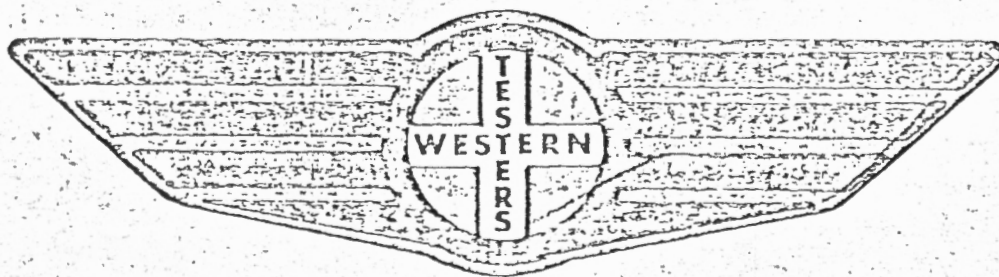


FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 9/9/84
CUSTOMER: GRUSS PETROLEUM MANAGEMENT
WELL: 1 TEST: 1
ELEVATION (KB): 0 FORMATION:
SECTION: 5 TOWNSHIP: 11S
RANGE: 32W COUNTY: LOGAN STATE: KANSAS
GAUGE SN #11018 RANGE: 4425 CLOCK: 12

INTERVAL TEST FROM: 4080 FT TO: 4110 FT TOTAL DEPTH: 4110 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 4075 FT SIZE: 6 5/8 IN Packer DEPTH: 4080 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN Packer DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: ABERCROMBIE DRLG
MUD TYPE: CHEMICAL VISCOSITY: 46
WEIGHT: 9.2 WATER LOSS (CC): 12.8
CHLORIDES (P.P.M.): 6000
JARS - MAKE: WTC SERIAL NUMBER: 402
DID WELL FLOW? REVERSED OUT?

DRILL COLLAR LENGTH: FT I.D.: IN
WEIGHT PIPE LENGTH: 669 FT I.D.: 2.7 IN
DRILL PIPE LENGTH: 3384 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 27 FT TOOL SIZE: 4 1/2 IN
ANCHOR LENGTH: 30 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 GOOD BLOW.
BOTTOM OF BUCKET IN 11 MINUTES.
FINAL FLOW PERIOD GOOD BLOW.
BOTTOM OF BUCKET IN 13 MINUTES.

RECOVERED: 590 FT OF: MUDDY WATER. 10% MUD.
RECOVERED: 190 FT OF: CLEAN WATER.
RECOVERED: 5 FT OF: MUD.
RECOVERED: FT OF: RESISTIVITY .3 AT 80 DEGREES.
RECOVERED: FT OF: CHLORIDES 37000 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 4:42 PM TIME STARTED OFF BOTTOM: 7:42 PM
WELL TEMPERATURE: 118 °F
INITIAL HYDROSTATIC PRESSURE: (A) 1964 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 47 PSI TO (C) 171 PSI
INITIAL CLOSED IN PERIOD MIN: 60 (D) 1190 PSI
FINAL FLOW PERIOD MIN: 30 (E) 207 PSI TO (F) 318 PSI
FINAL CLOSED IN PERIOD MIN: 60 (G) 1176 PSI
FINAL HYDROSTATIC PRESSURE (H) 1930 PSI

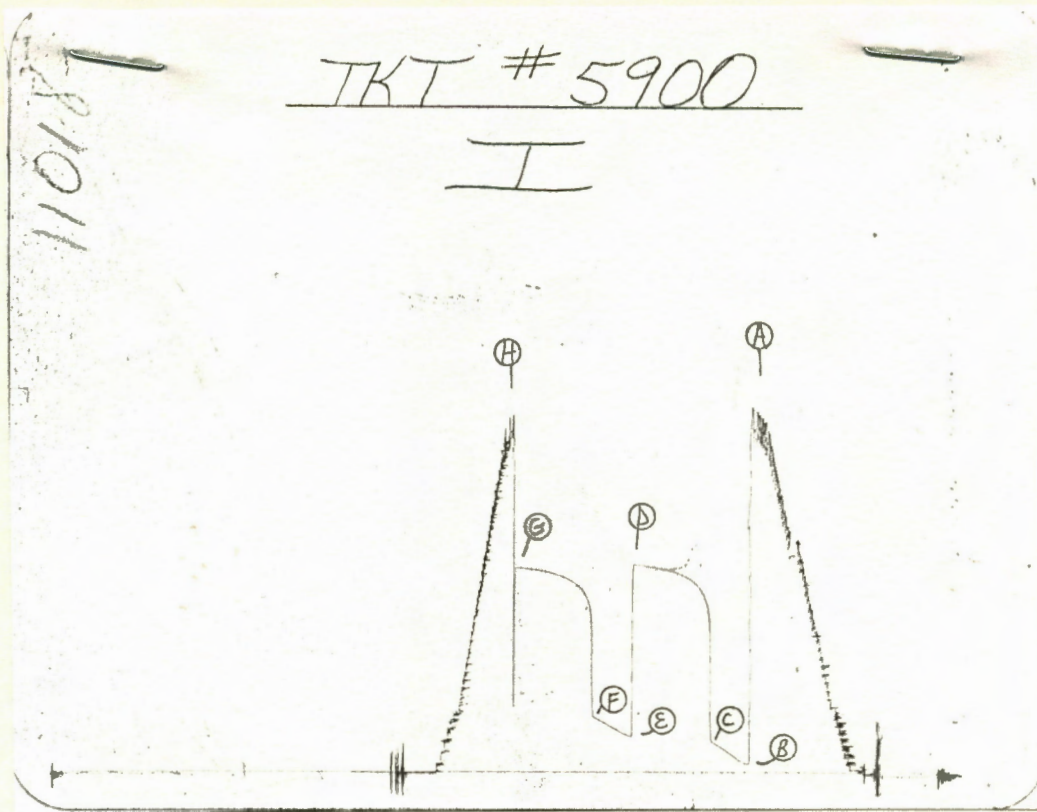
WESTERN TESTING CO. INC.
PRESSURE DATA

DATE: 9/9/84
CUSTOMER: GRUSS PETROLEUM MANAGEMENT
WELL: 1 TEST: 1
ELEVATION (KB): 0 FORMATION:
SECTION: 5 TOWNSHIP: 11S
RANGE: 32W COUNTY: LOGAN STATE: KANSAS
GAUGE SN #11018 RANGE: 4425 CLOCK: 12

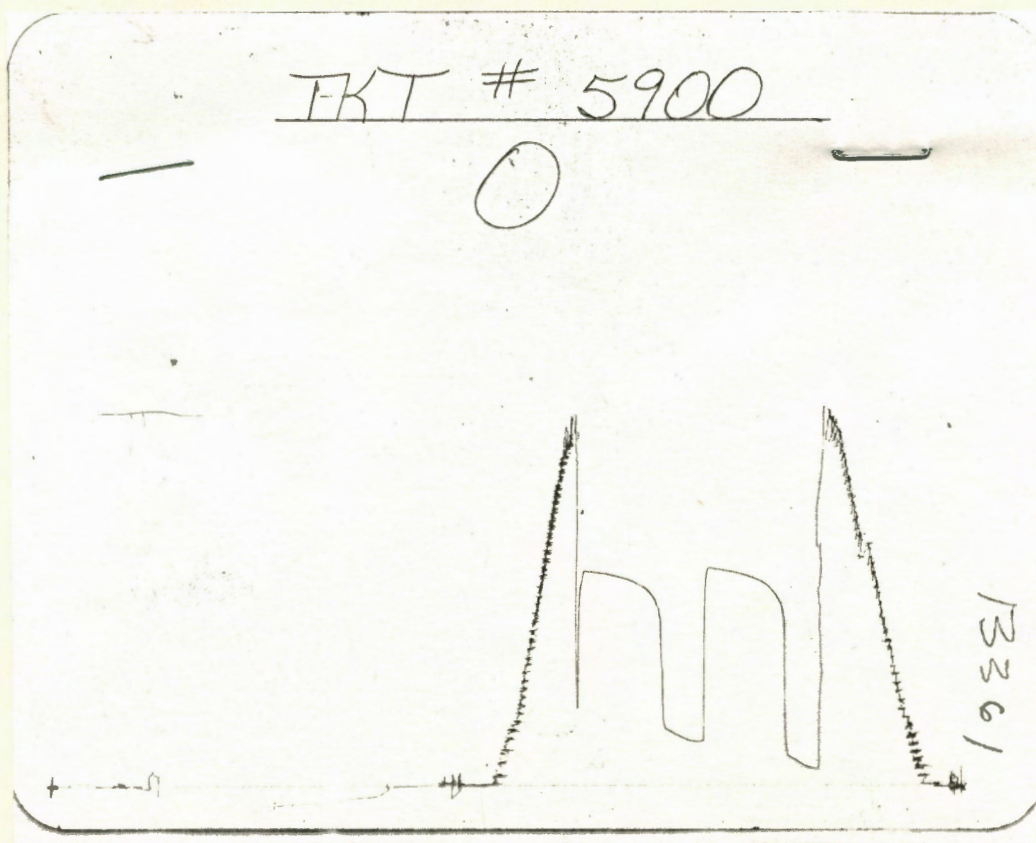
(A) INITIAL HYDROSTATIC PRESSURE: 1964 PSI
(B) FIRST INITIAL FLOW PRESSURE: 47 PSI
(C) FIRST FINAL FLOW PRESSURE: 171 PSI
(D) INITIAL CLOSED-IN PRESSURE: 1190 PSI
(E) SECOND INITIAL FLOW PRESSURE: 207 PSI
(F) SECOND FINAL FLOW PRESSURE: 318 PSI
(G) FINAL CLOSED-IN PRESSURE: 1176 PSI
(H) FINAL HYDROSTATIC PRESSURE: 1930 PSI
WELL TEMPERATURE: 118 °F
OPEN TOOL: 4:42 PM

	TIME - GIVEN	TIME - ACTUAL
FIRST FLOW PRESSURE:	30 MIN	30 MIN
INITIAL CLOSED-IN PRESSURE:	60 MIN	60 MIN
SECOND FLOW PRESSURE:	30 MIN	30 MIN
FINAL CLOSED-IN PRESSURE:	60 MIN	60 MIN

PRESSURE BREAKDOWN								
PT	FIRST FLOW		INITIAL SHUT-IN		SECOND FLOW		FINAL SHUT-IN	
	MIN	PRESSURE	MIN	PRESSURE	MIN	PRESSURE	MIN	PRESSURE
1	0	47	0	171	0	207	0	318
2	5	54	3	912	5	216	3	952
3	10	79	6	1003	10	237	6	1009
4	15	110	9	1045	15	260	9	1046
5	20	138	12	1073	20	282	12	1070
6	25	162	15	1094	25	304	15	1090
7	30	171	18	1109	30	318	18	1104
8			21	1123			21	1114
9			24	1134			24	1123
10			27	1143			27	1132
11			30	1150			30	1140
12			33	1156			33	1145
13			36	1162			36	1150
14			39	1167			39	1155
15			42	1172			42	1159
16			45	1177			45	1163
17			48	1180			48	1167
18			51	1183			51	1171
19			54	1186			54	1173
20			57	1188			57	1175
21			60	1190			60	1176
22								
23								
24								
25								
26								
27								
28								
29								
30								

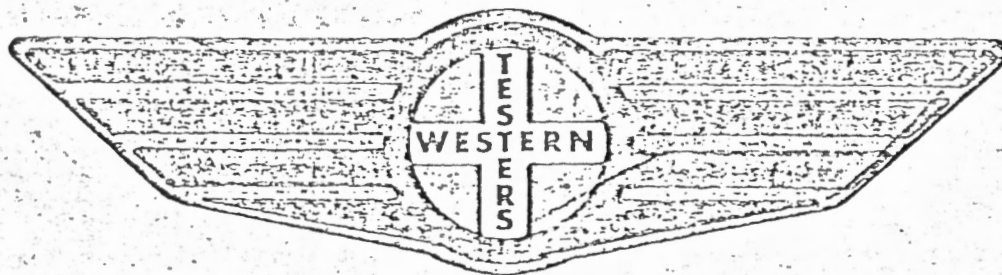


Inside Recorder



Outside Recorder

FORMATION TEST REPORT



Home Office:

P.O. Box 1599

Wichita, Kansas 67201

Phone (316) 262-5861

Company GRUSS PETROLEUM MANAGEMENT INC Lease and Well No. #1 HEYEN Sec. 5 Twp. 11S Rge. 32W Test No. 2 Date 9/10/84

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 9/10/84
CUSTOMER: GRUSS PETROLEUM MANAGEMENT
WELL: 1 TEST: 2
ELEVATION (KB): 0 FORMATION:
SECTION: 5 TOWNSHIP: 11S
RANGE: 32W COUNTY: LOGAN STATE: KANSAS
GAUGE SN #11018 RANGE: 4425 CLOCK: 12

INTERVAL TEST FROM: 4130 FT TO: 4165 FT TOTAL DEPTH: 4165 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 4125 FT SIZE: 6 5/8 IN PACKER DEPTH: 4130 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: ABERCROMBIE DRLG
MUD TYPE: CHEMICAL VISCOSITY: 44
WEIGHT: 9.1 WATER LOSS (CC): 12.8
CHLORIDES (P.P.M.): 6000
JARS - MAKE: WTC SERIAL NUMBER: 402
DID WELL FLOW? REVERSED OUT?
DRILL COLLAR LENGTH: FT I.D.: IN
WEIGHT PIPE LENGTH: 669 FT I.D.: 2.7 IN
DRILL PIPE LENGTH: 3434 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 27 FT TOOL SIZE: 4 1/2 IN
ANCHOR LENGTH: 35 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.
DIED IN 13 MINUTES.
FINAL FLOW PERIOD NO BLOW.

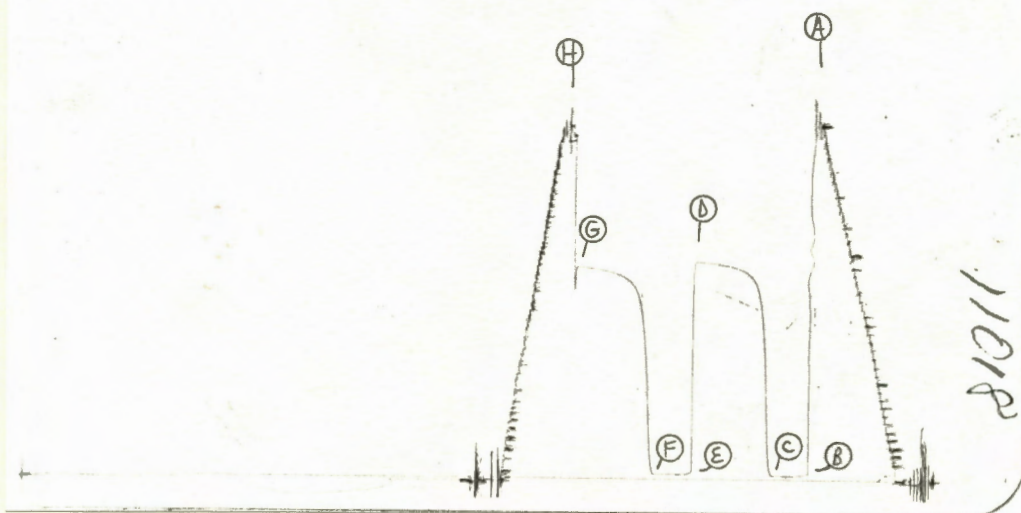
RECOVERED: 15 FT OF: WATERY MUD. CHLORIDES 9000 PPM.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 6:05 AM TIME STARTED OFF BOTTOM: 9:05 AM
WELL TEMPERATURE: 119 °F
INITIAL HYDROSTATIC PRESSURE: (A) 2008 PSI
INITIAL FLOW PERIOD MIN: 30 (B) 23 PSI TO (C) 23 PSI
INITIAL CLOSED IN PERIOD MIN: 57 (D) 1236 PSI
FINAL FLOW PERIOD MIN: 30 (E) 30 PSI TO (F) 30 PSI
FINAL CLOSED IN PERIOD MIN: 57 (G) 1203 PSI
FINAL HYDROSTATIC PRESSURE (H) 2000 PSI

TKT # 3751

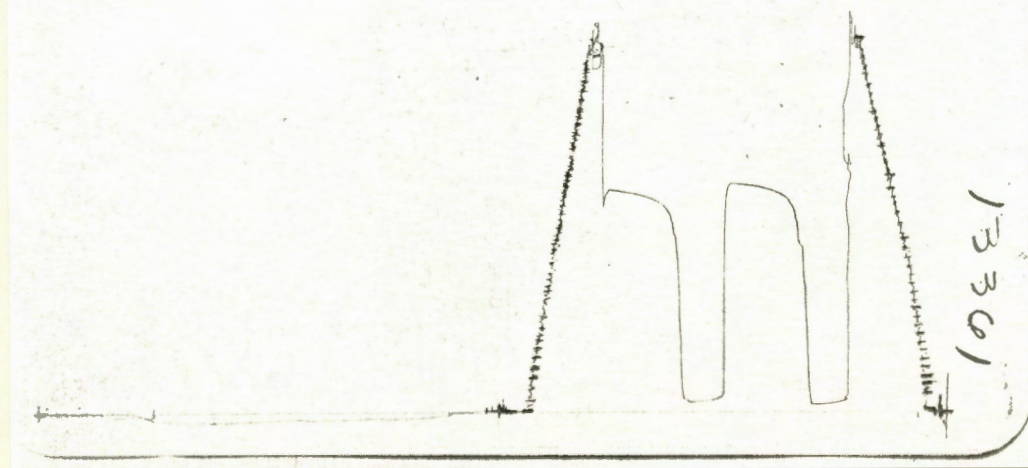
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Inside Recorder

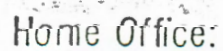
TKT # 3751

O



Outside Recorder

CRUSS PETROLEUM MANAGEMENT INC. 711 HELEN
Lease and Well No. _____
_____ Sec. 3 _____ Twp. 11S _____ Rge. 34W _____
_____ Test No. 3 _____ Date 7/14/00 _____
Company _____



P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING CO. INC.
SUBSURFACE PRESSURE SURVEY

DATE: 9/10/84

TICKET #3752

CUSTOMER: GRUSS PETROLEUM MANAGEMENT

LEASE: HEYEN

WELL: 1

TEST: 3

GEOLOGIST: RHOADES

ELEVATION (KB): 0

FORMATION:

SECTION: 5

TOWNSHIP: 11S

RANGE: 32W

COUNTY: LOGAN

STATE: KANSAS

GAUGE SN #11018

RANGE: 4425

CLOCK: 12

INTERVAL TEST FROM: 4190 FT TO: 4235 FT TOTAL DEPTH: 4235 FT

DEPTH OF SELECTIVE ZONE: FT

PACKER DEPTH: 4185 FT SIZE: 6 5/8 IN PAKER DEPTH: 4190 FT SIZE: 6 5/8 IN

PACKER DEPTH: FT SIZE: IN PAKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: ABERCROMBIE DRLG

MUD TYPE: CHEMICAL

VISCOSITY: 43

WEIGHT: 9.2

WATER LOSS (CC): 12.0

CHLORIDES (P.P.M.): 7500

JARS - MAKE: WTC

SERIAL NUMBER: 402

DID WELL FLOW?

REVERSED OUT?

DRILL COLLAR LENGTH: FT I.D.: IN

WEIGHT PIPE LENGTH: 637 FT I.D.: 2.7 IN

DRILL PIPE LENGTH: 3526 FT I.D.: 3.8 IN

TEST TOOL LENGTH: 27 FT TOOL SIZE: 4 1/2 IN

ANCHOR LENGTH: 45 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 TO

.1 1/2" IN WATER.

FINAL FLOW PERIOD WEAK BLOW TO 3"

IN WATER.

RECOVERED: 10 FT OF: OIL CUT MUD. 70% MUD; 30% OIL.

RECOVERED: 90 FT OF: GAS ABOVE FLUID.

RECOVERED: FT OF:

RECOVERED: FT OF:

RECOVERED: FT OF:

RECOVERED: FT OF:

RECOVERED: FT OF:

RECOVERED: FT OF:

RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 9:30 PM

TIME STARTED OFF BOTTOM: 2:00 AM

WELL TEMPERATURE: 120 °F

INITIAL HYDROSTATIC PRESSURE:

(A) 2095 PSI

INITIAL FLOW PERIOD MIN: 25

(B) 36 PSI TO (C) 36 PSI

INITIAL CLOSED IN PERIOD MIN: 60

(D) 1282 PSI

FINAL FLOW PERIOD MIN: 60

(E) 48 PSI TO (F) 57 PSI

FINAL CLOSED IN PERIOD MIN: 114

(G) 1274 PSI

FINAL HYDROSTATIC PRESSURE

(H) 2021 PSI

WESTERN TESTING CO. INC.
PRESSURE DATA

TICKET #3752

LEASE: HEYEN

TEST: 3

GEOLOGIST: RHOADES

FORMATION:

TOWNSHIP: 11S

COUNTY: LOGAN

STATE: KANSAS

RANGE: 4425

CLOCK: 12

(B) FIRST INITIAL FLOW PRESSURE: 36 PSI

(C) FIRST FINAL FLOW PRESSURE: 36 PSI

(D) INITIAL CLOSED-IN PRESSURE: 1282 PSI

(E) SECOND INITIAL FLOW PRESSURE: 48 PSI

(F) SECOND FINAL FLOW PRESSURE: 57 PSI

(G) FINAL CLOSED-IN PRESSURE: 1274 PSI

(H) FINAL HYDROSTATIC PRESSURE: 2021 PSI

WELL TEMPERATURE: 120 °F

OPEN TOOL: 9:30 PM

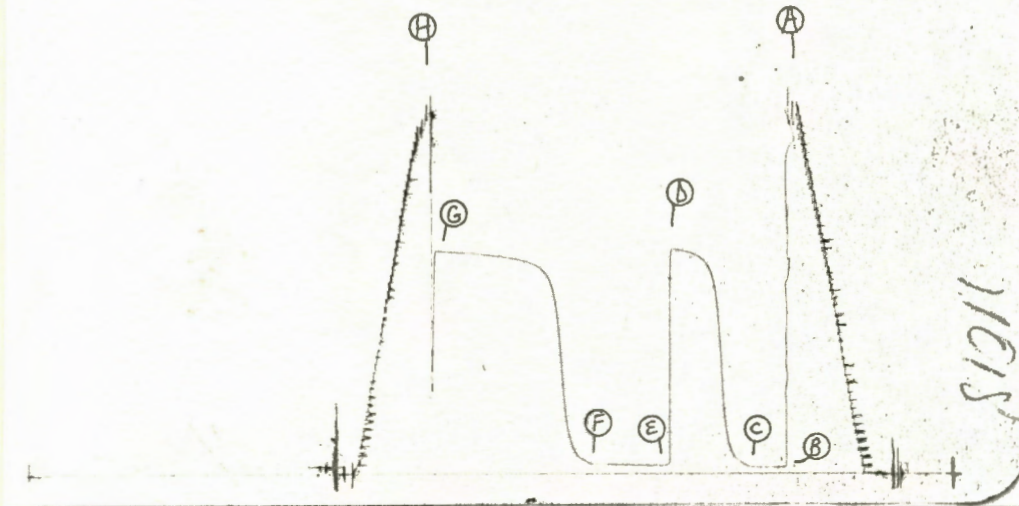
	TIME - GIVEN	TIME - ACTUAL
FIRST FLOW PRESSURE:	30 MIN	25 MIN
INITIAL CLOSED-IN PRESSURE:	60 MIN	60 MIN
SECOND FLOW PRESSURE:	60 MIN	60 MIN
FINAL CLOSED-IN PRESSURE:	120 MIN	114 MIN

PRESSURE BREAKDOWN

[illegible]

TKT # 3752

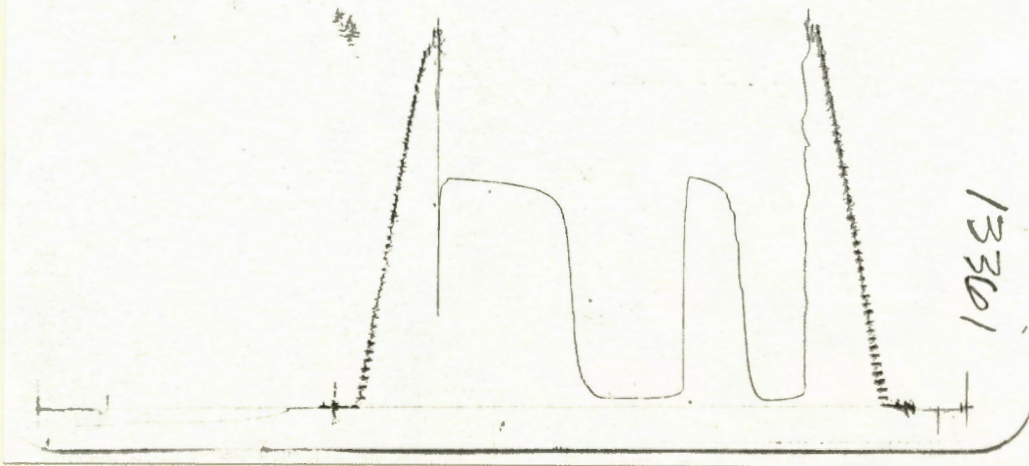
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Inside Recorder

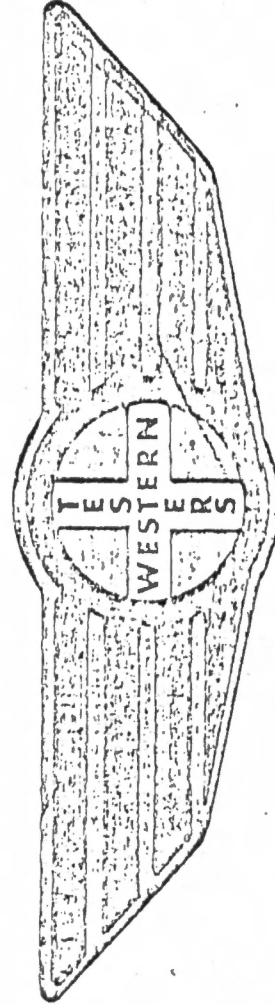
TKT # 3752

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Outside Recorder

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING COMPANY INC.
SUBSURFACE PRESSURE SURVEY

DATE: 9/11/84
CUSTOMER: GRUSS PETROLEUM MANAGEMENT INC
WELL: #1 TEST: 4
ELEVATION (KB): 0 FORMATION:
SECTION: 5 TOWNSHIP: 11S
RANGE: 32W COUNTY: LOGAN STATE: KANSAS
GAUGE SN #11018 RANGE: 4425 CLOCK: 12

INTERVAL TEST FROM: 4230 FT TO: 4285 FT TOTAL DEPTH: 4285 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 4225 FT SIZE: 6 5/8 IN PACKER DEPTH: 4230 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: ABERCROMBIE
MUD TYPE: CHEM VISCOSITY: 44
WEIGHT: 9.4 WATER LOSS (CC): 11.2
CHLORIDES (P.P.M.): 7000
JARS - MAKE: W.T.C. SERIAL NUMBER: 402
DID WELL FLOW? REVERSED OUT?
DRILL COLLAR LENGTH: FT I.D.: IN
WEIGHT PIPE LENGTH: 637 FT I.D.: 2.7 IN
DRILL PIPE LENGTH: 3566 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 27 FT TOOL SIZE: 4 3/4 O.D. IN
ANCHOR LENGTH: 55 FT SIZE: 5 1/2 O.D. 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 GOOD BLOW TO BOTTOM
OF BUCKET IN 30 MINUTES. FINAL FLOW
PERIOD WEAK BLOW TO 7" IN WATER.

RECOVERED: 180 FT OF: GAS ABOVE FLUID.
RECOVERED: 180 FT OF: HEAVY GASSY OIL CUT MUD.
RECOVERED: FT OF: 45% MUD: 30% OIL: 5% WTR: 20% GAS.
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:
RECOVERED: FT OF:

REMARKS:

TIME SET PACKER(S): 1:55 P.M. TIME STARTED OFF BOTTOM: 6:25 P.M.
WELL TEMPERATURE: 121 °F
INITIAL HYDROSTATIC PRESSURE: (A) 2087 PSI
INITIAL FLOW PERIOD MIN: 25 (B) 44 PSI TO (C) 71 PSI
INITIAL CLOSED IN PERIOD MIN: 57 (D) 884 PSI
FINAL FLOW PERIOD MIN: 60 (E) 88 PSI TO (F) 108 PSI
FINAL CLOSED IN PERIOD MIN: 117 (G) 868 PSI
FINAL HYDROSTATIC PRESSURE (H) 2087 PSI

WESTERN TESTING COMPANY INC.
PRESSURE DATA

DATE: 9/11/84	TICKET #3753
CUSTOMER: GRUSS PETROLEUM MANAGEMENT INC	LEASE: HEYEN
WELL: #1	GEOLOGIST: RHODES
TEST: 4	
ELEVATION (KB): 0	FORMATION:
SECTION: 5	TOWNSHIP: 11S
RANGE: 32W	COUNTY: LOGAN
STATE: KANSAS	
GAUGE SN #11018	RANGE: 4425
CLOCK: 12	

(A)	INITIAL HYDROSTATIC PRESSURE:	2087	PSI
(B)	FIRST INITIAL FLOW PRESSURE:	44	PSI
(C)	FIRST FINAL FLOW PRESSURE:	71	PSI
(D)	INITIAL CLOSED-IN PRESSURE:	884	PSI
(E)	SECOND INITIAL FLOW PRESSURE:	88	PSI
(F)	SECOND FINAL FLOW PRESSURE:	108	PSI
(G)	FINAL CLOSED-IN PRESSURE:	868	PSI
(H)	FINAL HYDROSTATIC PRESSURE:	2087	PSI
WELL TEMPERATURE:		121	'F
OPEN TOOL: 1:55 P.M.			

	TIME - GIVEN	TIME - ACTUAL
FIRST FLOW PRESSURE:	30 MIN	25 MIN
INITIAL CLOSED-IN PRESSURE:	60 MIN	57 MIN
SECOND FLOW PRESSURE:	60 MIN	60 MIN
FINAL CLOSED-IN PRESSURE:	120 MIN	117 MIN

PRESSURE BREAKDOWN

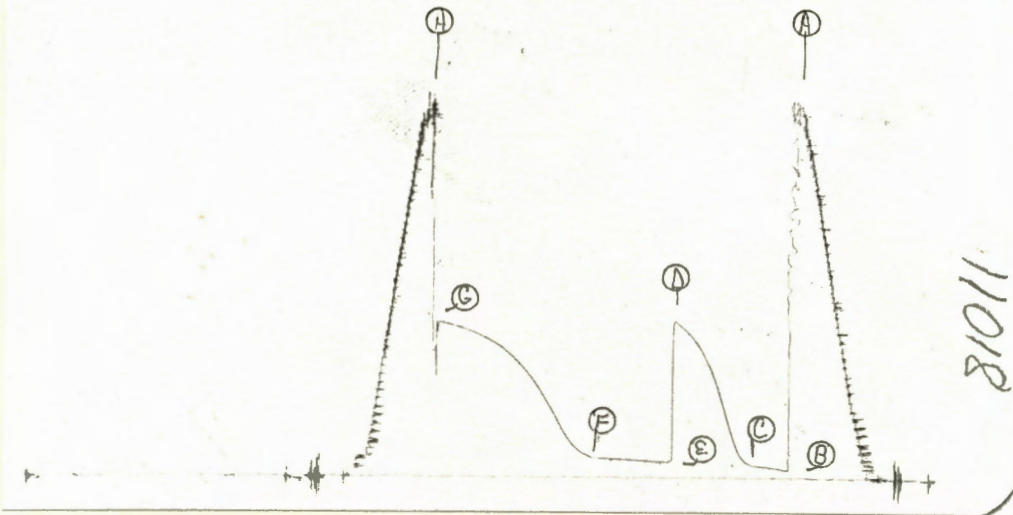
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PRESSURE BREAKDOWN - CONT. TICKET #3753

PT	FIRST FLOW		INITIAL SHUT-IN		SECOND FLOW		FINAL SHUT-IN	
	MIN	PRESSURE	MIN	PRESSURE	MIN	PRESSURE	MIN	PRESSURE
31							90	827
32							93	835
33							96	843
34							99	851
35							102	859
36							105	865
37							108	866
38							111	867
39							114	868
40							117	868
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TKT #3753

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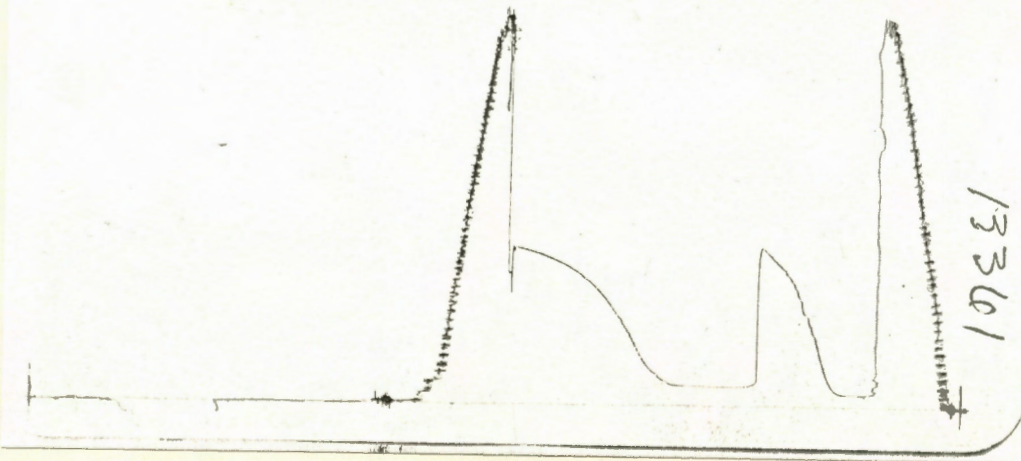


11018

Inside Recorder

TKT #3753

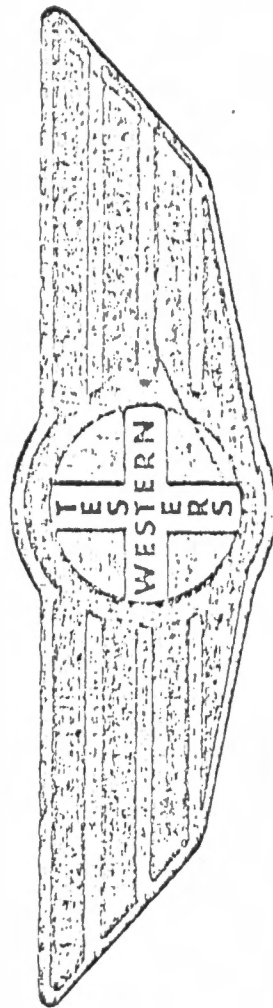
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13361

Outside Recorder

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone (316) 262-5861

WESTERN TESTING COMPANY INC.
SUBSURFACE PRESSURE SURVEY

DATE: 9/12/84
CUSTOMER: GRUSS PETROLEUM MANAGEMENT INC
WELL: #1 TEST: 5
ELEVATION (KB): 0 FORMATION:
SECTION: 5 TOWNSHIP: 11S
RANGE: 32W COUNTY: LOGAN STATE: KANSAS
GAUGE SN #11018 RANGE: 4425 CLOCK: 12

INTERVAL TEST FROM: 4310 FT TO: 4350 FT TOTAL DEPTH: 4350 FT
DEPTH OF SELECTIVE ZONE: FT
PACKER DEPTH: 4305 FT SIZE: 6 5/8 IN PACKER DEPTH: 4310 FT SIZE: 6 5/8 IN
PACKER DEPTH: FT SIZE: IN PACKER DEPTH: FT SIZE: IN

DRILLING CONTRACTOR: ABERCROMBIE
MUD TYPE: CHEM VISCOSITY: 40
WEIGHT: 9.4 WATER LOSS (CC): 12
CHLORIDES (P.P.M.): 8000
JARS - MAKE: W.T.C. SERIAL NUMBER: 402
DID WELL FLOW? REVERSED OUT?
DRILL COLLAR LENGTH: FT I.D.: IN
WEIGHT PIPE LENGTH: 669 FT I.D.: 2.7 IN
DRILL PIPE LENGTH: 3614 FT I.D.: 3.8 IN
TEST TOOL LENGTH: 27 FT TOOL SIZE: 4 3/4 O.D. IN
ANCHOR LENGTH: 40 FT SIZE: 5 1/2 O.D. 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 GOOD BLOW TO BOTTOM
OF BUCKET IN 22 MINUTES. FINAL FLOW
PERIOD STRONG BLOW TO BOTTOM OF
BUCKET IN 7 MINUTES.

RECOVERED: 730	FT	OF: GAS ABOVE FLUID.
RECOVERED: 10	FT	OF: CLEAN GASSY OIL. TOP 100% OIL.
RECOVERED:	FT	OF: MIDDLE: 30% GAS: 40% OIL: 30% MUD.
RECOVERED:	FT	OF: BOTTOM: 50% GAS: 30% OIL: 20% MUD.
RECOVERED: 85	FT	OF: GASSY OIL CUT MUD.
RECOVERED: 90	FT	OF: FROTHY HEAVY OIL CUT MUD.
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:
RECOVERED:	FT	OF:

REMARKS: 34 GRAVITY

TIME SET PACKER(S): 7:45 A.M.	TIME STARTED OFF BOTTOM: 12:15 A.M.
WELL TEMPERATURE: 122 °F	
INITIAL HYDROSTATIC PRESSURE:	(A) 2211 PSI
INITIAL FLOW PERIOD MIN: 25	(B) 59 PSI TO (C) 72 PSI
INITIAL CLOSED IN PERIOD MIN: 57	(D) 1301 PSI
FINAL FLOW PERIOD MIN: 60	(E) 87 PSI TO (F) 115 PSI
FINAL CLOSED IN PERIOD MIN: 117	(G) 1295 PSI
FINAL HYDROSTATIC PRESSURE	(H) 2164 PSI

WESTERN TESTING COMPANY INC.
PRESSURE DATA

TICKET #3754

LEASE: HEYEN

TEST: 5

GEOLOGIST: RHODES

FORMATION:

TOWNSHIP: 11S

COUNTY: LOGAN

STATE: KANSAS

RANGE: 4425

CLOCK: 12

(B) FIRST INITIAL FLOW PRESSURE: 59 PSI

(D) INITIAL CLOSED-IN PRESSURE: 1301 PSI

(F) SECOND FINAL FLOW PRESSURE: 115 PSI

(G) FINAL CLOSED-IN PRESSURE: 1295 PSI

(H) FINAL HYDROSTATIC PRESSURE: 2164 PSI

WELL TEMPERATURE: 122 'F

OPEN TOOL: 7:45 A.M.

	TIME - GIVEN	TIME - ACTUAL
FIRST FLOW PRESSURE:	30 MIN	25 MIN
INITIAL CLOSED-IN PRESSURE:	60 MIN	57 MIN
SECOND FLOW PRESSURE:	60 MIN	60 MIN
FINAL CLOSED-IN PRESSURE:	120 MIN	117 MIN

PRESSURE BREAKDOWN

[illegible]

Liquid Production

B.T. Gauge Numbers			11018	Ticket Number	3754
Initial Hydrostatic			PRESSURE 2211	Elevation	----- ft.
Final Hydrostatic			2164	Indicated Production	1st Flow .411 bbls. day
1st Flow	Initial	Time -----	59	Total Flow	.900 bbls. day
	Final	25	72	Drill Collar Length	669 ft.
Initial Closed In Pressure		57	1301	Drill Collar I.D.	2.7 in.
2nd Flow	Initial	-----	87	Drill Pipe Factor	.0142 bbls. ft.
	Final	60	115	Hole Size	7.875 in.
Final Closed In Pressure		117	1295	Footage Tested	40 ft.
Extrapolated Static Pressure	Initial	1354 - 1011		Mud Weight	9.4 lbs. gal.
	Final	1331 - 1202		Viscosity, Oil or Water	cp
Slope psi/cycle	Initial	342.878		Oil API Gravity	---
	Final	112.067		Water Specific Gravity	

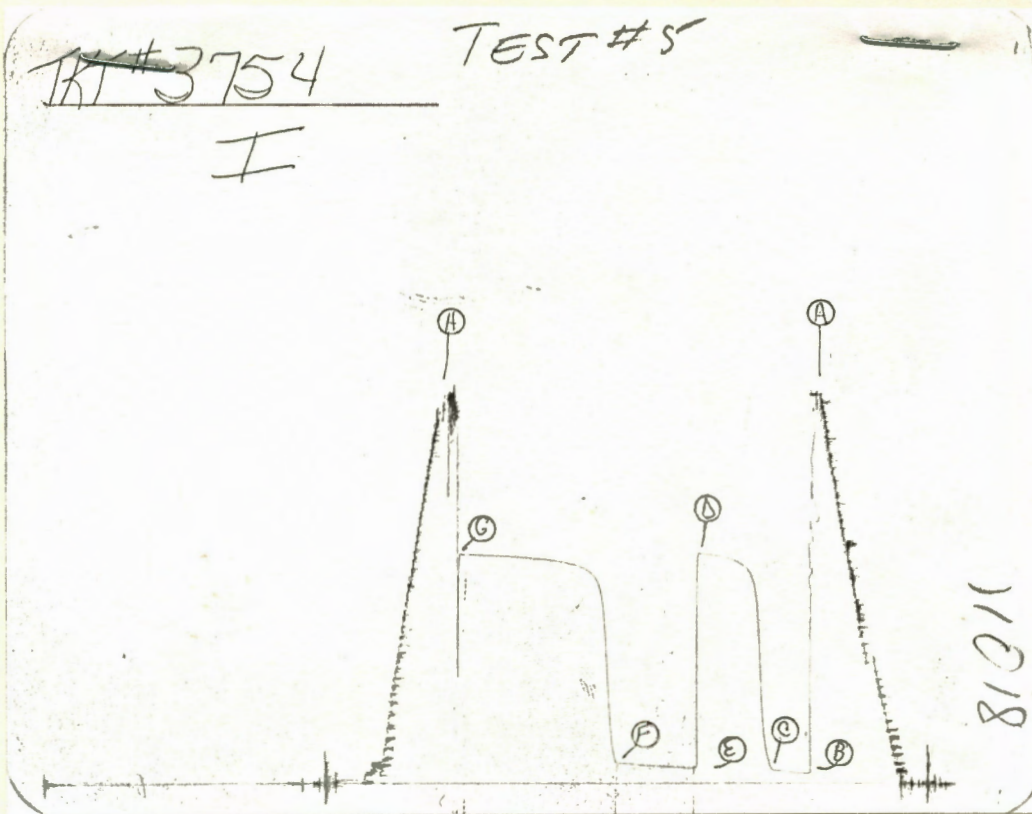
Remarks: _____

SUMMARY

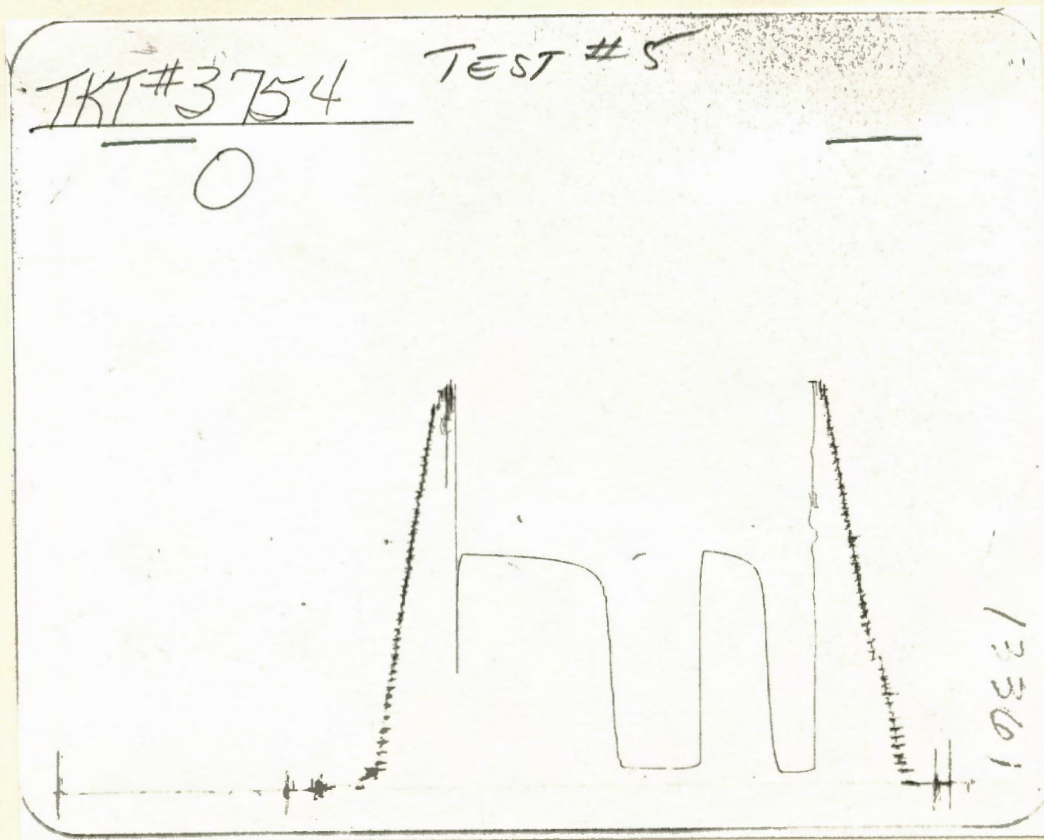
SUMMARY		Gauge No. Depth			
Product	Equation	INITIAL	FINAL	Units	
Production	$Q = \frac{1440 R}{t}$	23.677	21.602	bbls./ day	
Transmissability	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	11.224	27.229	md. ft./ cp	
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	44.894	108.917	md. ft.	
Average Effective	$K = \frac{Kh}{h}$	14.966	36.305	md.	
Permeability	$K_i = \frac{Kh}{h_i}$	-----	-----	md.	
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	.691	1.725	—	
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	DR less than one	37.265	bbls./ day	
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	19.343	46.672	ft.	
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$	-----	-----	ft.	
Potentiometric Surface	* $Pot. = EI - CD + 2.319 P_s$	-----	-----	ft.	

NOTICE: These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and elevations based thereon, Western Testing Co., Inc. is merely expressing its opinion. You agree that Western Testing Co., Inc. makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Western Testing Co., Inc. shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS



Inside Recorder



Outside Recorder