

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE : 9-7-86 TICKET : 11124
CUSTOMER : MID-AMERICAN HYDROCARBON INC. LEASE : STOVER
WELL : #1 TEST: 1 GEOLOGIST : D. DEBOER
ELEVATION : 2029 FORMATION : NA
SECTION : 34 TOWNSHIP : 24S
RANGE : 15W COUNTY : STAFFORD STATE : KANSAS
GAUGE SN# : 10270 RANGE : 4150 CLOCK : 12

INTERVAL FROM : 4110 TO : 4170 TOTAL DEPTH : 4170
DEPTH OF SELECTIVE ZONE :
PACKER DEPTH : 4105 SIZE : 6.63
PACKER DEPTH : 4110 SIZE : 6.63
PACKER DEPTH : SIZE :
PACKER DEPTH : SIZE :

DRILLING CON. : BOGER DRILLING RIG #1
MUD TYPE : CHEMICAL VISCOSITY : 48
WEIGHT : 9.4 WATER LOSS (CC) : 11.4
CHLORIDES (PPM) : 7500
JARS-MAKE : WTC SERIAL NUMBER : 417
DID WELL FLOW ? : NO REVERSED OUT ? : NO

DRILL COLLAR LENGTH : 30 FT I.D. inch : 2.20
WEIGHT PIPE LENGTH : 0 FT I.D. inch : 0.00
DRILL PIPE LENGTH : 4053 FT I.D. inch : 3.80
TEST TOOL LENGTH : 27 FT TOOL SIZE : 5.50
ANCHOR LENGTH : 60 FT ANCHOR SIZE : 5.50
SURFACE CHOKE SIZE : .75 IN BOTTOM CHOKE SIZE : .75
MAIN HOLE SIZE : 7.875 IN TOOL JOINT SIZE : 4.5 XH

BLOW COMMENT #1 : INITIAL FLOW: WEAK BLOW THROUGHOUT-1/2"
BLOW COMMENT #2 : DECREASED TO SURFACE BLOW.
BLOW COMMENT #3 : NO BLOW ON THE FINAL FLOW.
BLOW COMMENT #4 :

RECOVERED : 30 FT OF: MUD / WITH SCUM OF OIL IN
RECOVERED : 0 FT OF: GRINDOUT

Total Barrels Fluid = 0.14
Total Fluid Prod Rate = 3.38 BFPD
Indicated Wtr Rate = 3.05 BWPD

REMARK 1 :
REMARK 2 : SET JARS OFF TWICE COMING OFF BOTTOM.
REMARK 3 :
REMARK 4 :

SET PACKER(S) : 5:00 AM TIME STARTED OFF BOTTOM : 7:00 AM
WELL TEMPERATURE : 120
INITIAL HYDROSTATIC PRESSURE (A) 2091
INITIAL FLOW PERIOD MIN: 30 (B) 77 PSI TO (C) : 127
INITIAL CLOSED IN PERIOD MIN: 30 (D) 140
FINAL FLOW PERIOD MIN: 30 (E) 140 PSI TO (F) : 145
FINAL CLOSED IN PERIOD MIN: 30 (G) 127
FINAL HYDROSTATIC PRESSURE (H) 2066

WESTERN TESTING CO. INC.
WICHITA KANSAS

Pressure Transient Report

COMPANY : MID-AMERICAN HYDROCARBON INC.
RIG : STAFFORD-KANSAS
FIELD : STOVER
WELL : #1
DATE : 9-7-86
GAUGE NO : 10270

OPERATIONAL COMMENTS

SET JARS OFF TWICE COMING OFF BOTTOM.

COMPANY : MID-AMERICAN HYDROCARBON INC.

FIELD : STOVER

WELL : #1

JOB # : 11124

GAUGE # : 10270

DEPTH : 4170

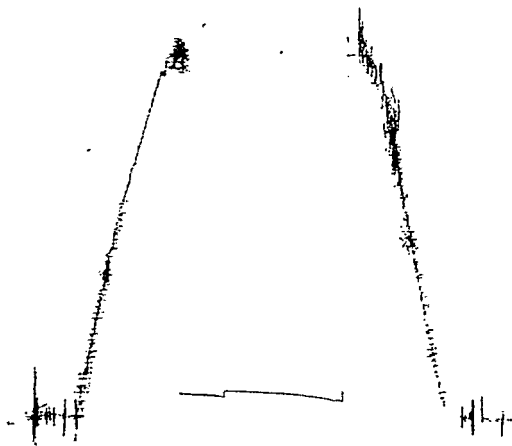
DATE : 7/ 9/86

TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
1	5: 0: 0	0.000	77.000	48.89	0.000
2	5: 5: 0	0.083	77.000	48.89	0.000
3	5:10: 0	0.167	95.000	48.89	18.000
4	5:15: 0	0.250	104.000	48.89	9.000
5	5:20: 0	0.333	113.000	48.89	9.000
6	5:25: 0	0.417	120.000	48.89	7.000
7	5:30: 0	0.500	127.000	48.89	7.000
8	5:33: 0	0.550	129.000	48.89	2.000
9	5:36: 0	0.600	131.000	48.89	2.000
10	5:39: 0	0.650	133.000	48.89	2.000
11	5:42: 0	0.700	135.000	48.89	2.000
12	5:45: 0	0.750	137.000	48.89	2.000
13	5:48: 0	0.800	138.000	48.89	1.000
14	5:51: 0	0.850	139.000	48.89	1.000
15	5:54: 0	0.900	140.000	48.89	1.000
16	5:57: 0	0.950	140.000	48.89	0.000
17	6: 0: 0	1.000	140.000	48.89	0.000
18	6: 1: 0	1.017	140.000	48.89	0.000
19	6: 5: 0	1.083	140.000	48.89	0.000
20	6:10: 0	1.167	140.000	48.89	0.000
21	6:15: 0	1.250	145.000	48.89	5.000
22	6:20: 0	1.333	145.000	48.89	0.000
23	6:25: 0	1.417	145.000	48.89	0.000
24	6:30: 0	1.500	145.000	48.89	0.000
25	6:33: 0	1.550	95.000	48.89	-50.000
26	6:36: 0	1.600	108.000	48.89	13.000
27	6:39: 0	1.650	114.000	48.89	6.000
28	6:42: 0	1.700	116.000	48.89	2.000
29	6:45: 0	1.750	118.000	48.89	2.000
30	6:48: 0	1.800	120.000	48.89	2.000
31	6:51: 0	1.850	122.000	48.89	2.000
32	6:54: 0	1.900	124.000	48.89	2.000
33	6:57: 0	1.950	126.000	48.89	2.000
34	7: 0: 0	2.000	127.000	48.89	1.000

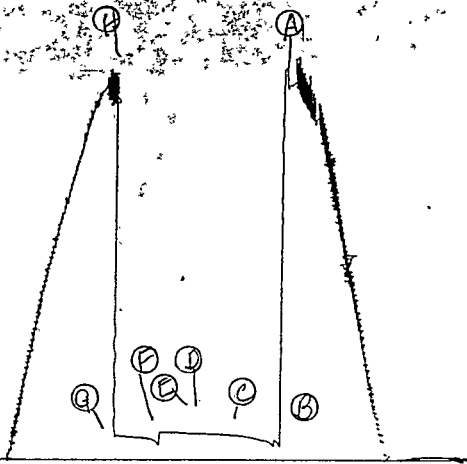
WESTERN TESTING CO. INC.

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WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE : 9-7-86 TICKET : 11125
CUSTOMER : MID-AMERICAN HYDROCARBON INC. LEASE : STOVER
WELL : #1 TEST: 2 GEOLOGIST : D. DEBOER
ELEVATION : 2029 FORMATION : MISSISSIPPI
SECTION : 34 TOWNSHIP : 24S
RANGE : 15W COUNTY : STAFFORD STATE : KANSAS
GAUGE SN# : 10270 RANGE : 4150 CLOCK : 12

INTERVAL FROM : 4177 TO : 4207 TOTAL DEPTH : 4207
DEPTH OF SELECTIVE ZONE :
PACKER DEPTH : 4172 SIZE : 6.63
PACKER DEPTH : 4177 SIZE : 6.63
PACKER DEPTH : SIZE :
PACKER DEPTH : SIZE :

DRILLING CON. : BOGER DRILLING RIG #1
MUD TYPE : CHEMICAL VISCOSITY : 51
WEIGHT : 9.3 WATER LOSS (CC) : 12
CHLORIDES (PPM) : 7500
JARS-MAKE : WTC SERIAL NUMBER : 417
DID WELL FLOW ? : NO REVERSED OUT ? : NO

DRILL COLLAR LENGTH : 0 FT I.D. inch : 0.00
WEIGHT PIPE LENGTH : 0 FT I.D. inch : 0.00
DRILL PIPE LENGTH : 4150 FT I.D. inch : 3.80
TEST TOOL LENGTH : 27 FT TOOL SIZE : 5.50
ANCHOR LENGTH : 30 FT ANCHOR SIZE : 5.50
SURFACE CHOKE SIZE : .75 IN BOTTOM CHOKE SIZE : .75
MAIN HOLE SIZE : 7.875 IN TOOL JOINT SIZE : 4.5 XH

BLOW COMMENT #1 : VERY WEAK BOW DIED IN 22 MINUTES ON THE
BLOW COMMENT #2 : INITIAL FLOW.
BLOW COMMENT #3 : FINAL FLOW; NO BLOW-FLUSHED TOOL.
BLOW COMMENT #4 :

RECOVERED : 30 FT OF: MUD

Total Barrels Fluid = 0.42
Total Fluid Prod Rate = 10.10 BFPD
Indicated Wtr Rate = 9.09 BWPD

REMARK 1 : FLUSHED TOOL FINAL FLOW.

REMARK 2 :

REMARK 3 :

REMARK 4 :

SET PACKER(S) : 6:30 PM

TIME STARTED OFF BOTTOM : 8:30 PM

WELL TEMPERATURE : 119

INITIAL HYDROSTATIC PRESSURE

(A) 2043

INITIAL FLOW PERIOD MIN: 30

(B) 41 PSI TO (C) : 41

INITIAL CLOSED IN PERIOD MIN: 30

(D) 46

FINAL FLOW PERIOD MIN: 30

(E) 40 PSI TO (F) : 44

FINAL CLOSED IN PERIOD MIN: 30

(G) 45

FINAL HYDROSTATIC PRESSURE

(H) 2043

WESTERN TESTING CO. INC.
WICHITA KANSAS

Pressure Transient Report

COMPANY : MID-AMERICAN HYDROCARBON INC.
RIG : STAFFORD-KANSAS
FIELD : STOVER
WELL : #1
DATE : 9-7-86
GAUGE NO : 10270

OPERATIONAL COMMENTS

FLUSHED TOOL FINAL FLOW.

COMPANY : MID-AMERICAN HYDROCARBON INC.

WELL : #1

GAUGE # : 10270

DATE : 7/ 9/86

FIELD : STOVER

JOB # : 11125

DEPTH : 4207

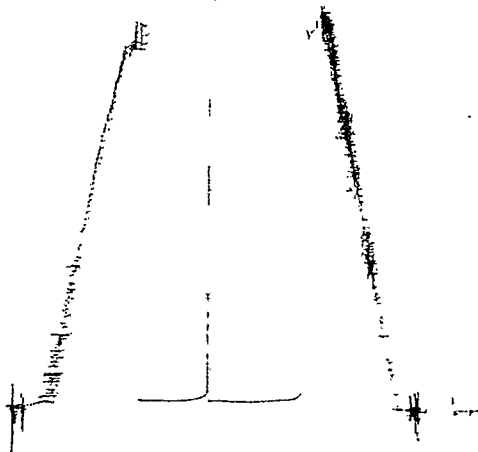
TEST : FLUSHED TOOL FINAL FLOW.

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
1	6:30: 0	0.000	41.000	48.33	0.000
2	6:35: 0	0.083	41.000	48.33	0.000
3	6:40: 0	0.167	41.000	48.33	0.000
4	6:45: 0	0.250	41.000	48.33	0.000
5	6:50: 0	0.333	41.000	48.33	0.000
6	6:55: 0	0.417	41.000	48.33	0.000
7	7: 0: 0	0.500	41.000	48.33	0.000
8	7: 3: 0	0.550	41.000	48.33	0.000
9	7: 6: 0	0.600	41.000	48.33	0.000
10	7: 9: 0	0.650	41.000	48.33	0.000
11	7:12: 0	0.700	41.000	48.33	0.000
12	7:15: 0	0.750	41.000	48.33	0.000
13	7:18: 0	0.800	42.000	48.33	1.000
14	7:21: 0	0.850	43.000	48.33	1.000
15	7:24: 0	0.900	44.000	48.33	1.000
16	7:27: 0	0.950	45.000	48.33	1.000
17	7:30: 0	1.000	46.000	48.33	1.000
18	7:31: 0	1.017	40.000	48.33	-6.000
19	7:35: 0	1.083	40.000	48.33	0.000
20	7:40: 0	1.167	62.000	48.33	22.000
21	7:45: 0	1.250	53.000	48.33	-9.000
22	7:50: 0	1.333	46.000	48.33	-7.000
23	7:55: 0	1.417	45.000	48.33	-1.000
24	8: 0: 0	1.500	44.000	48.33	-1.000
25	8: 3: 0	1.550	44.000	48.33	0.000
26	8: 6: 0	1.600	44.000	48.33	0.000
27	8: 9: 0	1.650	44.000	48.33	0.000
28	8:12: 0	1.700	44.000	48.33	0.000
29	8:15: 0	1.750	44.000	48.33	0.000
30	8:18: 0	1.800	44.000	48.33	0.000
31	8:21: 0	1.850	44.000	48.33	0.000
32	8:24: 0	1.900	45.000	48.33	1.000
33	8:27: 0	1.950	45.000	48.33	0.000
34	8:30: 0	2.000	45.000	48.33	0.000

WESTERN TESTING CO. INC.

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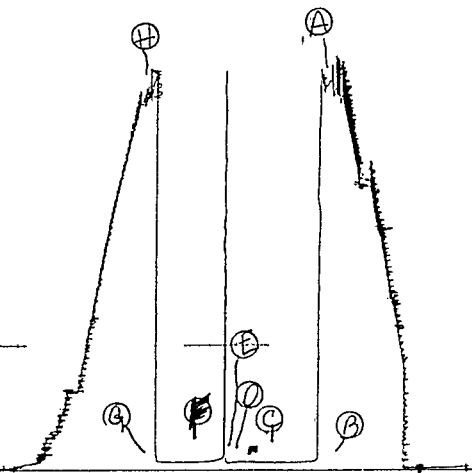
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WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE : 9-8-86 TICKET : 11626
CUSTOMER : MID-AMERICAN HYDROCARBON INC. LEASE : STOVER
WELL : #1 TEST: 3 GEOLOGIST : D. DEBOER
ELEVATION : 2029 FORMATION : ARBUCKLE
SECTION : 34 TOWNSHIP : 24S
RANGE : 15W COUNTY : STAFFORD STATE : KANSAS
GAUGE SN# : 10270 RANGE : 4150 CLOCK : 12

INTERVAL FROM : 4317 TO : 4390 * TOTAL DEPTH : 4390
DEPTH OF SELECTIVE ZONE :
PACKER DEPTH : 4312 SIZE : 6.63
PACKER DEPTH : 4317 SIZE : 6.63
PACKER DEPTH : SIZE :
PACKER DEPTH : SIZE :

DRILLING CON. : BOGER DRILLING RIG #1
MUD TYPE : CHEMICAL VISCOSITY : 45
WEIGHT : 9.1 WATER LOSS (CC) : 11.2
CHLORIDES (PPM) : 8500
JARS-MAKE : WTC SERIAL NUMBER : 417
DID WELL FLOW ? : NO REVERSED OUT ? : NO

DRILL COLLAR LENGTH : 90 FT I.D. inch : 2.20
WEIGHT PIPE LENGTH : 0 FT I.D. inch : 0.00
DRILL PIPE LENGTH : 4200 FT I.D. inch : 3.80
TEST TOOL LENGTH : 27 FT TOOL SIZE : 5.50
ANCHOR LENGTH : 73 FT ANCHOR SIZE : 5.50
SURFACE CHOKE SIZE : .75 IN BOTTOM CHOKE SIZE : .75
MAIN HOLE SIZE : 7.875 IN TOOL JOINT SIZE : 4.5 XH

BLOW COMMENT #1 : WEAK BLOW BUILDING TO STRONG IN 9 MINUTES ON
BLOW COMMENT #2 : THE INITIAL FLOW.
BLOW COMMENT #3 : STRONG BLOW THROUGHOUT THE FINAL FLOW.
BLOW COMMENT #4 :

RECOVERED	:	30	FT	OF: OIL & GAS CUT MUD
RECOVERED	:	0	FT	OF: 10% OIL; 2% GAS; 88% MUD
RECOVERED	:	120	FT	OF: MUDDY GASSY OIL
RECOVERED	:	0	FT	OF: 43% OIL; 35% GAS; 22%MUD
RECOVERED	:	210	FT	OF: MUDDY GASSY OIL
RECOVERED	:	0	FT	OF: 55% OIL; 35% GAS; 10% MUD
RECOVERED	:	30	FT	OF: CLEAN OIL GRAVITY 36

Total Barrels Fluid	=	4.63
Total Fluid Prod Rate	=	111.14 BFPD
Indicated Oil Rate	=	57.03 BOPD
Indicated Wtr Rate	=	18.98 BWPD
Corrected Oil Rate	=	82.58 BOPD
Corrected Wtr Rate	=	27.49 BWPD

REMARK 1 :
 REMARK 2 : RECOVERED 450 FEET OF GAS ABOVE FLUID.
 REMARK 3 :
 REMARK 4 :

SET PACKER(S)	:	8:55 PM	TIME STARTED OFF BOTTOM	:	11:40 PM
WELL TEMPERATURE	:	120			
INITIAL HYDROSTATIC PRESSURE			(A)	2156	
INITIAL FLOW PERIOD	MIN:	30	(B)	83	PSI TO (C) : 136
INITIAL CLOSED IN PERIOD	MIN:	45	(D)	1480	
FINAL FLOW PERIOD	MIN:	30	(E)	154	PSI TO (F) : 189
FINAL CLOSED IN PERIOD	MIN:	63	(G)	1475	
FINAL HYDROSTATIC PRESSURE			(H)	2139	

WESTERN TESTING CO. INC.
WICHITA KANSAS

Pressure Transient Report

COMPANY : MID-AMERICAN HYDROCARBON INC.
RIG : STAFFORD-KANSAS
FIELD : STOVER
WELL : #1
DATE : 9-8-86
GAUGE NO : 10270

OPERATIONAL COMMENTS

RECOVERED 450 FEET OF GAS ABOVE FLUID.

COMPANY : MID-AMERICAN HYDROCARBON INC.

FIELD : STOVER

WELL : #1

JOB # : 11626

GAUGE # : 10270

DEPTH : 4390

DATE : 8/ 9/86

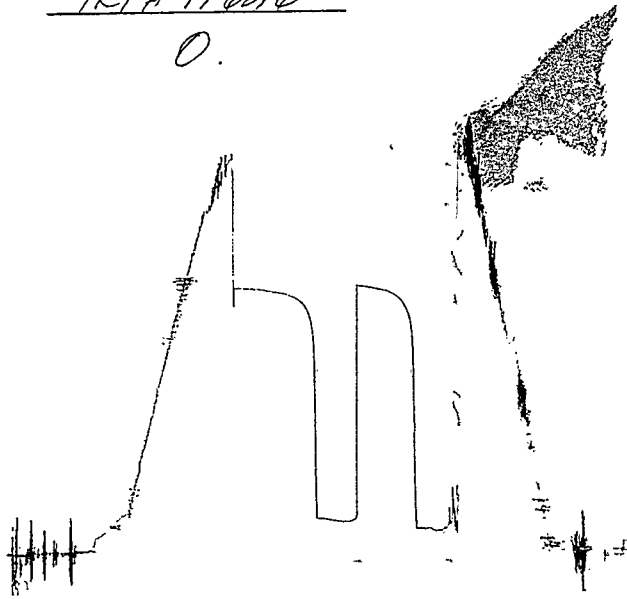
TEST :

DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
1	8:55: 0	0.000	83.000	48.89	0.000
2	9: 0: 0	0.083	91.000	48.89	8.000
3	10: 5: 0	0.167	101.000	48.89	10.000
4	10:10: 0	0.250	103.000	48.89	2.000
5	10:15: 0	0.333	133.000	48.89	30.000
6	10:20: 0	0.417	135.000	48.89	2.000
7	10:25: 0	0.500	136.000	48.89	1.000
8	10:28: 0	0.550	1209.000	48.89	1073.000
9	10:31: 0	0.600	1360.000	48.89	151.000
10	10:34: 0	0.650	1408.000	48.89	48.000
11	10:37: 0	0.700	1431.000	48.89	23.000
12	10:40: 0	0.750	1450.000	48.89	19.000
13	10:43: 0	0.800	1458.000	48.89	8.000
14	10:46: 0	0.850	1465.000	48.89	7.000
15	10:49: 0	0.900	1469.000	48.89	4.000
16	10:52: 0	0.950	1473.000	48.89	4.000
17	10:55: 0	1.000	1476.000	48.89	3.000
18	10:58: 0	1.050	1478.000	48.89	2.000
19	11: 1: 0	1.100	1479.000	48.89	1.000
20	11: 4: 0	1.150	1480.000	48.89	1.000
21	11: 7: 0	1.200	1480.000	48.89	0.000
22	11:10: 0	1.250	1480.000	48.89	0.000
23	11:11: 0	1.267	154.000	48.89	-1326.000
24	11:15: 0	1.333	154.000	48.89	0.000
25	11:20: 0	1.417	156.000	48.89	2.000
26	11:25: 0	1.500	163.000	48.89	7.000
27	11:30: 0	1.583	172.000	48.89	9.000
28	11:35: 0	1.667	183.000	48.89	11.000
29	11:40: 0	1.750	189.000	48.89	6.000
30	11:43: 0	1.800	1244.000	48.89	1055.000
31	11:46: 0	1.850	1354.000	48.89	110.000
32	11:49: 0	1.900	1394.000	48.89	40.000
33	11:52: 0	1.950	1417.000	48.89	23.000
34	11:55: 0	2.000	1431.000	48.89	14.000
35	11:58: 0	2.050	1441.000	48.89	10.000
36	12: 1: 0	2.100	1448.000	48.89	7.000
37	12: 4: 0	2.150	1452.000	48.89	4.000
38	12: 7: 0	2.200	1456.000	48.89	4.000
39	12:10: 0	2.250	1460.000	48.89	4.000
40	12:13: 0	2.300	1464.000	48.89	4.000
41	12:16: 0	2.350	1467.000	48.89	3.000
42	12:19: 0	2.400	1469.000	48.89	2.000
43	12:22: 0	2.450	1471.000	48.89	2.000
44	12:25: 0	2.500	1473.000	48.89	2.000
45	12:28: 0	2.550	1474.000	48.89	1.000
46	12:31: 0	2.600	1474.000	48.89	0.000
47	12:34: 0	2.650	1475.000	48.89	1.000
48	12:37: 0	2.700	1475.000	48.89	0.000
49	12:40: 0	2.750	1475.000	48.89	0.000
50	12:43: 0	2.800	1475.000	48.89	0.000

WESTERN TESTING CO. INC.

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