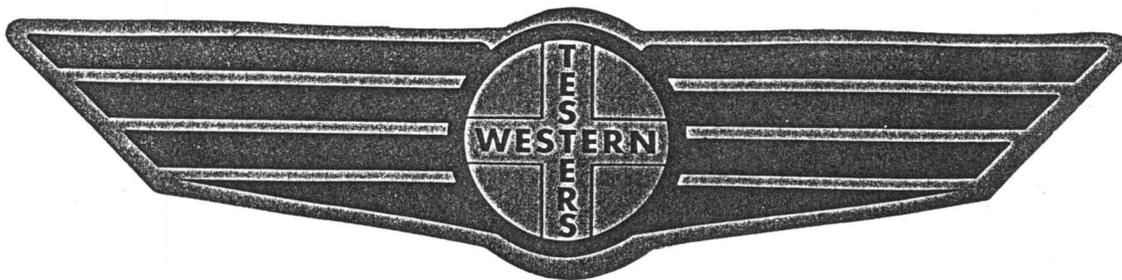


# FORMATION TEST REPORT



Home Office:

P.O. Box 1599

Wichita, Kansas 67201

Phone 1 - 800-688-7021

WESTERN TESTING CO. INC.  
SUBSURFACE PRESSURE SURVEY

DATE : 2-24-92  
CUSTOMER : RITCHIE EXPLORATION INC.  
WELL : 1 TEST: 1  
ELEVATION : 2009  
SECTION : 7  
RANGE : 15W COUNTY : BARTON  
GAUGE SN# : 3659 RANGE : 4000  
TICKET : 18377  
LEASE : SMITH TRUST  
GEOLOGIST : B. ALLEN  
FORMATION : ARBUCKLE  
TOWNSHIP : 20S  
STATE : KANSAS  
CLOCK : 12

INTERVAL FROM : 3628 TO : 3683 TOTAL DEPTH : 3683  
DEPTH OF SELECTIVE ZONE :  
PACKER DEPTH : 3628 SIZE : 6.63  
PACKER DEPTH : 3623 SIZE : 6.63  
PACKER DEPTH : SIZE :  
PACKER DEPTH : SIZE :

DRILLING CON. : ALLEN RIG 2  
MUD TYPE : CHEMICAL VISCOSITY : 44  
WEIGHT : 8.9 WATER LOSS (CC) : 11.2  
CHLORIDES (PPM) : 12000  
JARS-MAKE :  
DID WELL FLOW ? : NO SERIAL NUMBER :  
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 : 3608 FT I.D. inch : 3.80  
TEST TOOL LENGTH : 20 FT TOOL SIZE : 5.50  
ANCHOR LENGTH : 55 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 OFF BOTTOM OF  
BLOW COMMENT #2 : BUCKET IN 1/2 A MINUTE.  
BLOW COMMENT #3 : FINAL FLOW PERIOD STRONG OFF BOTTOM OF BUCKET]  
BLOW COMMENT #4 : IN 1 1/2 MINUTES.

RECOVERED : 1400 FT OF: GASSY MUDDY SALT WATER  
RECOVERED : 0 FT OF: CHLORIDES 40000 P.P.M.

Total Barrels Fluid = 19.64  
Total Fluid Prod Rate = 471.29 BFPD  
Indicated Wtr Rate = 377.03 BWPD

REMARK 1 :  
REMARK 2 : HIT BRIDGE 14 STANDS OFF BOTTOM  
REMARK 3 :  
REMARK 4 :

SET PACKER(S) : 12:50 P.M.

TIME STARTED OFF BOTTOM : 2:50 P.M.

WELL TEMPERATURE : 114

INITIAL HYDROSTATIC PRESSURE

(A) 1773

INITIAL FLOW PERIOD MIN: 30

(B) 560 PSI TO (C) : 637

INITIAL CLOSED IN PERIOD MIN: 30

(D) 792

FINAL FLOW PERIOD MIN: 30

(E) 754 PSI TO (F) : 772

FINAL CLOSED IN PERIOD MIN: 30

(G) 799

FINAL HYDROSTATIC PRESSURE

(H) 1709

WESTERN TESTING CO. INC.  
WICHITA-KANSAS

Pressure Transient Report  
-----

COMPANY : RITCHIE EXPLORATION INC.  
RIG : BARTON-KANSAS  
FIELD : SMITH TRUST  
WELL : 1  
DATE : 2-24-92  
GAUGE NO : 3659

OPERATIONAL COMMENTS

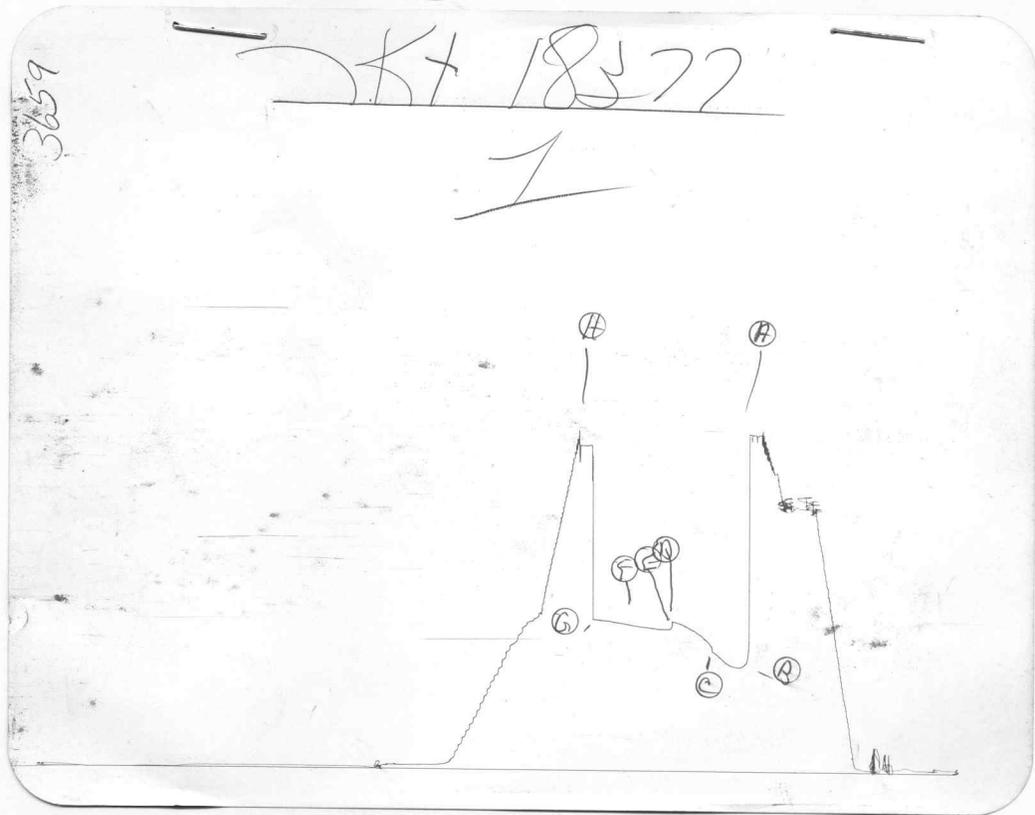
HIT BRIDGE 14 STANDS OFF BOTTOM

COMPANY : RITCHIE EXPLORATION INC.  
 WELL : 1  
 GAUGE # : 3659  
 DATE : 24/ 2/92

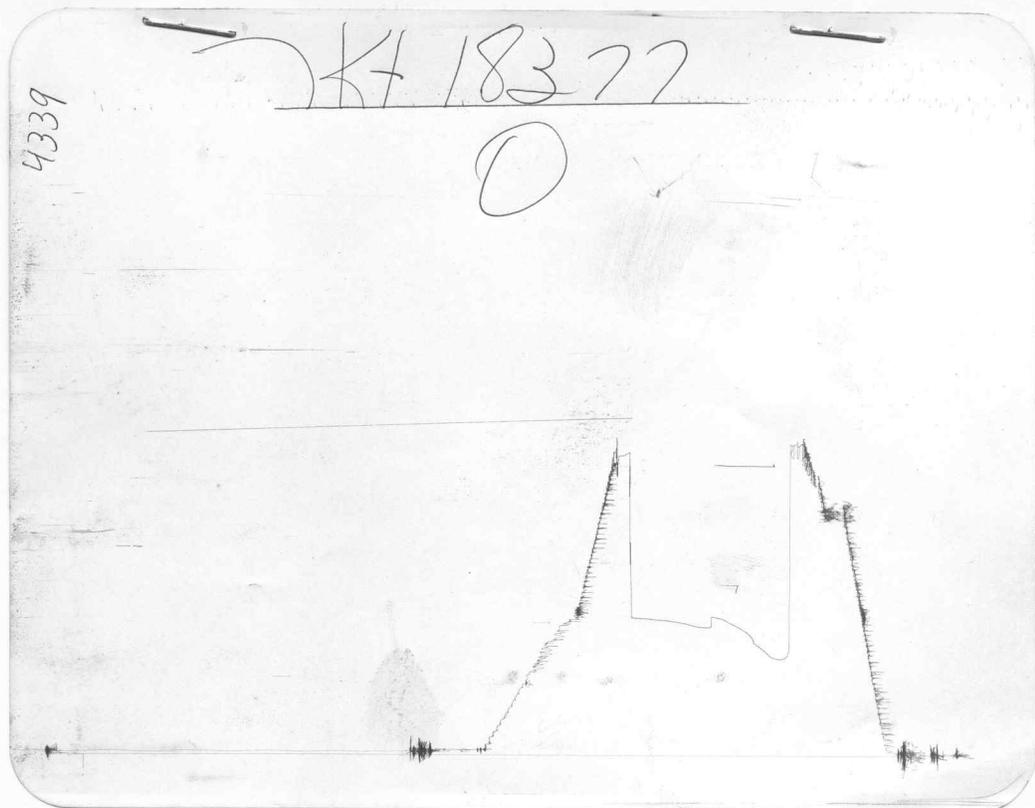
FIELD : SMITH TRUST  
 JOB # : 18377  
 DEPTH : 3683  
 TEST :

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	12:50: 0	0.000	560.000	114.00	0.000
3	12:54:59	0.083	560.000	114.00	0.000
4	13: 0: 0	0.167	560.000	114.00	0.000
5	13: 5: 0	0.250	571.000	114.00	11.000
6	13: 9:59	0.333	598.000	114.00	27.000
7	13:15: 0	0.417	625.000	114.00	27.000
8	13:20: 0	0.500	637.000	114.00	12.000
INITIAL SHUT-IN PERIOD					
9	13:23: 0	0.550	684.000	114.00	47.000
10	13:26: 0	0.600	701.000	114.00	17.000
11	13:29: 0	0.650	721.000	114.00	20.000
12	13:32: 0	0.700	735.000	114.00	14.000
13	13:35: 0	0.750	750.000	114.00	15.000
14	13:38: 0	0.800	761.000	114.00	11.000
15	13:41: 0	0.850	772.000	114.00	11.000
16	13:44: 0	0.900	781.000	114.00	9.000
17	13:47: 0	0.950	788.000	114.00	7.000
18	13:50: 0	1.000	792.000	114.00	4.000
FINAL FLOW PERIOD					
19	13:51: 0	1.017	754.000	114.00	-38.000
20	13:54:59	1.083	754.000	114.00	0.000
21	14: 0: 0	1.167	754.000	114.00	0.000
22	14: 5: 0	1.250	758.000	114.00	4.000
23	14: 9:59	1.333	762.000	114.00	4.000
24	14:15: 0	1.417	766.000	114.00	4.000
25	14:20: 0	1.500	772.000	114.00	6.000
FINAL SHUT-IN PERIOD					
26	14:23: 0	1.550	776.000	114.00	4.000
27	14:26: 0	1.600	781.000	114.00	5.000
28	14:29: 0	1.650	785.000	114.00	4.000
29	14:32: 0	1.700	788.000	114.00	3.000
30	14:35: 0	1.750	792.000	114.00	4.000
31	14:38: 0	1.800	794.000	114.00	2.000
32	14:41: 0	1.850	796.000	114.00	2.000
33	14:44: 0	1.900	797.000	114.00	1.000
34	14:47: 0	1.950	798.000	114.00	1.000
35	14:50: 0	2.000	799.000	114.00	1.000

WESTERN TESTING CO. INC.

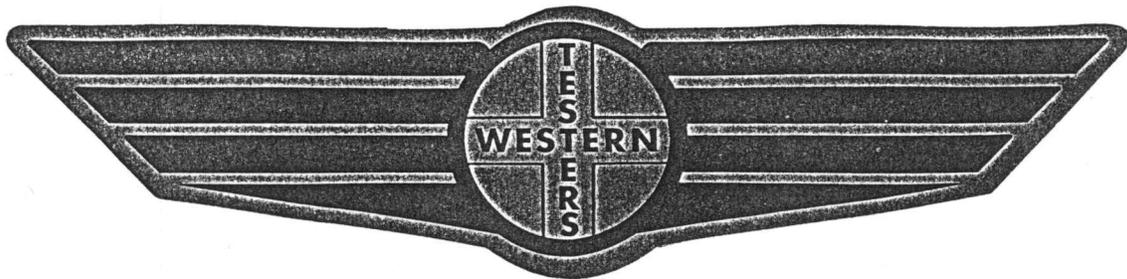


Inside Recorder



Outside Recorder

# FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800 - 688 - 7021

COMPANY            RITCHIE EXPLORATION, INC. LEASE & WELL NO.            SMITH TRUST #1            SEC. 7            TWP. 20S RGE. 15W TEST NO.            2            DATE            2/25/92

WESTERN TESTING CO. INC.  
SUBSURFACE PRESSURE SURVEY

DATE : 2-25-92  
CUSTOMER : RITCHIE EXPLORATION INC.  
WELL : 1 TEST: 2  
ELEVATION : 2011 KB  
SECTION : 7  
RANGE : 15W COUNTY : BARTON  
GAUGE SN# : 3659 RANGE : 4000  
TICKET : 18378  
LEASE : SMITH TRUST  
GEOLOGIST : B. ALLEN  
FORMATION : ARBUCKLE  
TOWNSHIP : 20S  
STATE : KANSAS  
CLOCK : 12

INTERVAL FROM : 3687 TO : 3703 TOTAL DEPTH : 3703  
DEPTH OF SELECTIVE ZONE :  
PACKER DEPTH : 3687 SIZE : 6.63  
PACKER DEPTH : SIZE :  
PACKER DEPTH : SIZE :  
PACKER DEPTH : SIZE :

DRILLING CON. : ALLEN RIG 2  
MUD TYPE : CHEMICAL VISCOSITY : 53  
WEIGHT : 8.9 WATER LOSS (CC) : 14  
CHLORIDES (PPM) : 15000  
JARS-MAKE :  
DID WELL FLOW ? : NO SERIAL NUMBER :  
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 : 3672 FT I.D. inch : 3.80  
TEST TOOL LENGTH : 15 FT TOOL SIZE : 5.50  
ANCHOR LENGTH : 16 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 OFF BOTTOM OF  
BLOW COMMENT #2 : BUCKET IN 1 MINUTE.  
BLOW COMMENT #3 : FINAL FLOW PERIOD STRONG OFF BOTTOM OF  
BLOW COMMENT #4 : BUCKET IN 5 MINUTES.

RECOVERED : 1800 FT OF: GASSY SALT WATER  
RECOVERED : 0 FT OF: CHLORIDES 40000 P.P.M.

Total Barrels Fluid = 25.25  
Total Fluid Prod Rate = 559.33 BFPD  
Indicated Wtr Rate = 559.33 BWPD

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

SET PACKER(S) : 4:30 A.M.                      TIME STARTED OFF BOTTOM : 6:30 A.M.  
WELL TEMPERATURE : 116  
INITIAL HYDROSTATIC PRESSURE (A) 1801  
INITIAL FLOW PERIOD MIN: 35 (B) 544 PSI TO (C) : 776  
INITIAL CLOSED IN PERIOD MIN: 30 (D) 827  
FINAL FLOW PERIOD MIN: 30 (E) 827 PSI TO (F) : 835  
FINAL CLOSED IN PERIOD MIN: 30 (G) 835  
FINAL HYDROSTATIC PRESSURE (H) 1749

WESTERN TESTING CO. INC.  
WICHITA-KANSAS

Pressure Transient Report  
-----

COMPANY : RITCHIE EXPLORATION INC.  
RIG : BARTON-KANSAS  
FIELD : SMITH TRUST  
WELL : 1  
DATE : 2-25-92  
GAUGE NO : 3659

OPERATIONAL COMMENTS

COMPANY : RITCHIE EXPLORATION INC.  
WELL : 1  
GAUGE # : 3659  
DATE : 25/ 2/92

FIELD : SMITH TRUST  
JOB # : 18378  
DEPTH : 3703  
TEST :

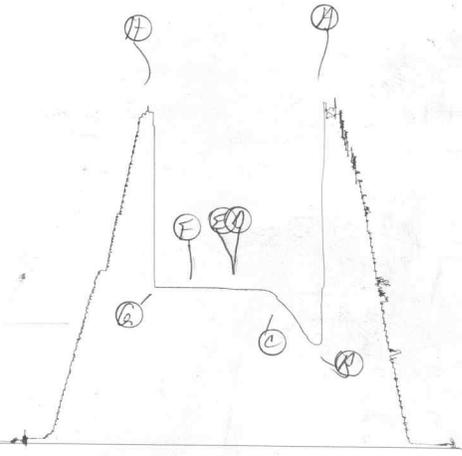
DATA No.	REAL TIME HR:MN:SS	ELAPSE TIME DELTA HOURS	PRESSURE PSIG	TEMP DEG F	DELTA P Pi-P(i-1)
INITIAL FLOW PERIOD					
2	4:30: 0	0.000	544.000	116.00	0.000
3	4:34:59	0.083	544.000	116.00	0.000
4	4:40: 0	0.167	560.000	116.00	16.000
5	4:45: 0	0.250	610.000	116.00	50.000
6	4:49:59	0.333	668.000	116.00	58.000
7	4:55: 0	0.417	710.000	116.00	42.000
8	5: 0: 0	0.500	751.000	116.00	41.000
9	5: 4:59	0.583	776.000	116.00	25.000
INITIAL SHUT-IN PERIOD					
10	5: 7:59	0.633	807.000	116.00	31.000
11	5:10:59	0.683	819.000	116.00	12.000
12	5:13:59	0.733	823.000	116.00	4.000
13	5:16:59	0.783	825.000	116.00	2.000
14	5:19:59	0.833	827.000	116.00	2.000
15	5:22:59	0.883	827.000	116.00	0.000
16	5:25:59	0.933	827.000	116.00	0.000
17	5:28:59	0.983	827.000	116.00	0.000
18	5:31:59	1.033	827.000	116.00	0.000
19	5:34:59	1.083	827.000	116.00	0.000
FINAL FLOW PERIOD					
20	5:36: 0	1.100	827.000	116.00	0.000
21	5:39:59	1.167	829.000	116.00	2.000
22	5:45: 0	1.250	832.000	116.00	3.000
23	5:49:59	1.333	834.000	116.00	2.000
24	5:54:59	1.417	835.000	116.00	1.000
25	6: 0: 0	1.500	835.000	116.00	0.000
26	6: 4:59	1.583	835.000	116.00	0.000
FINAL SHUT-IN PERIOD					
27	6: 7:59	1.633	835.000	116.00	0.000
28	6:10:59	1.683	835.000	116.00	0.000
29	6:13:59	1.733	835.000	116.00	0.000
30	6:16:59	1.783	835.000	116.00	0.000
31	6:19:59	1.833	835.000	116.00	0.000
32	6:22:59	1.883	835.000	116.00	0.000
33	6:25:59	1.933	835.000	116.00	0.000
34	6:28:59	1.983	835.000	116.00	0.000
35	6:31:59	2.033	835.000	116.00	0.000
36	6:34:59	2.083	835.000	116.00	0.000

WESTERN TESTING CO. INC.

3659

KT 18378

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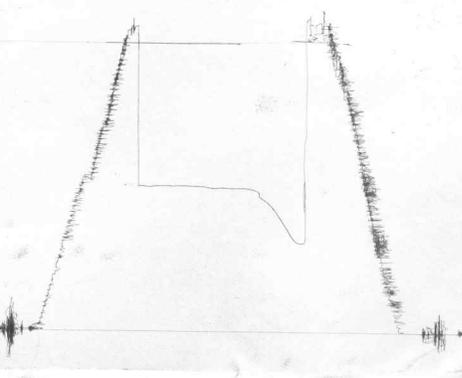


Inside Recorder

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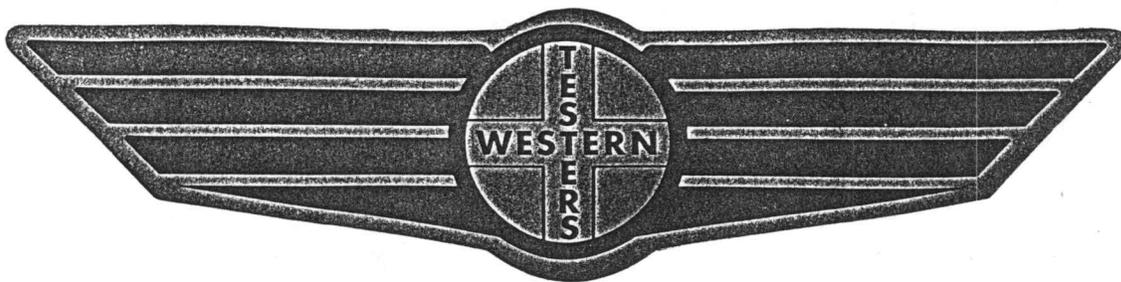
KT 18378

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Outside Recorder

# FORMATION TEST REPORT



Home Office:

P.O. Box 1599

Wichita, Kansas 67201

Phone 1 - 800 - 688 - 7021

COMPANY   RITCHIE EXPLORATION, INC.   LEASE & WELL NO.   SMITH TRUST #1   SEC.   7   TWP.   20S   RGE.   15W   TEST NO.   3   DATE   2/25/92

WESTERN TESTING CO. INC.  
SUBSURFACE PRESSURE SURVEY

DATE	:	2-25-92	TICKET	:	18379
CUSTOMER	:	RITCHIE EXPLORATION INC.	LEASE	:	SMITH TRUST
WELL	:	1	TEST:	:	3
ELEVATION	:	2011 KB	GEOLOGIST	:	B. ALLEN
SECTION	:	7	FORMATION	:	ARBUCKLE
RANGE	:	15W	COUNTY	:	BARTON
GAUGE SN#	:	3659	RANGE	:	4000
			STATE	:	KANSAS
			CLOCK	:	12

INTERVAL FROM	:	3719	TO	:	3735	TOTAL DEPTH	:	3735
DEPTH OF SELECTIVE ZONE	:							
PACKER DEPTH	:	3719	SIZE	:	6.63			
PACKER DEPTH	:		SIZE	:				
PACKER DEPTH	:		SIZE	:				
PACKER DEPTH	:		SIZE	:				

DRILLING CON.	:	ALLEN RIG 2			
MUD TYPE	:	CHEMICAL	VISCOSITY	:	44
WEIGHT	:	8.7	WATER LOSS (CC)	:	11.6
CHLORIDES (PPM)	:	15000			
JARS-MAKE	:		SERIAL NUMBER	:	
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	:	3704	FT	I.D. inch	:	3.80
TEST TOOL LENGTH	:	15	FT	TOOL SIZE	:	5.50
ANCHOR LENGTH	:	16	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 BOTTOM OF BUCKET IN 1 MIN.  
 BLOW COMMENT #2 : FINAL FLOW PERIOD STRONG BOTTOM OF BUCKET IN 5 MIN.  
 BLOW COMMENT #3 :  
 BLOW COMMENT #4 :

RECOVERED : 1000 FT OF: SALT WATER  
RECOVERED : 0 FT OF: CHLORIDES 40000 P.P.M.

Total Barrels Fluid = 14.03  
Total Fluid Prod Rate = 336.63 BFPD  
Indicated Wtr Rate = 336.63 BFPD

REMARK 1 :  
REMARK 2 : RECOVERED 240 FT. OF GAS ABOVE FLUID  
REMARK 3 :  
REMARK 4 :

SET PACKER(S) : 9:00 P.M.

TIME STARTED OFF BOTTOM : 11:00 P.M.

WELL TEMPERATURE : 116

INITIAL HYDROSTATIC PRESSURE

(A) 1795

INITIAL FLOW PERIOD MIN: 30

(B) 130

PSI TO (C) : 262

INITIAL CLOSED IN PERIOD MIN: 30

(D) 828

FINAL FLOW PERIOD MIN: 30

(E) 372

PSI TO (F) : 436

FINAL CLOSED IN PERIOD MIN: 33

(G) 832

FINAL HYDROSTATIC PRESSURE

(H) 1706

WESTERN TESTING CO. INC.  
WICHITA-KANSAS

Pressure Transient Report  
-----

COMPANY : RITCHIE EXPLORATION INC.  
RIG : BARTON-KANSAS  
FIELD : SMITH TRUST  
WELL : 1  
DATE : 2-25-92  
GAUGE NO : 3659

OPERATIONAL COMMENTS

RECOVERED 240 FT. OF GAS ABOVE FLUID

COMPANY : RITCHIE EXPLORATION INC.  
 WELL : 1  
 GAUGE # : 3659  
 DATE : 25/ 2/92

FIELD : SMITH TRUST  
 JOB # : 18379  
 DEPTH : 3735  
 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	9: 0: 0	0.000	130.000	116.00	0.000
3	9: 4:59	0.083	130.000	116.00	0.000
4	9:10: 0	0.167	133.000	116.00	3.000
5	9:15: 0	0.250	153.000	116.00	20.000
6	9:19:59	0.333	188.000	116.00	35.000
7	9:25: 0	0.417	213.000	116.00	25.000
8	9:30: 0	0.500	262.000	116.00	49.000
INITIAL SHUT-IN PERIOD					
9	9:33: 0	0.550	723.000	116.00	461.000
10	9:36: 0	0.600	765.000	116.00	42.000
11	9:39: 0	0.650	787.000	116.00	22.000
12	9:42: 0	0.700	799.000	116.00	12.000
13	9:45: 0	0.750	809.000	116.00	10.000
14	9:48: 0	0.800	814.000	116.00	5.000
15	9:51: 0	0.850	820.000	116.00	6.000
16	9:54: 0	0.900	823.000	116.00	3.000
17	9:57: 0	0.950	826.000	116.00	3.000
18	10: 0: 0	1.000	828.000	116.00	2.000
FINAL FLOW PERIOD					
19	10: 1: 0	1.017	372.000	116.00	-456.000
20	10: 4:59	1.083	372.000	116.00	0.000
21	10:10: 0	1.167	378.000	116.00	6.000
22	10:15: 0	1.250	388.000	116.00	10.000
23	10:19:59	1.333	410.000	116.00	22.000
24	10:25: 0	1.417	430.000	116.00	20.000
25	10:30: 0	1.500	436.000	116.00	6.000
FINAL SHUT-IN PERIOD					
26	10:33: 0	1.550	754.000	116.00	318.000
27	10:36: 0	1.600	781.000	116.00	27.000
28	10:39: 0	1.650	798.000	116.00	17.000
29	10:42: 0	1.700	807.000	116.00	9.000
30	10:45: 0	1.750	814.000	116.00	7.000
31	10:48: 0	1.800	819.000	116.00	5.000
32	10:51: 0	1.850	823.000	116.00	4.000
33	10:54: 0	1.900	827.000	116.00	4.000
34	10:57: 0	1.950	829.000	116.00	2.000
35	11: 0: 0	2.000	831.000	116.00	2.000
36	11: 3: 0	2.050	832.000	116.00	1.000

WESTERN TESTING CO. INC.