMENT NO. RPG3 #41552

DEPTH	PRESSURE	GRADIENT
0	1007	
1,000	1029	2.2
2,000	1053	2.4
3,000	1082	2.9
3,250	1088	2.4
3,400	1091	2.0

TIME B.H.P. MEASURED: 2010 HOURS

LENGTH OF TIME WELL SHUT IN: 49 HOURS
55 MINUTES



BENNETT - CATHEY
 Artesia, New Mexico 88210
SUBSURFACE PRESSURE MEASUREMENTS

COMPANY TRANSWESTERN GAS SUPPLY WELL NAME WOLFSTATE WELL NO. 1
 DATE OF TEST 11-19-81 TO 11-22-81 FORMATION ABO PAGE 1 OF 3

CHART READINGS AND CALCULATIONS FOR BUILDUP OR DRAWDOWN TEST

ELEMENT NUMBER RPG3 #41552 RANGE 6,000 LBS.
 CLOCK NUMBER G3179 RANGE 72 HOURS
 TIME WELL SHUT IN 1815 HOURS 11-20-81 AFTER FOUR POINT
 TIME CLOCK STARTED 1525 HOURS 11-19-81
 DEAD WEIGHT ELEMENT ON SURFACE 1049 BEFORE RUNNING FOUR POINT LBS.
 TIME ELEMENT REACHED BOTTOM 1557 HOURS 11-19-81
 DEAD WEIGHT ELEMENT ON BOTTOM 598 PSIA TUBING AFTER 4 POINT LBS.
 ELEMENT SET AT 3400 FEET.
 TEMPERATURE 3400 FT. 99 °F.
 1007 PSIA DEAD WEIGHT AT THE END OF 49 HOURS 55 MINUTES.

DATE 11-19-81	HOUR	TIME	DEFLECTION in/inches	CALCULATED PRESSURE psig	CORRECTION ± PC psig	CORRECTED PRESSURE psia	PRESSURE AT MID-POINT OF PERFORATIONS psia
ON BOTTOM				1128	13.2		1141
START TEST	0	1815		1125	13.2		1138
	1/2	1845		1108	13.2		1121
	1	1915		1098	13.2		1111
	1-1/2	1945		1087	13.2		1100
	2	2015		1083	13.2		1096
	2-1/2	2045		1076	13.2		1089
	3	2115		1066	13.2		1079
	3-1/2	2145		1059	13.2		1072
	4	2215		1050	13.2		1066
	4-1/2	2245		1048	13.2		1061
	5	2315		1044	13.2		1057
	5-1/2	2345		1038	13.2		1051
	6	2415		1032	13.2		1045
	6-1/2	2445		1025	13.2		1038
11-20-81	7	0115		1020	13.2		1033
	7-1/2	0145		1016	13.2		1029
	8	0215		1010	13.2		1023
	8-1/2	0245		1003	13.2		1016
	9	0315		1000	13.2		1013
	9-1/2	0345		997	13.2		1010
	10	0415		994	13.2		1007
	10-1/2	0445		990	13.2		1003
	11	0515		986	13.2		999
	11-1/2	0545		985	13.2		998
END RATE 1	11-3/4	0600		983	13.2		996
	12	0615		978	13.2		991
	12-1/2	0645		972	13.2		985
	13	0715		963	13.2		976
	13-1/2	0745		954	13.2		967
	14	0815		949	13.2		962
	14-1/2	0845		944	13.2		957
	15	0915		938	13.2		951
	15-1/2	0945		933	13.2		946
END RATE 2	15-3/4	1000		933	13.2		946
	16	1015		922	13.2		935
	16-1/2	1045		913	13.2		926
	17	1115		905	13.2		918

BENNETT WIRE LINE SERVICE

Artesia, New Mexico 88210

SUBSURFACE PRESSURE MEASUREMENTS

COMPANY TRANSWESTERN GAS SUPPLY WELL NAME WOLFSTATE WELL NO. 1
 DATE OF TEST 11-19-81 TO 11-22-81 LOCATION ABO PAGE 2 OF 3

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
	17-1/2	1145		895	13.2		908
	18	1215		885	13.2		898
	18-1/2	1245		876	13.2		889
	19	1315		873	13.2		886
	19-1/2	1345		866	13.2		879
END RATE 3	20	1415		856	13.2		869
	20-1/2	1445		846	13.2		859
	21	1515		844	13.2		857
	21-1/2	1545		844	13.2		857
	22	1615		838	13.2		851
	22-1/2	1645		836	13.2		849
	23	1715		835	13.2		848
	23-1/2	1745		834	13.2		847
END RATE 4	24	1815		834	13.2		847
	0	1815		834	13.2		847
	1/4	1900		848	13.2		861
	1/2	1915		851	13.2		864
	3/4	2000		866	13.2		879
	1	2015		876	13.2		889
	1-1/4	2030		882	13.2		895
	1-1/2	2045		888	13.2		901
	1-3/4	2100		895	13.2		908
	2	2115		899	13.2		912
	2-1/2	2145		905	13.2		918
	3	2215		913	13.2		926
	3-1/2	2245		919	13.2		932
	4	2315		926	13.2		939
	4-1/2	2345		929	13.2		942
	5	2415		932	13.2		945
11-21-81	6	0115		941	13.2		954
	7	0215		956	13.2		969
	8	0315		971	13.2		984
	9	0415		985	13.2		998
	10	0515		994	13.2		1007
	11	0615		997	13.2		1010
	12	0715		1004	13.2		1017
	13	0815		1010	13.2		1023
	14	0915		1013	13.2		1026
	15	1015		1018	13.2		1031
	16	1115		1022	13.2		1035
	17	1215		1024	13.2		1037
	18	1315		1027	13.2		1040
	19	1415		1031	13.2		1044
	20	1515		1034	13.2		1047
	25	2015		1044	13.2		1057
11-22-81	30	0115		1053	13.2		1066
	35	0615		1063	13.2		1076
	40	1115		1066	13.2		1079
	45	1615		1072	13.2		1085

Artesia, New Mexico 88210

COMPANY TRANSWESTERN GAS SUPPLY WELL NAME WOLFSTATE WELL NO. 1
DATE OF TEST 11-19-81 TO 11-22-81 LOCATION ABO PAGE 3 OF 3

[illegible]

SUGGESTED FIELD DATA SHEET (Not Required To File)

RECEIVED

Type Test	☒ Initial ☐ FOUR POINT ☐ Annual		☐ Special	Test Date	11-19-81	Lease No.	JAN 27 1982
Company	TRANSWESTERN GAS SUPPLY		Connection	TO AIR		Agent	O. C. D.
Field	UNDESIGNATED	Reservoir	ABO	Location	ARTESIA, OFFICE		
Completion Date	11-10-81	Total Depth	4100	Plug Back TD	3665	Elevation	3870 KB
Csg. Size	4.500	Wt.	10.50	d	4.052	Set At	3665
Tbg. Size	2.375	Wt.	4.70	d	1.995	Set At	3512
Type Completion (Describe)				Packer Set At		NONE	
SINGLE				NONE		County or Parish	
Producing Thru				Reservoir Temp. F		99°	
TUBING				Mean Annual Temp. F		60°	
3412				Baro. Press. - P _a		13.2	
3412				% CO ₂		% N ₂	
3412				% H ₂ S		Prover	
3412				Meter Run		4" FLANGE	
3412				Tape		28E	
3412				Sec.		16	
3412				Twp. Blk.		65	
3412				Rge. Sw.		28E	
3412				State		NEW MEXICO	
3412				Farm or Lease Name		WOLF STATE	
3412				Well No.		1	

DATE	ELAP. TIME	Wellhead Working Pressure			METER OR PROVER				REMARKS
Time of Reading	Hrs.	Tbg. Psig.	Csg. Psig.	Temp. F	Pressure Psig.	Diff.	Temp. F	Orifice	(Include liquid production data: Type-A.P.I. Gravity-Amount)
1715 HR.		1033	1021			*			SHUT IN DEAD WEIGHT
1815		START	TEST						CSG PRESSURE W/ HTL GUAGE
1830	1/4	1014	1000	42	420	2.0	57	.625	GUAGE CHECKED WITH D/W. 3/64
1845	1/2	1010	995	42	420	2.0	.625		1745 HRS. TO 1815 HRS.
1900	3/4	1004	991	42	420	2.0	57	.625	WARM UNIT
1915	1	1000	988	43	420	2.0	57	.625	
1930	1-1/4	995	982	42	420	2.0	58	.625	
1945	1-1/2	992	980	42	420	2.0	58	.625	
2000	1-3/4	989	975	42	420	2.0	58	.625	
2015	2	986	971	42	420	2.0	58	.625	
2030	2-1/4	982	968	41	420	2.0	57	.625	
2045	2-1/2	979	965	40	420	2.0	57	.625	
2100	2-3/4	975	960	40	420	2.0	56	.625	
2115	3	972	957	38	420	2.0	56	.625	
2130	3-1/4	970	955	37	420	2.0	55	.625	DUMP VLV. SHUT (OPENED)
2145	3-1/2	967	951	37	420	2.0	55	.625	(CHECK MARK ON CHART)
2200	3-3/4	963	949	36	420	2.0	55	.625	NO FLUID MADE
2215	4	961	946	37	420	2.0	55		
2230	4-1/4	958	945	38	420	1.0	52	.625	HEATER CAME ON
2245	4-1/2	955	941	36	420	1.0	53	.625	
2300	4-3/4	953	936	33	420	1.0	52	.625	
2315	5	950	934	36	420	1.0	53	.625	
2330	5-1/4	947	933	34	420	1.0	53	.625	
2345	5-1/2	945	930	34	420	1.0	53	.625	
2400	5-3/4	942	928	34	420	1.0	51	.625	PILOT LIGHT OUT ON HEATER
0015	6	940	927	36	420	1.5	53	.625	HAD TO RELIGHT & WARM
0030	6-1/4	938	925	35	420	1.0	54	.625	HEATER
0045	6-1/4	936	923	35	420	1.0	55	.625	
0100	6-3/4	934	922	33	420	2.0	55	.625	HEATER OFF
0115	7	932	917	32	420	1.7	56	.625	
0130	7-1/4	930	915	33	420	2.0	56	.625	
0145	7-1/2	929	912	34	420	2.0	56	.625	
0200	7-3/4	927	911	35	420	2.0	57	.625	
0215	8	925	909	34	420	2.0	57	.625	

SUGGESTED FIELD DATA SHEET (Not Required To File)

Type Test	☒ Initial		FOUR POINT		☐ Annual	☐ Special	Test Date	11-20-81		Lease No. or Serial No.
Company	TRANSWESTERN GAS SUPPLY					Connection	AIR NEW WELL			Allottee
Field	Reservoir					Location			Unit	
Completion Date	Total Depth		Plug Back TD		Elevation		Farm or Lease Name			
Csg. Size	Wt.	d	Set At	Perforations: From		To	Well No.			
Tbg. Size	Wt.	d	Set At	Perforations: From		To	Sec.	Twp.-Blk.	Rge.-Sur.	
Type Completion (Describe)							Packer Set At	16	6S	28E
Producing Thru	Reservoir Temp. F		Mean Annual Temp. F		Baro. Press. - P _a		County or Parish			
L	H	G _g	% CO ₂		% N ₂		% H ₂ S		State	
							Prover	Meter Run	Taps	

[illegible]

SUGGESTED FIELD DATA SHEET (Not Required To File)

Type Test		☒ Initial ☐ FOUR POINT ☐ Annual		☐ Special		Test Date 11-20-81		Lease No. or Serial No.	
Company TRANSWESTERN GAS SUPPLY				Connection TO AIR NEW WELL				Allottee	
Field		Reservoir		Location		Unit J		Farm or Lease Name WOLF STATE	
Completion Date		Total Depth		Plug Back TD		Elevation		Well No. 1	
Csg. Size		Wt.		d		Set At		Perforations: From To	
Tbg. Size		Wt.		d		Set At		Perforations: From To	
Type Completion (Describe)				Packer Set At				Sec. Twp.-Blk. Rge.-Sur. 16 6S 28E	
Producing Thru		Reservoir Temp. F		Mean Annual Temp. F		Baro. Press. - P _a		County or Parish CHAVES	
L		H		C _g		% CO ₂		State NEW MEXICO	
						% N ₂		Prover Meter Run Taps	

DATE Time of Reading	ELAP. TIME Hrs.	Wellhead Working Pressure			METER OR PROVER				REMARKS (Include liquid production data: Type-A.P.I. Gravity-Amount)
		Tbg. Psig.	Csg. Psig.	Temp. F	Pressure Psig.	Diff.	Temp. F	Orifice	
1015	6	847	837	48	420	1.0	65	.625	7/64
1030	16 1/4	842	830	49	420	1.0	71	.625	
1045	16 1/2	838	825	48	420	9.5	72	.625	
1100	16 3/4	834	824	50	420	9.0	73	.625	
1115	17	830	816	50	420	9.0	73	.625	
1130	17 1/4	826	814	51	420	9.0	74	.625	
1145	17 1/2	822	810	51	420	9.0	75	.625	
1200	17 3/4	818	807	54	420	9.0	76	.625	
1215	18	812	800	55	420	9.0	77	.625	
1230	18 1/4	805	799	56	420	9.0	75	.625	
1245	18 1/2	787	795	56	420	8.5	75	.625	
1300	18 3/4	773	794	57	420	8.0	74	.625	
1315	19	760	790	56	420	7.8	74	.625	
1330	19 1/4	746	787	56	420	7.0	74	.625	
1345	19 1/2	733	786	57	420	7.0	74	.625	
1400	19 3/4	717	784	57	420	6.0	72	.625	
1415	20	703	784	58	420	5.5	72	.625	120 MCFD END RATE 3
1430	20 1/4	672	775	58	420	12.0	74	.625	9/64
1445	20 1/2	638	768	59	420	11.5	74	.625	
1500	20 3/4	635	766	59	420	5.0	74	.625	MAKING FLUID
1515	21	620	765	58	420	6.0	70	.625	
1545	21 1/2	616	765	58	420	10.0	65	.625	HEATER LIT
1600	21 3/4	640	765	59	420	12.0	66	.625	CAUGHT GAS SAMPLE
1615	22	633	762	57	420	10.0	72	.625	HEATER OFF
1630	22 1/4	622	759	57	420	12.0	73	.625	DUMPED 1/2 BBL
1645	22 1/2	615	756	54	420	12.0	76	.625	FLUID 1/4 BBL
1700	22 3/4	605	755	52	420	12.0	75	.625	
1715	23	595	755	50	420	14.0	74	.625	
1730	23 1/4	587	755	50	420	12.0	71	.625	
1745	23 1/2	587	755	50	420	10.0	70	.625	
1800	23 3/4	585	755	50	420	7.0	67	.625	2-1/2 BBLs WATER
1815	24	585	760	50	420	9.0	64	.625	151 MCFD IN ALL