

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 8/17/83 TICKET #2089
CUSTOMER: RAINS & WILLIAMSON LEASE: "E" STECKEL
WELL: 1 TEST: 1 GEOLOGIST: ENGELBRECHT
ELEVATION (KB): 1634 FORMATION: LANSING
SECTION: 17 TOWNSHIP: 12S
RANGE: 14W COUNTY: RUSSELL STATE: KANSAS
GAUGE SN #1560 RANGE: 4500 CLOCK: 12

INTERVAL TEST FROM: 2773 FT TO: 2801 FT TOTAL DEPTH: 2801 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 2768 FT SIZE: 6 5/8 IN PAKER DEPTH: 2773 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PAKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RAINS & WILLIAMSON
MUD TYPE: STARCH VISCOSITY: 44
WEIGHT: 10.0 WATER LOSS (CC): 26.4
CHLORIDES (P.P.M.): 62000

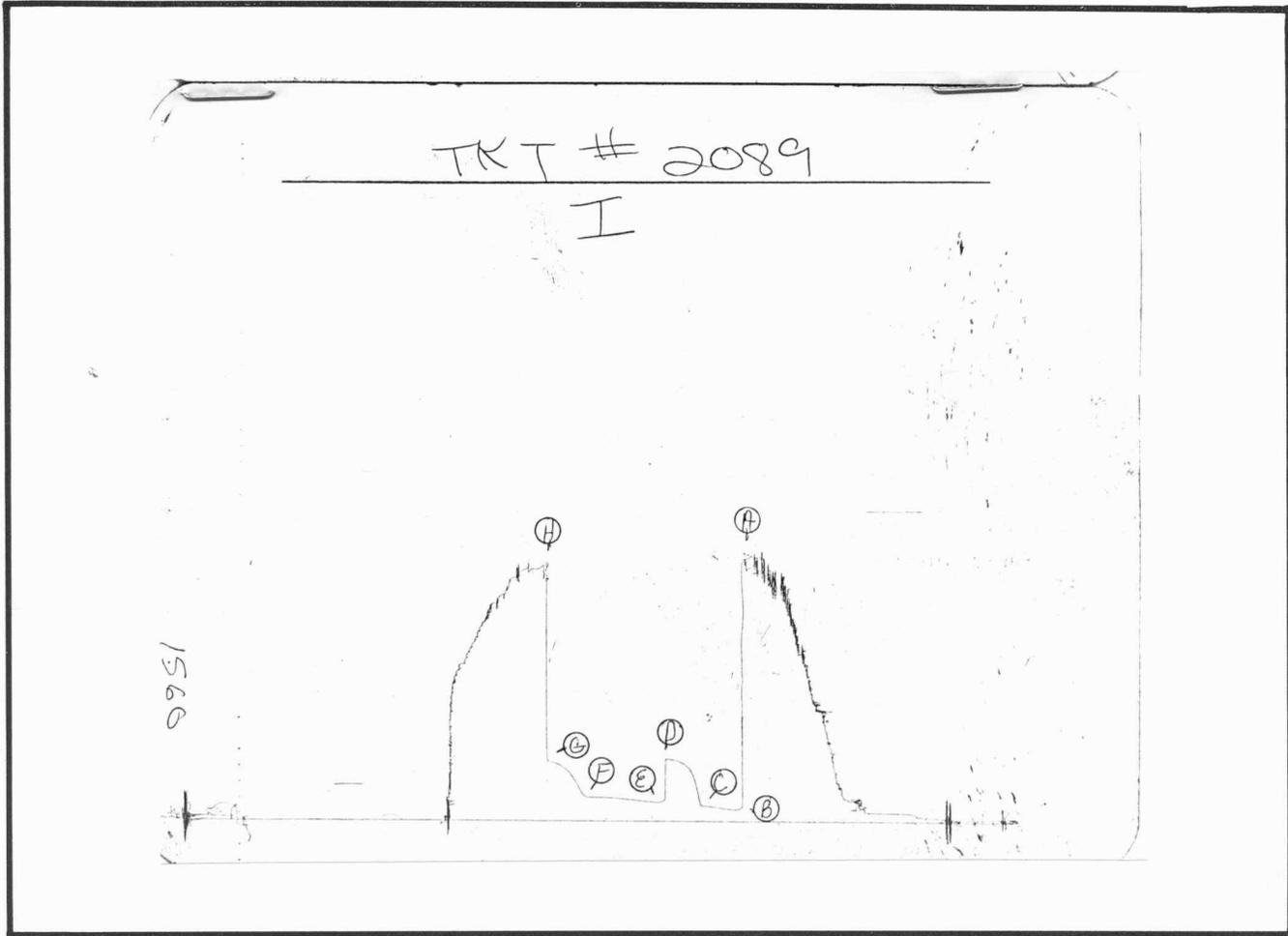
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 240 FT I.D.: 2.2 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 2512 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 21 FT TOOL SIZE: 5 1/2 IN
ANCHOR LENGTH: 28 FT SIZE: 5 1/2 IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 XH IN

BLOW: INITIAL FLOW PERIOD WEAK BLOW BUILDING
TO GOOD BLOW (1 TO 7 INCHES)
FINAL FLOW PERIOD GOOD BLOW THROUGHOUT.
(8 inch blow)

RECOVERED: 355 FT OF: GAS IN PIPE
RECOVERED: 5 FT OF: SLIGHTLY OIL & GAS CUT MUD
RECOVERED: FT OF: 5% OIL; 20% GAS; 75% MUD
RECOVERED: 60 FT OF: OIL & GAS CUT MUD
RECOVERED: FT OF: 18% OIL; 22% GAS; 60% MUD
RECOVERED: 60 FT OF: MUDDY GASSY OIL
RECOVERED: FT OF: 25% OIL; 65% GAS; 5% WATER; 5% MUD
RECOVERED: 120 FT OF: MUDDY GASSY OIL
RECOVERED: FT OF: 35% OIL; 50% GAS; 10% WATER; 5% MUD

REMARKS: CHLORIDES 61000 PPM
GRAVITY 38

TIME SET PACKER(S): 12:45 PM TIME STARTED OFF BOTTOM: 3:15 PM
WELL TEMPERATURE: 0 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1538 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 75 PSI TO (C) 97 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 390 PSI
FINAL FLOW PERIOD MIN: 60 (E) 119 PSI TO (F) 149 PSI
FINAL CLOSED IN PERIOD MIN: 30 (G) 372 PSI
FINAL HYDROSTATIC PRESSURE (H) 1532 PSI



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1612	1538	PSI
(B) First Initial Flow Pressure	69	75	PSI
(C) First Final Flow Pressure	92	97	PSI
(D) Initial Closed-in Pressure	381	390	PSI
(E) Second Initial Flow Pressure	115	119	PSI
(F) Second Final Flow Pressure	132	149	PSI
(G) Final Closed-in Pressure	370	372	PSI
(H) Final Hydrostatic Mud	1578	1532	PSI

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 8/18/83 TICKET #2090
CUSTOMER: RAINS & WILLIAMSON LEASE: "E" STECKEL
WELL: 1 TEST: 2 GEOLOGIST: ENGELBRECHT
ELEVATION (KB): 1634 FORMATION: LANSING
SECTION: 17 TOWNSHIP: 12S
RANGE: 14W COUNTY: RUSSELL STATE: KANSAS
GAUGE SN #1560 RANGE: 4500 CLOCK: 12

INTERVAL TEST FROM: 2827 FT TO: 2837 FT TOTAL DEPTH: 2837 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 2822 FT SIZE: 6 5/8 IN PACKER DEPTH: 2827 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RAINS & WILLIAMSON
MUD TYPE: STARCH VISCOSITY: 44
WEIGHT: 10.0 WATER LOSS (CC): 26.4
CHLORIDES (P.P.M.): 62000

JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 240 FT I.D.: 2.2 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 2566 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 21 FT TOOL SIZE: 5 1/2 IN
ANCHOR LENGTH: 10 FT SIZE: 5 1/2 IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 XH IN

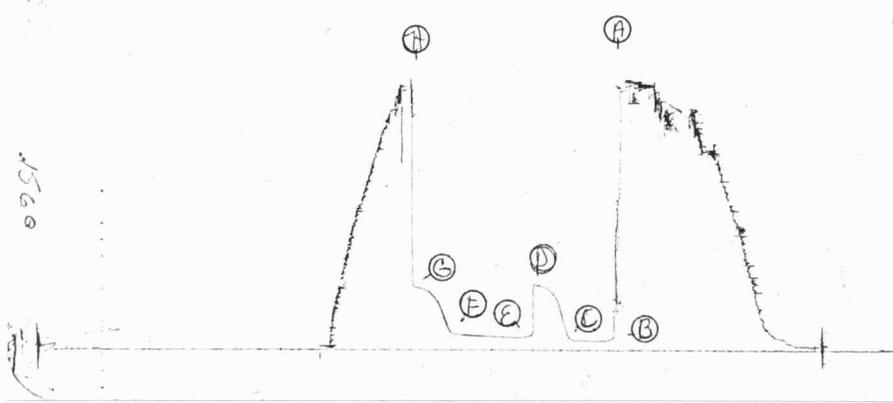
BLOW: INITIAL FLOW PERIOD WEAK BLOW BUILDING
TO FAIR BLOW - 1/2 INCH TO 5 INCH BLOW.
FINAL FLOW PERIOD FAIR BLOW BUILDING
TO STRONG BLOW.

RECOVERED: 400 FT OF: GAS IN PIPE
RECOVERED: 20 FT OF: HEAVY OIL & GAS CUT MUD
RECOVERED: FT OF: 42% OIL; 8% GAS; 50% MUD
RECOVERED: 120 FT OF: GASSY FROGGY OIL
RECOVERED: FT OF: 40% OIL; 50% GAS; 5% WATER; 5% MUD
RECOVERED: 60 FT OF: CLEAN GASSY OIL GRAVITY 43
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 8:30 AM TIME STARTED OFF BOTTOM: 11:00 AM
WELL TEMPERATURE: 99 'F
INITIAL HYDROSTATIC PRESSURE: (A) 1527 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 58 PSI TO (C) 63 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 393 PSI
FINAL FLOW PERIOD MIN: 60 (E) 80 PSI TO (F) 99 PSI
FINAL CLOSED IN PERIOD MIN: 30 (G) 382 PSI
FINAL HYDROSTATIC PRESSURE (H) 1527 PSI

TKT # 2090
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This is an actual photograph of recorder chart.

POINT	PRESSURE		PSI
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1590	1527	PSI
(B) First Initial Flow Pressure	57	58	PSI
(C) First Final Flow Pressure	57	63	PSI
(D) Initial Closed-in Pressure	381	393	PSI
(E) Second Initial Flow Pressure	81	80	PSI
(F) Second Final Flow Pressure	92	99	PSI
(G) Final Closed-in Pressure	381	382	PSI
(H) Final Hydrostatic Mud	1590	1527	PSI

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 8/19/83
CUSTOMER: RAINS & WILLIAMSON
WELL: 1 TEST: 3
ELEVATION (KB): 1634 FORMATION: LANSING
SECTION: 17 TOWNSHIP: 12S
RANGE: 14W COUNTY: RUSSELL STATE: KANSAS
GAUGE SN #1560 RANGE: 4500 CLOCK: 12

TICKET #2091
LEASE: "E" STECKEL
GEOLOGIST: ENGELBRECHT

INTERVAL TEST FROM: 2879 FT TO: 2889 FT TOTAL DEPTH: 2889 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 2874 FT SIZE: 6 5/8 IN PACKER DEPTH: 2879 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RAINS & WILLIAMSON
MUD TYPE: STARCH VISCOSITY: 41
WEIGHT: 9.9 WATER LOSS (CC): 17.8
CHLORIDES (P.P.M.): 58000

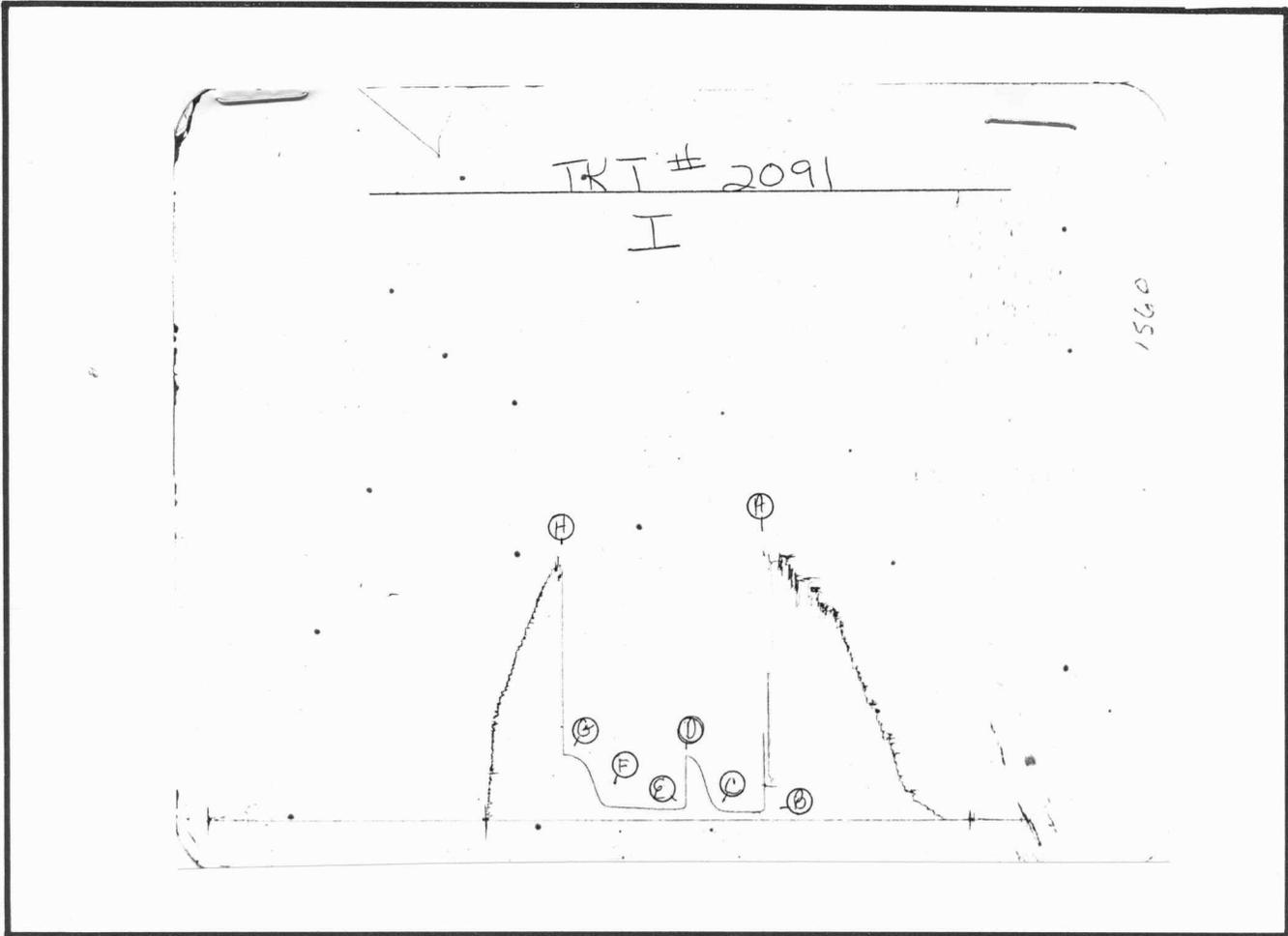
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 240 FT I.D.: 2.2 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 2618 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 21 FT TOOL SIZE: 5 1/2 IN
ANCHOR LENGTH: 10 FT SIZE: 5 1/2 IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 XH IN

BLOW: WEAK BLOW THROUGHOUT TEST.
1/2 TO 1 INCH BLOW.

RECOVERED: 60 FT OF: GAS IN PIPE
RECOVERED: 5 FT OF: HEAVY OIL & GAS CUT MUD
RECOVERED: FT OF: 25% OIL; 35% GAS; 3% WATER; 37% MUD
RECOVERED: 120 FT OF: MUDDY GASSY OIL
RECOVERED: FT OF: 50% OIL; 15% GAS; 35% MUD
RECOVERED: FT OF: GRAVITY 40
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 2:25 AM TIME STARTED OFF BOTTOM: 4:55 AM
WELL TEMPERATURE: 100 'F
INITIAL HYDROSTATIC PRESSURE: (A) 1547 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 51 PSI TO (C) 56 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 398 PSI
FINAL FLOW PERIOD MIN: 60 (E) 68 PSI TO (F) 83 PSI
FINAL CLOSED IN PERIOD MIN: 33 (G) 402 PSI
FINAL HYDROSTATIC PRESSURE (H) 1529 PSI



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1590	1547	PSI
(B) First Initial Flow Pressure	46	51	PSI
(C) First Final Flow Pressure	46	56	PSI
(D) Initial Closed-in Pressure	393	398	PSI
(E) Second Initial Flow Pressure	69	68	PSI
(F) Second Final Flow Pressure	81	83	PSI
(G) Final Closed-in Pressure	393	402	PSI
(H) Final Hydrostatic Mud	1590	1529	PSI

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 8/19/83
CUSTOMER: RAINS & WILLIAMSON
WELL: 1 TEST: 4
ELEVATION (KB): 1634 FORMATION: LANSING
SECTION: 17 TOWNSHIP: 12S
RANGE: 14W COUNTY: RUSSELL STATE: KANSAS
GAUGE SN #1560 RANGE: 4500 CLOCK: 12

TICKET #2092
LEASE: "E" STECKEL
GEOLOGIST: ENGELBRECHT

INTERVAL TEST FROM: 2945 FT TO: 2965 FT TOTAL DEPTH: 2965 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 2940 FT SIZE: 6 5/8 IN PACKER DEPTH: 2940 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RAINS & WILLIAMSON
MUD TYPE: STARCH VISCOSITY: 39
WEIGHT: 9.7 WATER LOSS (CC): 12.0
CHLORIDES (P.P.M.): 49000

JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO

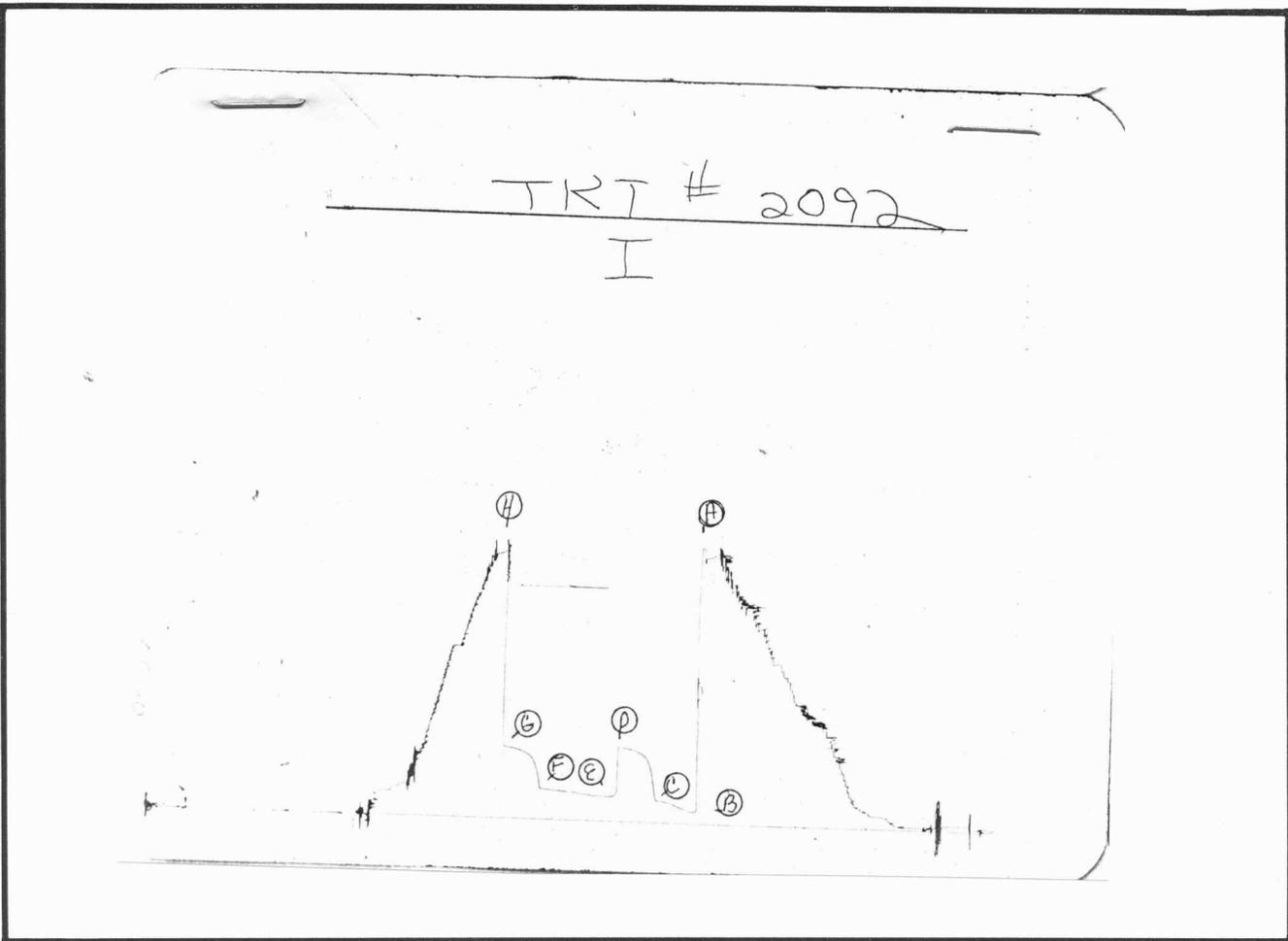
DRILL COLLAR LENGTH: 240 FT I.D.: 2.2 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 2684 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 21 FT TOOL SIZE: 5 1/2 IN
ANCHOR LENGTH: 20 FT SIZE: 5 1/2 IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 XH IN

BLOW: INITIAL FLOW PERIOD WEAK BLOW BUILDING
TO STRONG BLOW.
FINAL FLOW PERIOD STRONG BLOW
THROUGHOUT.

RECOVERED: 780 FT OF: GAS IN PIPE
RECOVERED: 60 FT OF: CLEAN OIL GRAVITY 40
RECOVERED: 420 FT OF: GASSY FROGGY OIL
RECOVERED: FT OF: 3% MUD; 35% GAS; 62% OIL
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 12:05 AM TIME STARTED OFF BOTTOM: 2:35 AM
WELL TEMPERATURE: 100 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1590 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 72 PSI TO (C) 133 PSI
INITIAL CLOSED IN PERIOD MIN: 30 (D) 453 PSI
FINAL FLOW PERIOD MIN: 60 (E) 148 PSI TO (F) 184 PSI
FINAL CLOSED IN PERIOD MIN: 27 (G) 437 PSI
FINAL HYDROSTATIC PRESSURE (H) 1581 PSI



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1646	1590	PSI
(B) First Initial Flow Pressure	69	72	PSI
(C) First Final Flow Pressure	127	133	PSI
(D) Initial Closed-in Pressure	451	453	PSI
(E) Second Initial Flow Pressure	150	148	PSI
(F) Second Final Flow Pressure	185	184	PSI
(G) Final Closed-in Pressure	439	437	PSI
(H) Final Hydrostatic Mud	1657	1581	PSI

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 8/20/83 TICKET #2093
CUSTOMER: RAINS & WILLIAMSON LEASE: "E" STECKEL
WELL: 1 TEST: 5 GEOLOGIST: ENGELBRECHT
ELEVATION (KB): 1634 FORMATION: LANSING
SECTION: 17 TOWNSHIP: 12S
RANGE: 14W COUNTY: RUSSELL STATE: KANSAS
GAUGE SN #1560 RANGE: 4500 CLOCK: 12

INTERVAL TEST FROM: 2977 FT TO: 2990 FT TOTAL DEPTH: 2990 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 2972 FT SIZE: 6 5/8 IN Packer DEPTH: 2977 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN Packer DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: RAINS & WILLIAMSON
MUD TYPE: STARCH VISCOSITY: 45
WEIGHT: 9.9 WATER LOSS (CC): 9.2
CHLORIDES (P.P.M.): 47000

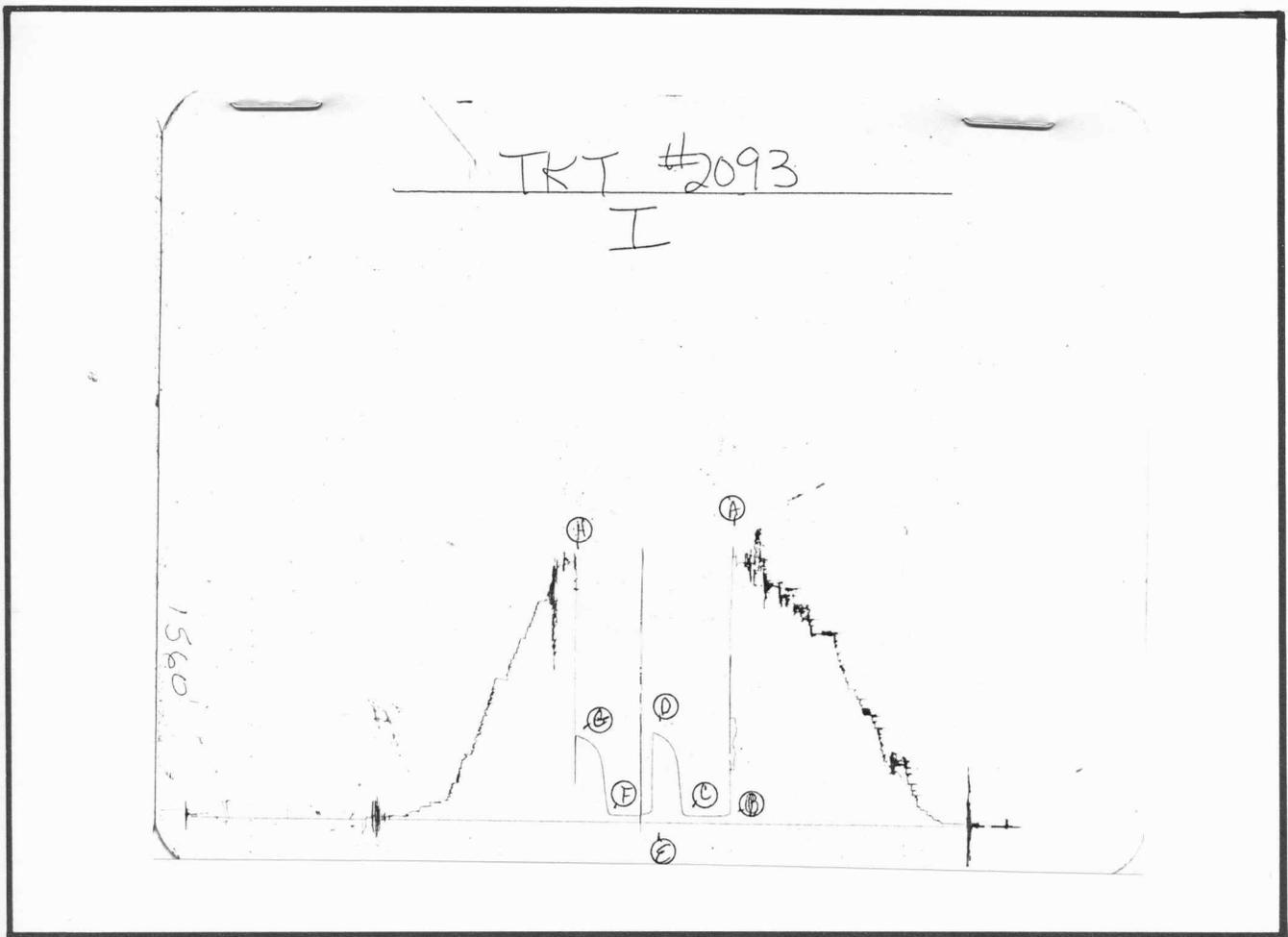
JARS - MAKE: SERIAL NUMBER:
DID WELL FLOW? NO REVERSED OUT? NO
DRILL COLLAR LENGTH: 240 FT I.D.: 2.2 IN
WEIGHT PIPE LENGTH: FT I.D.: IN
DRILL PIPE LENGTH: 2716 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 21 FT TOOL SIZE: 5 1/2 IN
ANCHOR LENGTH: 13 FT SIZE: 5 1/2 IN
SURFACE CHOKE SIZE: 3/4 IN BOTTOM CHOKE SIZE: 3/4 IN
MAIN HOLE SIZE: 7 7/8 IN TOOL JOINT SIZE: 4 1/2 XH IN

BLOW: INITIAL FLOW PERIOD VERY WEAK
BLOW - DIED IN 8 MINUTES.
FINAL FLOW PERIOD NO BLOW - FLUSHED
TOOL - NO HELP.

RECOVERED: 10 FT OF: OIL SPECKED MUD
RECOVERED: FT OF: CHLORIDES 46000 PPM
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 7:15 PM TIME STARTED OFF BOTTOM: 9:15 PM
WELL TEMPERATURE: 101 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1590 PSI
INITIAL FLOW PERIOD MIN: 35 (B) 46 PSI TO (C) 46 PSI
INITIAL CLOSED IN PERIOD MIN: 24 (D) 555 PSI
FINAL FLOW PERIOD MIN: 30 (E) 53 PSI TO (F) 44 PSI
FINAL CLOSED IN PERIOD MIN: 30 (G) 535 PSI
FINAL HYDROSTATIC PRESSURE (H) 1583 PSI



This is an actual photograph of recorder chart.

POINT	PRESSURE		
	Field Reading	Office Reading	
(A) Initial Hydrostatic Mud	1612	1590	PSI
(B) First Initial Flow Pressure	34	46	PSI
(C) First Final Flow Pressure	34	46	PSI
(D) Initial Closed-in Pressure	542	555	PSI
(E) Second Initial Flow Pressure	34	53	PSI
(F) Second Final Flow Pressure	34	44	PSI
(G) Final Closed-in Pressure	520	535	PSI
(H) Final Hydrostatic Mud	1612	1583	PSI