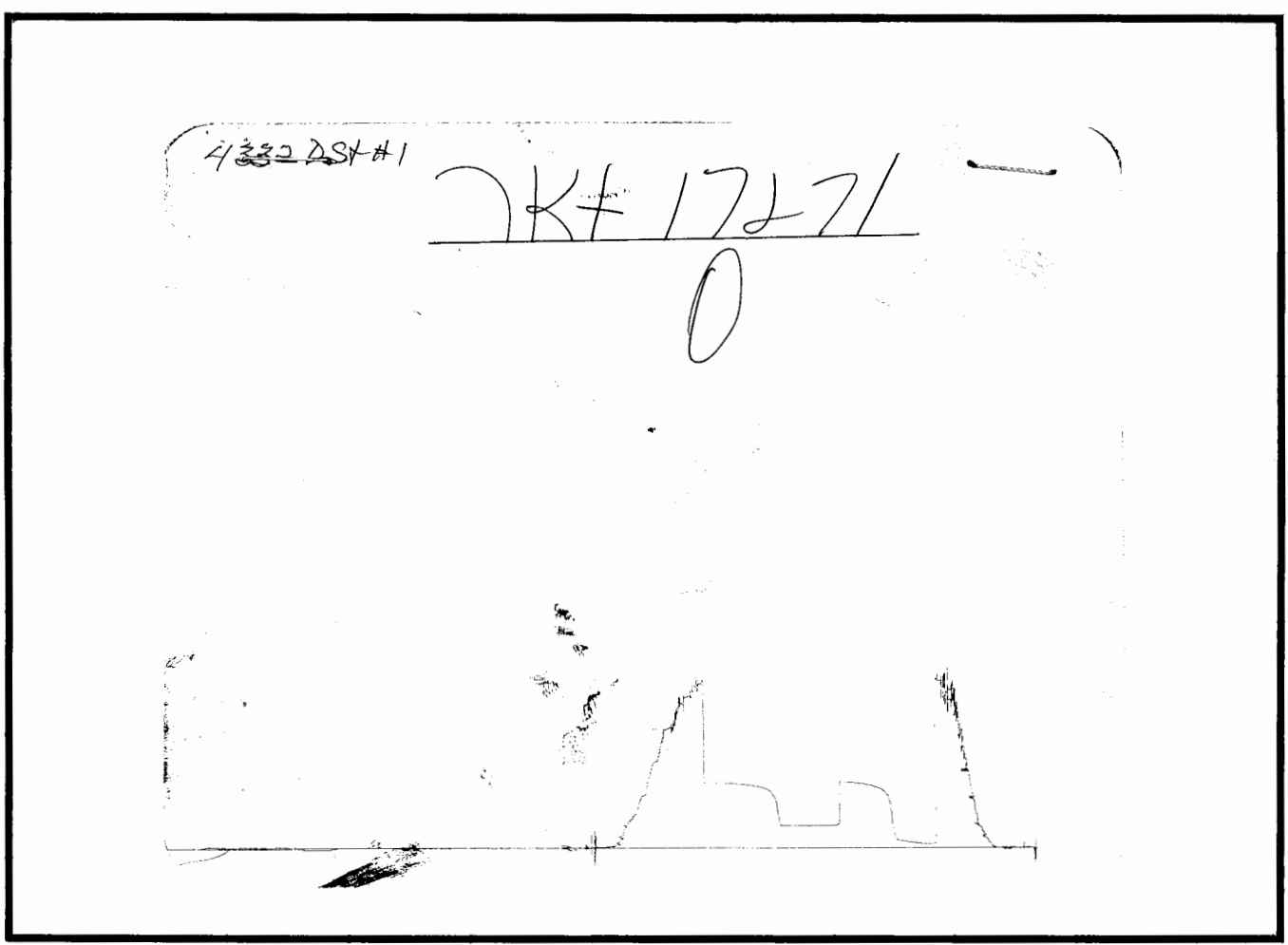


Inside Recorder



Outside Recorder

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE	: 6-30-91	TICKET	: 17271
CUSTOMER	: PETROLEUM MANAGEMENT INC.	LEASE	: FERRELL A
WELL	: 19 TEST: 1	GEOLOGIST	: STOUT ?
ELEVATION	: 1594 KB	FORMATION	: KANSAS CITY
SECTION	: 4	TOWNSHIP	: 29S
RANGE	: 8E COUNTY : BUTLER	STATE	: KANSAS
GAUGE SN#	: 1051 RANGE : 4250	CLOCK	: 12

INTERVAL FROM	: 2019	TO	: 2036	TOTAL DEPTH	: 2036
DEPTH OF SELECTIVE ZONE	:				
PACKER DEPTH	: 2014	SIZE	: 6.63		
PACKER DEPTH	: 2019	SIZE	: 6.63		
PACKER DEPTH	:	SIZE	:		
PACKER DEPTH	:	SIZE	:		

DRILLING CON.	: WHITE & ELLIS RIG 4		
MUD TYPE	: CHEMICAL	VISCOSITY	: 39
WEIGHT	: 9.0	WATER LOSS (CC)	: 11.2
CHLORIDES (PPM)	: 1600		
JARS-MAKE	:	SERIAL NUMBER	:
DID WELL FLOW ?	: NO	REVERSED OUT ?	: NO

DRILL COLLAR LENGTH	: 228 FT	I.D. inch	: 2.50
WEIGHT PIPE LENGTH	: 0 FT	I.D. inch	: 0.00
DRILL PIPE LENGTH	: 1769 FT	I.D. inch	: 3.80
TEST TOOL LENGTH	: 22 FT	TOOL SIZE	: 5.50
ANCHOR LENGTH	: 17 FT	ANCHOR SIZE	: 5.50
SURFACE CHOKE SIZE	: .75 IN	BOTTOM CHOKE SIZE	: .75
MAIN HOLE SIZE	: 7.875 IN	TOOL JOINT SIZE	: 4.5XH

BLOW COMMENT #1 : INITIAL FLOW PERIOD STRONG BLOW IN 20 MINUTES.
 BLOW COMMENT #2 : FINAL FLOW PERIOD STRONG BLOW IN 10 MINUTES.
 BLOW COMMENT #3 :
 BLOW COMMENT #4 :

WESTERN TESTING CO. INC.
WICHITA-KANSAS

Pressure Transient Report

COMPANY : PETROLEUM MANAGEMENT INC.
RIG : BUTLER-KANSAS
FIELD : FERRELL A
WELL : 19
DATE : 6-30-91
GAUGE NO : 1051

OPERATIONAL COMMENTS

RECOVERED 300 FT. OF GAS ABOVE FLUID

RECOVERED : 120 FT OF: GAS & WATER CUT MUD
 RECOVERED : 0 FT OF: 10%GAS;30%WATER;60%MUD
 RECOVERED : 120 FT OF: WATER - CHLORIDES 73000 P.P.M.

Total Barrels Fluid = 1.55
 Total Fluid Prod Rate = 29.81 BFPD
 Indicated Wtr Rate = 19.38 BWPD

REMARK 1 :
 REMARK 2 : RECOVERED 300 FT. OF GAS ABOVE FLUID
 REMARK 3 :
 REMARK 4 :

SET PACKER(S) :	10:55 P.M.	TIME STARTED OFF BOTTOM :	1:55 A.M.
WELL TEMPERATURE :	102		
INITIAL HYDROSTATIC PRESSURE		(A)	998
INITIAL FLOW PERIOD MIN:	30	(B)	59 PSI TO (C) : 59
INITIAL CLOSED IN PERIOD MIN:	48	(D)	418
FINAL FLOW PERIOD MIN:	45	(E)	119 PSI TO (F) : 119
FINAL CLOSED IN PERIOD MIN:	63	(G)	419
FINAL HYDROSTATIC PRESSURE		(H)	981

COMPANY : PETROLEUM MANAGEMENT INC.
WELL : 19
GAUGE # : 1051
DATE : 30/ 6/91

FIELD : FERRELL A
JOB # : 17271
DEPTH : 2036
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
INITIAL FLOW PERIOD					
2	10:55: 0	0.000	59.000	102.00	0.000
3	10:59:59	0.083	59.000	102.00	0.000
4	11: 5: 0	0.167	59.000	102.00	0.000
5	11:10: 0	0.250	59.000	102.00	0.000
6	11:14:59	0.333	59.000	102.00	0.000
7	11:20: 0	0.417	59.000	102.00	0.000
8	11:25: 0	0.500	59.000	102.00	0.000
INITIAL SHUT-IN PERIOD					
9	11:28: 0	0.550	81.000	102.00	22.000
10	11:31: 0	0.600	205.000	102.00	124.000
11	11:34: 0	0.650	326.000	102.00	121.000
12	11:37: 0	0.700	361.000	102.00	35.000
13	11:40: 0	0.750	377.000	102.00	16.000
14	11:43: 0	0.800	387.000	102.00	10.000
15	11:46: 0	0.850	395.000	102.00	8.000
16	11:49: 0	0.900	400.000	102.00	5.000
17	11:52: 0	0.950	403.000	102.00	3.000
18	11:55: 0	1.000	406.000	102.00	3.000
19	11:58: 0	1.050	410.000	102.00	4.000
20	12: 1: 0	1.100	413.000	102.00	3.000
21	12: 4: 0	1.150	415.000	102.00	2.000
22	12: 7: 0	1.200	416.000	102.00	1.000
23	12:10: 0	1.250	417.000	102.00	1.000
24	12:13: 0	1.300	418.000	102.00	1.000
FINAL FLOW PERIOD					
25	12:14: 0	1.317	119.000	102.00	-299.000
26	12:17:59	1.383	119.000	102.00	0.000
27	12:23: 0	1.467	119.000	102.00	0.000
28	12:28: 0	1.550	119.000	102.00	0.000
29	12:32:59	1.633	119.000	102.00	0.000
30	12:38: 0	1.717	119.000	102.00	0.000
31	12:43: 0	1.800	119.000	102.00	0.000
32	12:47:59	1.883	119.000	102.00	0.000
33	12:53: 0	1.967	119.000	102.00	0.000
34	12:58: 0	2.050	119.000	102.00	0.000
FINAL SHUT-IN PERIOD					
35	13: 1: 0	2.100	196.000	102.00	77.000
36	13: 3:59	2.150	312.000	102.00	116.000
37	13: 7: 0	2.200	351.000	102.00	39.000
38	13:10: 0	2.250	365.000	102.00	14.000
39	13:13: 0	2.300	374.000	102.00	9.000
40	13:16: 0	2.350	382.000	102.00	8.000
41	13:18:59	2.400	387.000	102.00	5.000
42	13:22: 0	2.450	393.000	102.00	6.000
43	13:25: 0	2.500	396.000	102.00	3.000
44	13:28: 0	2.550	400.000	102.00	4.000
45	13:31: 0	2.600	403.000	102.00	3.000
46	13:34: 0	2.650	406.000	102.00	3.000
47	13:36:59	2.700	409.000	102.00	3.000
48	13:40: 0	2.750	411.000	102.00	2.000

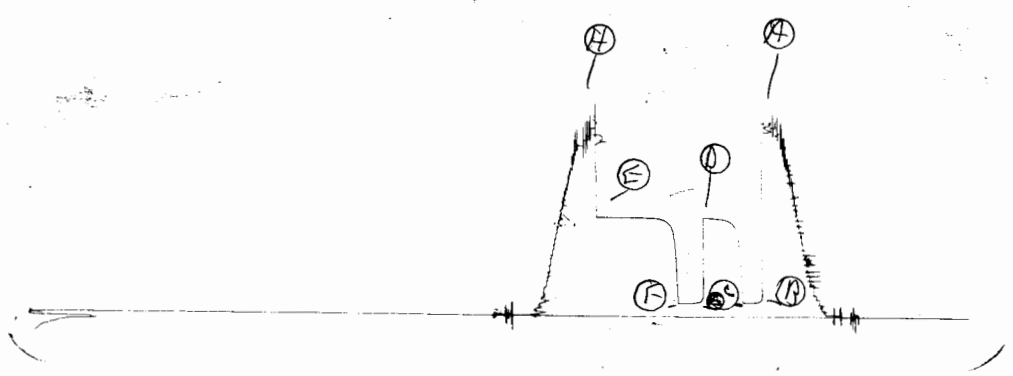
COMPANY : PETROLEUM MANAGEMENT INC.
WELL : 19
GAUGE # : 1051
DATE : 30/ 6/91

FIELD : FERRELL A
JOB # : 17271
DEPTH : 2036
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
49	13:43: 0	2.800	413.000	102.00	2.000
50	13:46: 0	2.850	414.000	102.00	1.000
51	13:49: 0	2.900	415.000	102.00	1.000
52	13:51:59	2.950	416.000	102.00	1.000
53	13:55: 0	3.000	417.000	102.00	1.000
54	13:58: 0	3.050	418.000	102.00	1.000
55	14: 1: 0	3.100	419.000	102.00	1.000

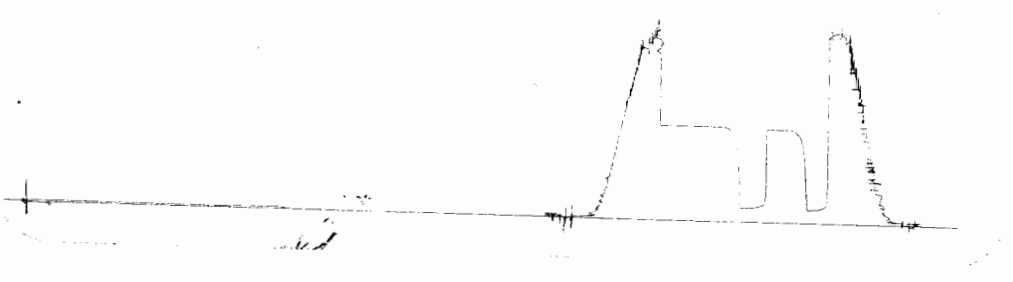
WESTERN TESTING CO. INC.

1051 DS#2
KT 17272
I



Inside Recorder

4332 DS#2
KT 17272
O



Outside Recorder

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE	: 7-1-91	TICKET	: 17272
CUSTOMER	: PETROLEUM MANAGEMENT INC.	LEASE	: FERRELL A
WELL	: 19 TEST: 2	GEOLOGIST	: STOUT
ELEVATION	: 1594 KB	FORMATION	: K.C. LOWER
SECTION	: 4	TOWNSHIP	: 29S
RANGE	: 8E COUNTY : BUTLER	STATE	: KANSAS
GAUGE SN#	: 1051 RANGE : 4250	CLOCK	: 12

INTERVAL FROM	: 2129	TO	: 2158	TOTAL DEPTH	: 2158
DEPTH OF SELECTIVE ZONE	:				
PACKER DEPTH	: 2124	SIZE	: 6.63		
PACKER DEPTH	: 2129	SIZE	: 6.63		
PACKER DEPTH	:	SIZE	:		
PACKER DEPTH	:	SIZE	:		

DRILLING CON.	: WHITE & ELLIS		
MUD TYPE	: CHEMICAL	VISCOSITY	: 50
WEIGHT	: 9.2	WATER LOSS (CC)	: 10.4
CHLORIDES (PPM)	: 1500		
JARS-MAKE	:	SERIAL NUMBER	:
DID WELL FLOW ?	: NO	REVERSED OUT ?	: NO

DRILL COLLAR LENGTH	: 228	FT	I.D. inch	: 2.50
WEIGHT PIPE LENGTH	: 0	FT	I.D. inch	: 0.00
DRILL PIPE LENGTH	: 1879	FT	I.D. inch	: 3.80
TEST TOOL LENGTH	: 22	FT	TOOL SIZE	: 5.50
ANCHOR LENGTH	: 29	FT	ANCHOR SIZE	: 5.50
SURFACE CHOKE SIZE	: .75	IN	BOTTOM CHOKE SIZE	: .75
MAIN HOLE SIZE	: 7.875	IN	TOOL JOINT SIZE	: 4.5XH

BLOW COMMENT #1 : INITIAL FLOW PERIOD STRONG BLOW IN 2 MINUTES.
 BLOW COMMENT #2 : FINAL FLOW PERIOD STRONG BLOW - GAS TO SURFACE
 BLOW COMMENT #3 : IN 5 MINUTES. SEE FLOW CHART.
 BLOW COMMENT #4 :

RECOVERED : 50 FT OF: MUD

Total Barrels Fluid = 0.30
Total Fluid Prod Rate = 12.49 BFPD
Indicated Wtr Rate = 1.25 BWPD

REMARK 1 :
REMARK 2 :
REMARK 3 :
REMARK 4 :

SET PACKER(S) : 5:35 P.M.

TIME STARTED OFF BOTTOM : 7:40 P.M.

WELL TEMPERATURE : 105

INITIAL HYDROSTATIC PRESSURE

INITIAL FLOW PERIOD MIN: 15

INITIAL CLOSED IN PERIOD MIN: 30

FINAL FLOW PERIOD MIN: 20

FINAL CLOSED IN PERIOD MIN: 60

FINAL HYDROSTATIC PRESSURE

(A) 1078

(B) 82 PSI TO (C) : 82

(D) 555

(E) 76 PSI TO (F) : 76

(G) 555

(H) 1046

WESTERN TESTING CO. INC.
WICHITA-KANSAS

Pressure Transient Report

COMPANY : PETROLEUM MANAGEMENT INC.
RIG : BUTLER-KANSAS
FIELD : FERRELL A
WELL : 19
DATE : 7-1-91
GAUGE NO : 1051

OPERATIONAL COMMENTS

GAS FLOW REPORT

Date : 7-1-91	Ticket # : 17272
Customer : PETROLEUM MANAGEMENT INC.	Lease : FERRELL A
Well : 19 Test : 2	Geologist : STOUT
Elevation (KB) : 1594 Formation : K.C. LOWER	
Section : 4 Township : 29S	
Range : 8E County : BUTLER	State : KANSAS
Gauge SN # : 1051 Range : 4250	Clock : 12

TIME GAUGE (MIN)	TESTER TYPE	ORFICE SIZE	PRESSURE (PSI)	FLOW DESCRIPTION
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PRE FLOW
=====

SECOND FLOW
=====

5 MIN.	MERLA	1/2"		GAS TO SURFACE
10 MIN.	MERLA	1/2"	24"WTR	30700 C.F.P.D.
15 MIN.	MERLA	1/2"	26"WTR	31900 C.F.P.D.
20 MIN.	MERLA	1/2"	26"WTR	31900 C.F.P.D.

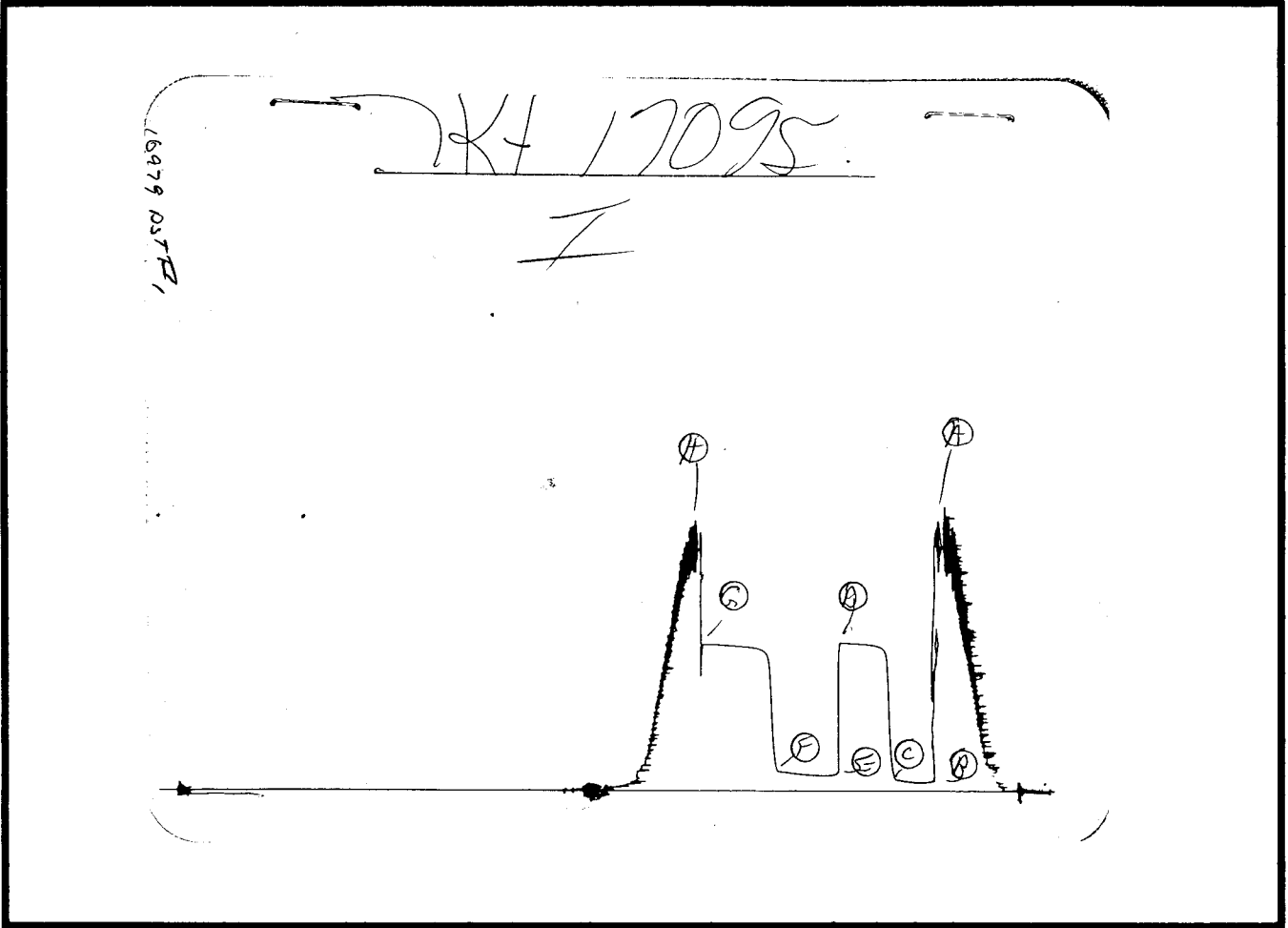
Gas Bottle SN # : 109
 Date Bottle Filled : 7-1-91
 Date to be Invoiced : 7-1-91

COMPANY : PETROLEUM MANAGEMENT INC.
 WELL : 19
 GAUGE # : 1051
 DATE : 1/ 7/91

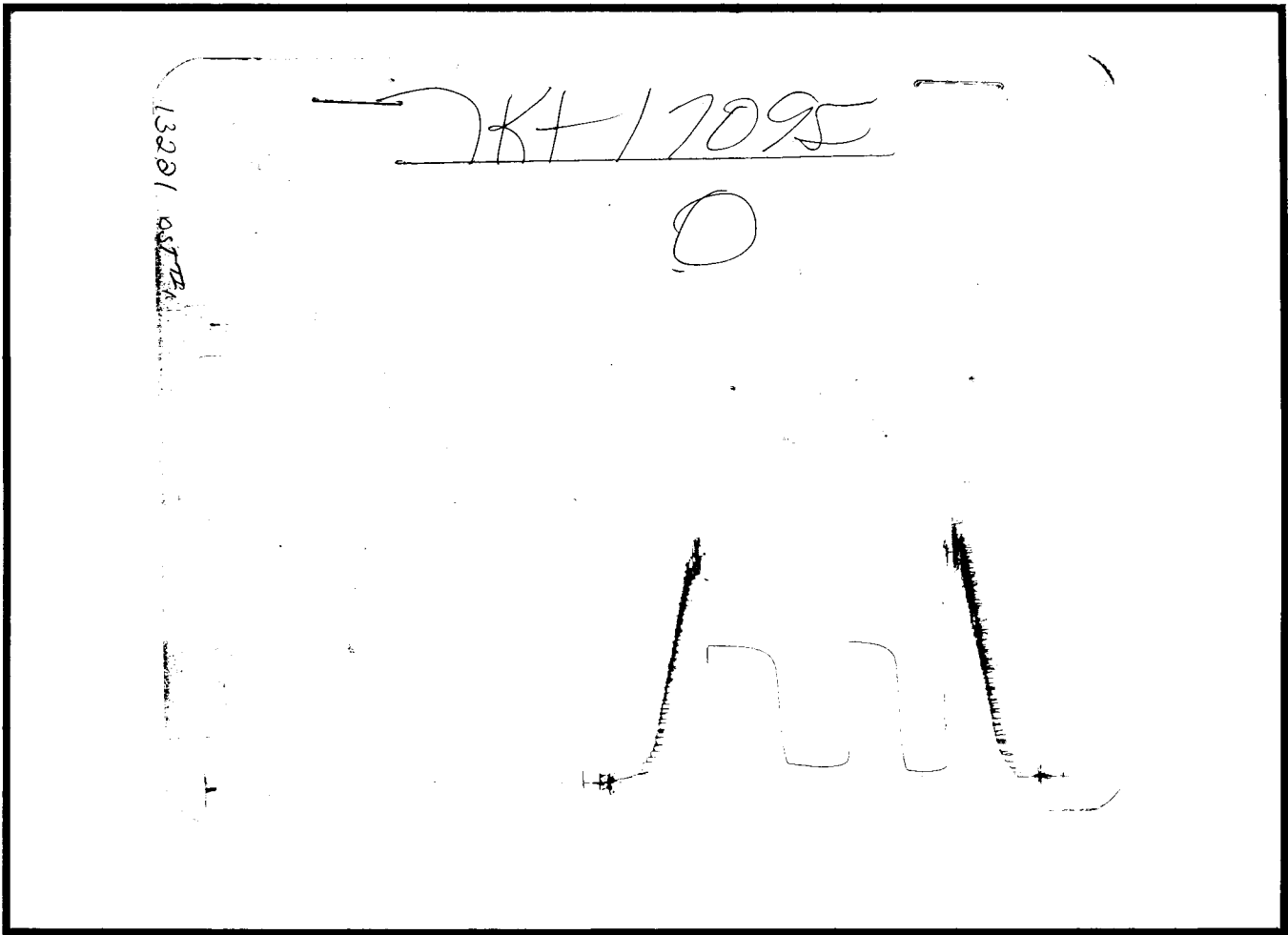
FIELD : FERRELL A
 JOB # : 17272
 DEPTH : 2158
 TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
INITIAL FLOW PERIOD					
2	5:35: 0	0.000	82.000	105.00	0.000
3	5:39:59	0.083	82.000	105.00	0.000
4	5:45: 0	0.167	82.000	105.00	0.000
5	5:50: 0	0.250	82.000	105.00	0.000
INITIAL SHUT-IN PERIOD					
6	5:53: 0	0.300	344.000	105.00	262.000
7	5:56: 0	0.350	478.000	105.00	134.000
8	5:59: 0	0.400	524.000	105.00	46.000
9	6: 2: 0	0.450	537.000	105.00	13.000
10	6: 5: 0	0.500	547.000	105.00	10.000
11	6: 8: 0	0.550	549.000	105.00	2.000
12	6:11: 0	0.600	551.000	105.00	2.000
13	6:14: 0	0.650	553.000	105.00	2.000
14	6:17: 0	0.700	554.000	105.00	1.000
15	6:20: 0	0.750	555.000	105.00	1.000
FINAL FLOW PERIOD					
16	6:21: 0	0.767	76.000	105.00	-479.000
17	6:24:59	0.833	76.000	105.00	0.000
18	6:30: 0	0.917	76.000	105.00	0.000
19	6:35: 0	1.000	76.000	105.00	0.000
20	6:39:59	1.083	76.000	105.00	0.000
FINAL SHUT-IN PERIOD					
21	6:42:59	1.133	372.000	105.00	296.000
22	6:45:59	1.183	499.000	105.00	127.000
23	6:48:59	1.233	528.000	105.00	29.000
24	6:51:59	1.283	542.000	105.00	14.000
25	6:54:59	1.333	550.000	105.00	8.000
26	6:57:59	1.383	553.000	105.00	3.000
27	7: 0:59	1.433	555.000	105.00	2.000
28	7: 3:59	1.483	555.000	105.00	0.000
29	7: 6:59	1.533	555.000	105.00	0.000
30	7: 9:59	1.583	555.000	105.00	0.000
31	7:12:59	1.633	555.000	105.00	0.000
32	7:15:59	1.683	555.000	105.00	0.000
33	7:18:59	1.733	555.000	105.00	0.000
34	7:21:59	1.783	555.000	105.00	0.000
35	7:24:59	1.833	555.000	105.00	0.000
36	7:27:59	1.883	555.000	105.00	0.000
37	7:30:59	1.933	555.000	105.00	0.000
38	7:33:59	1.983	555.000	105.00	0.000
39	7:36:59	2.033	555.000	105.00	0.000
40	7:39:59	2.083	555.000	105.00	0.000

WESTERN TESTING CO. INC.



Inside Recorder



Outside Recorder

101205

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE	: 7-3-91	TICKET	: 17095
CUSTOMER	: PETROLEUM MANAGEMENT INC.	LEASE	: FERRELL A
WELL	: 19 TEST: 3	GEOLOGIST	: STOUT
ELEVATION	: 1594 KB	FORMATION	: MISSISSIPPI
SECTION	: 4	TOWNSHIP	: 29S
RANGE	: 8E COUNTY : BUTLER	STATE	: KANSAS
GAUGE SN#	: 10979 RANGE : 4100	CLOCK	: 12

INTERVAL FROM	: 2723	TO	: 2734	TOTAL DEPTH	: 2734
DEPTH OF SELECTIVE ZONE	:				
PACKER DEPTH	: 2717	SIZE	: 6.63		
PACKER DEPTH	: 2723	SIZE	: 6.63		
PACKER DEPTH	:	SIZE	:		
PACKER DEPTH	:	SIZE	:		

DRILLING CON.	: WHITE & ELLIS		
MUD TYPE	: CHEMICAL	VISCOSITY	: 53
WEIGHT	: 9.6	WATER LOSS (CC)	: 9.2
CHLORIDES (PPM)	: 800		
JARS-MAKE	:	SERIAL NUMBER	:
DID WELL FLOW ?	: NO	REVERSED OUT ?	: NO

DRILL COLLAR LENGTH	: 330 FT	I.D. inch	: 2.25
WEIGHT PIPE LENGTH	: 0 FT	I.D. inch	: 0.00
DRILL PIPE LENGTH	: 2373 FT	I.D. inch	: 3.80
TEST TOOL LENGTH	: 20 FT	TOOL SIZE	: 5.50
ANCHOR LENGTH	: 11 FT	ANCHOR SIZE	: 5.50
SURFACE CHOKE SIZE	: .75 IN	BOTTOM CHOKE SIZE	: .75
MAIN HOLE SIZE	: 7.875 IN	TOOL JOINT SIZE	: 4.5XH

BLOW COMMENT #1 : INIITIAL FLOW PERIOD STRONG BLOW.
 BLOW COMMENT #2 : FINAL FLOW PERIOD VERY STRONG BLOW.
 BLOW COMMENT #3 :
 BLOW COMMENT #4 :

RECOVERED : 135 FT OF: FREE OIL - 40 GRAVITY AT 60 DEGREES
RECOVERED : 110 FT OF: OIL GASSY CUT MUD-20%GAS;10%OIL;70%MUD

Total Barrels Fluid = 1.20
Total Fluid Prod Rate = 21.69 BFPD
Indicated Oil Rate = 12.92 BOPD
Indicated Wtr Rate = 0.84 BWPD
Corrected Oil Rate = 14.62 BOPD
Corrected Wtr Rate = 0.95 BWPD

REMARK 1 :
REMARK 2 : RECOVERED 205 FT. OF GAS ABOVE FLUID
REMARK 3 :
REMARK 4 :

SET PACKER(S) : 1:30 P.M. TIME STARTED OFF BOTTOM : 4:30 P.M.
WELL TEMPERATURE : 117
INITIAL HYDROSTATIC PRESSURE (A) 1384
INITIAL FLOW PERIOD MIN: 30 (B) 54 PSI TO (C) : 66
INITIAL CLOSED IN PERIOD MIN: 45 (D) 846
FINAL FLOW PERIOD MIN: 50 (E) 92 PSI TO (F) : 113
FINAL CLOSED IN PERIOD MIN: 60 (G) 834
FINAL HYDROSTATIC PRESSURE (H) 1369

WESTERN TESTING CO. INC.
WICHITA-KANSAS

Pressure Transient Report

COMPANY : PETROLEUM MANAGEMENT INC.
RIG : BUTLER-KANSAS
FIELD : FERRELL A
WELL : 19
DATE : 7-3-91
GAUGE NO : 10979

OPERATIONAL COMMENTS

RECOVERED 205 FT. OF GAS ABOVE FLUID

COMPANY : PETROLEUM MANAGEMENT INC.
WELL : 19
GAUGE # : 10979
DATE : 3/ 7/91

FIELD : FERRELL A
JOB # : 17095
DEPTH : 2734
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
INITIAL FLOW PERIOD					
2	1:30: 0	0.000	54.000	117.00	0.000
3	1:34:59	0.083	54.000	117.00	0.000
4	1:40: 0	0.167	54.000	117.00	0.000
5	1:45: 0	0.250	54.000	117.00	0.000
6	1:49:59	0.333	58.000	117.00	4.000
7	1:55: 0	0.417	62.000	117.00	4.000
8	2: 0: 0	0.500	66.000	117.00	4.000
INITIAL SHUT-IN PERIOD					
9	2: 3: 0	0.550	149.000	117.00	83.000
10	2: 6: 0	0.600	430.000	117.00	281.000
11	2: 9: 0	0.650	773.000	117.00	343.000
12	2:12: 0	0.700	813.000	117.00	40.000
13	2:15: 0	0.750	824.000	117.00	11.000
14	2:18: 0	0.800	830.000	117.00	6.000
15	2:21: 0	0.850	836.000	117.00	6.000
16	2:24: 0	0.900	838.000	117.00	2.000
17	2:27: 0	0.950	840.000	117.00	2.000
18	2:30: 0	1.000	841.000	117.00	1.000
19	2:33: 0	1.050	842.000	117.00	1.000
20	2:36: 0	1.100	843.000	117.00	1.000
21	2:39: 0	1.150	844.000	117.00	1.000
22	2:42: 0	1.200	845.000	117.00	1.000
23	2:45: 0	1.250	846.000	117.00	1.000
FINAL FLOW PERIOD					
24	2:46: 0	1.267	92.000	117.00	-754.000
25	2:49:59	1.333	92.000	117.00	0.000
26	2:55: 0	1.417	92.000	117.00	0.000
27	3: 0: 0	1.500	92.000	117.00	0.000
28	3: 4:59	1.583	92.000	117.00	0.000
29	3:10: 0	1.667	94.000	117.00	2.000
30	3:15: 0	1.750	98.000	117.00	4.000
31	3:19:59	1.833	103.000	117.00	5.000
32	3:25: 0	1.917	108.000	117.00	5.000
33	3:30: 0	2.000	111.000	117.00	3.000
34	3:34:59	2.083	113.000	117.00	2.000
FINAL SHUT-IN PERIOD					
35	3:37:59	2.133	245.000	117.00	132.000
36	3:40:59	2.183	669.000	117.00	424.000
37	3:43:59	2.233	778.000	117.00	109.000
38	3:46:59	2.283	798.000	117.00	20.000
39	3:49:59	2.333	807.000	117.00	9.000
40	3:52:59	2.383	815.000	117.00	8.000
41	3:55:59	2.433	819.000	117.00	4.000
42	3:58:59	2.483	821.000	117.00	2.000
43	4: 1:59	2.533	823.000	117.00	2.000
44	4: 4:59	2.583	825.000	117.00	2.000
45	4: 7:59	2.633	827.000	117.00	2.000
46	4:10:59	2.683	828.000	117.00	1.000
47	4:13:59	2.733	829.000	117.00	1.000
48	4:16:59	2.783	830.000	117.00	1.000

101205

COMPANY : PETROLEUM MANAGEMENT INC.
WELL : 19
GAUGE # : 10979
DATE : 3/ 7/91

FIELD : FERRELL A
JOB # : 17095
DEPTH : 2734
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
49	4:19:59	2.833	831.000	117.00	1.000
50	4:22:59	2.883	832.000	117.00	1.000
51	4:25:59	2.933	833.000	117.00	1.000
52	4:28:59	2.983	834.000	117.00	1.000
53	4:31:59	3.033	834.000	117.00	0.000
54	4:34:59	3.083	834.000	117.00	0.000

WESTERN TESTING CO. INC.