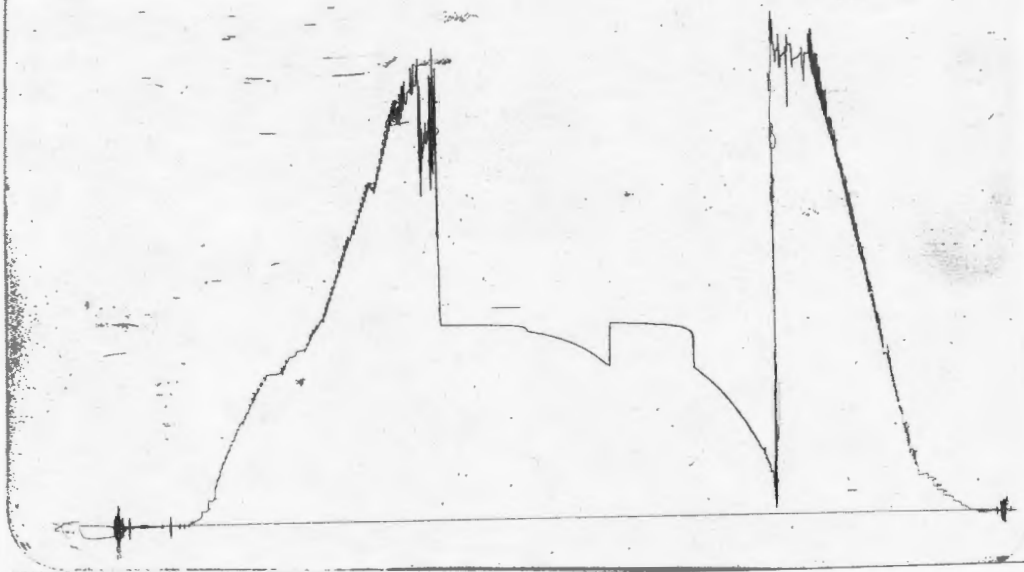


KT 19956

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DST#4

10242



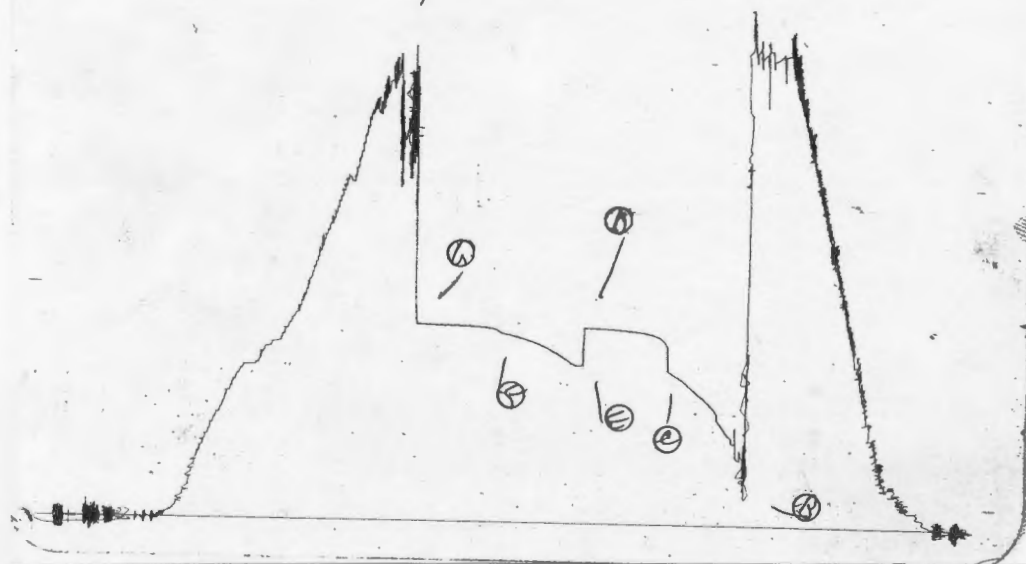
KT 19956

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DST#4

13266

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FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

DST REPORT

GENERAL INFORMATION

DATE	: 9/28/93	TICKET	: 19926		
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: K U ENDOWMENT		
WELL	: B #1	TEST: 4	GEOLOGIST:		
ELEVATION:		FORMATION:			
SECTION	: 11	TOWNSHIP	: 31S		
RANGE	: 43W	COUNTY: MORTON	STATE	: KS	
GAUGE SN#:	13266	RANGE	: 4000	CLOCK	: 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	5150.00 ft	TO:	5285.00 ft	TVD:	5285.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	5160.0 ft		5163.0 ft		
TEMPERATURE:	136.0				
DRILL COLLAR LENGTH:	393.0 ft	I.D.:		2.250 in	
WEIGHT PIPE LENGTH:	0.0 ft	I.D.:		0.000 in	
DRILL PIPE LENGTH:	4729.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH:	28.0 ft	TOOL SIZE:		5.500 in	
ANCHOR LENGTH:	135.0 ft	ANCHOR SIZE:		5.500 in	
SURFACE CHOKE SIZE:	0.750 in	BOTTOM CHOKE SIZE:		0.750 in	
MAIN HOLE SIZE:	7.875 in	TOOL JOINT SIZE:		4.5XH	
PACKER DEPTH:	5145.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	5150.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON.:	ZENITH #7	VISCOSITY:	60.00 cp
MUD TYPE:	CHEMICAL	WATER LOSS:	8.800 cc
WEIGHT:	8.400 ppg	SERIAL NUMBER:	415
CHLORIDES:	1000 ppm	REVERSED OUT?:	NO
JARS-MAKE:	WTC		
DID WELL FLOW?:	NO		

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW - BOTTOM OF BUCKET
IN 2 MINUTES. FINAL FLOW PERIOD FAIR BLOW -
BOTTOM OF BUCKET IN 5 MINUTES.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

SLID PIPE APPROX 25 FT TO GET TO BOTTOM.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
120.0	0.0	0.0	0.0	100.0	MUD
360.0	0.0	0.0	60.0	40.0	MUD CUT WATER
1680.0	0.0	0.0	100.0	0.0	WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 1600 PPM

RATE INFORMATION

OIL VOLUME:	0.0000	STB		
GAS VOLUME:	0.0000	SCF		
MUD VOLUME:	3.7030	STB		
WATER VOLUME:	23.0142	STB		
TOTAL FLUID :	26.7171	STB		
			TOTAL FLOW TIME:	120.0000 min.
			AVERAGE OIL RATE:	0.0000 STB/D
			AVERAGE WATER RATE:	300.4077 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2458.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	134.00	797.00
INITIAL SHUT-IN	60.00		1016.00
FINAL FLOW	60.00	828.00	982.00
FINAL SHUT-IN	60.00		1125.00

FINAL HYDROSTATIC PRESSURE: 2456.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2474.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	154.00	808.00
INITIAL SHUT-IN	60.00		1029.00
FINAL FLOW	60.00	833.00	994.00
FINAL SHUT-IN	63.00		1035.00

FINAL HYDROSTATIC PRESSURE: 2333.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 9/28/93	TICKET	: 19926
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: K U ENDOWMENT
WELL	: B #1	TEST: 4	
ELEVATION:		GEOLOGIST:	
SECTION	: 11	FORMATION:	
RANGE	: 43W	TOWNSHIP	: 31S
GAUGE SN#:	13266	STATE	: KS
		CLOCK	: 12
	COUNTY: MORTON		
	RANGE : 4000		

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	154.00	154.00
5.00	347.00	193.00
10.00	437.00	90.00
15.00	489.00	52.00
20.00	540.00	51.00
25.00	622.00	82.00
30.00	654.00	32.00
35.00	689.00	35.00
40.00	718.00	29.00
45.00	748.00	30.00
50.00	775.00	27.00
55.00	798.00	23.00
60.00	808.00	10.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	958.00	958.00	21.00
6.00	979.00	21.00	11.00
9.00	992.00	13.00	7.67
12.00	998.00	6.00	6.00
15.00	1006.00	8.00	5.00
18.00	1009.00	3.00	4.33
21.00	1012.00	3.00	3.86
24.00	1015.00	3.00	3.50
27.00	1017.00	2.00	3.22
30.00	1019.00	2.00	3.00
33.00	1020.00	1.00	2.82
36.00	1021.00	1.00	2.67
39.00	1022.00	1.00	2.54

PRESSURE TRANSIENT REPORT (CONTINUED)

INITIAL SHUT IN (CONTINUED)

Time (min)	Pressure	Delta P	Horner T
42.00	1023.00	1.00	2.43
45.00	1024.00	1.00	2.33
48.00	1025.00	1.00	2.25
51.00	1026.00	1.00	2.18
54.00	1027.00	1.00	2.11
57.00	1028.00	1.00	2.05
60.00	1029.00	1.00	2.00

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	833.00	833.00
5.00	833.00	0.00
10.00	849.00	16.00
15.00	873.00	24.00
20.00	893.00	20.00
25.00	915.00	22.00
30.00	930.00	15.00
35.00	943.00	13.00
40.00	958.00	15.00
45.00	968.00	10.00
50.00	978.00	10.00
55.00	986.00	8.00
60.00	994.00	8.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	1006.00	1006.00	11.00
6.00	1015.00	9.00	6.00
9.00	1021.00	6.00	4.33
12.00	1023.00	2.00	3.50
15.00	1025.00	2.00	3.00
18.00	1026.00	1.00	2.67
21.00	1027.00	1.00	2.43
24.00	1028.00	1.00	2.25
27.00	1029.00	1.00	2.11
30.00	1030.00	1.00	2.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
33.00	1030.00	0.00	1.91
36.00	1030.00	0.00	1.83
39.00	1031.00	1.00	1.77
42.00	1031.00	0.00	1.71
45.00	1032.00	1.00	1.67
48.00	1033.00	1.00	1.63
51.00	1033.00	0.00	1.59
54.00	1034.00	1.00	1.56
57.00	1034.00	0.00	1.53
60.00	1035.00	1.00	1.50
63.00	1035.00	0.00	1.48



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET N^o 19926

P. O. BOX 1599 PHONE (316) 262-5861

WICHITA, KANSAS 67201

Elevation

Formation

Eff. Pay Ft.

District

Garden City

Date

9-28-93

Customer Order No.

COMPANY NAME

Char-ter Prod. Co.

ADDRESS

224 E. Douglas Suite 400 Wichita KS. 67202

LEASE AND WELL NO.

K.U. Endow B#1

COUNTY

Worton

STATE

KS

Sec.

11

Twp.

315

Rge.

43w

Mail Invoice To

SAME

Co. Name

"

SAME

Address

No. Copies Requested

Res

Mail Charts To

"

Address

No. Copies Requested

Res

Formation Test No.

4

Interval Tested From

5150

ft. to

5285

ft. Total Depth

5285

ft.

Packer Depth

5145

ft.

Size

65/8

in.

Packer Depth

—

ft.

Size

—

in.

Packer Depth

5150

ft.

Size

65/8

in.

Packer Depth

—

ft.

Size

—

in.

Depth of Selective Zone Set

Top Recorder Depth (Inside)

5160

ft.

Recorder Number

10242

Cap.

4100

Bottom Recorder Depth (Outside)

5163

ft.

Recorder Number

13266

Cap.

4000

Below Straddle Recorder Depth

—

ft.

Recorder Number

—

Cap.

—

Drilling Contractor

Zenith #7

Drill Collar Length

393

I. D.

2 1/4

in.

Mud Type

Chem.

Viscosity

60

Weight Pipe Length

—

I. D.

—

in.

Weight

8.4

Water Loss

8.8

cc.

Drill Pipe Length

4844 4729

I. D.

—

in.

Chlorides

1000

P.P.M.

Test Tool Length

28

ft.

Tool Size

5 1/2

in.

Jars: Make

W.T.C.

Serial Number

415

Anchor Length

(115+20) 135

ft.

Size

6 - 5 1/2

in.

Did Well Flow?

Reversed Out

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 x 1 1/4

in.

Blow: Strong - B.O.B. in 2 min I.F.

Fair - B.O.B. in 5 min

Recovered

120

ft. of

mud

Recovered

360

ft. of

mud cut WTR - 40% mud 60% WTR

Recovered

1680

ft. of

WTR

Recovered

—

ft. of

Recovered

—

ft. of

Recovered

—

ft. of

Chlorides

1600

P.P.M.

Sample Jars used

Remarks:

slid pipe approx. 25' to get to bottom.

Time On Location

8:15

A.M.

P.M.

Time Pick Up Tool

8:45

A.M.

P.M.

Time Off Location

A.M.

P.M.

Time Set Packer(s)

11:28

A.M.

P.M.

Time Started Off Bottom

3:28

A.M.

P.M.

Maximum Temperature

136°F

Initial Hydrostatic Pressure

(A) 2458

P.S.I.

Initial Flow Period

Minutes

60

(B)

134

P.S.I. to (C)

797

P.S.I.

Initial Closed In Period

Minutes

60

(D)

1016

P.S.I.

Final Flow Period

Minutes

60

(E)

828

P.S.I. to (F)

982

P.S.I.

Final Closed In Period

Minutes

60

(G)

1125

P.S.I.

Final Hydrostatic Pressure

(H) 2456

P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By

Signature of Customer or his authorized representative

Western Representative

FIELD INVOICE

Open Hole Test	\$	✓
Misrun	\$	
Straddle Test	\$	
Jars	\$	✓
Selective Zone	\$	
Safety Joint	\$	✓
Standby	\$	
Evaluation	\$	
Extra Packer	\$	
Circ. Sub.	\$	✓
Mileage	\$	
Fluid Sampler	\$	
Extra Charts	\$	
Insurance	\$	
Telecopier	\$	
TOTAL	\$	

WESTERN TESTING CO., INC.

Pressure Data

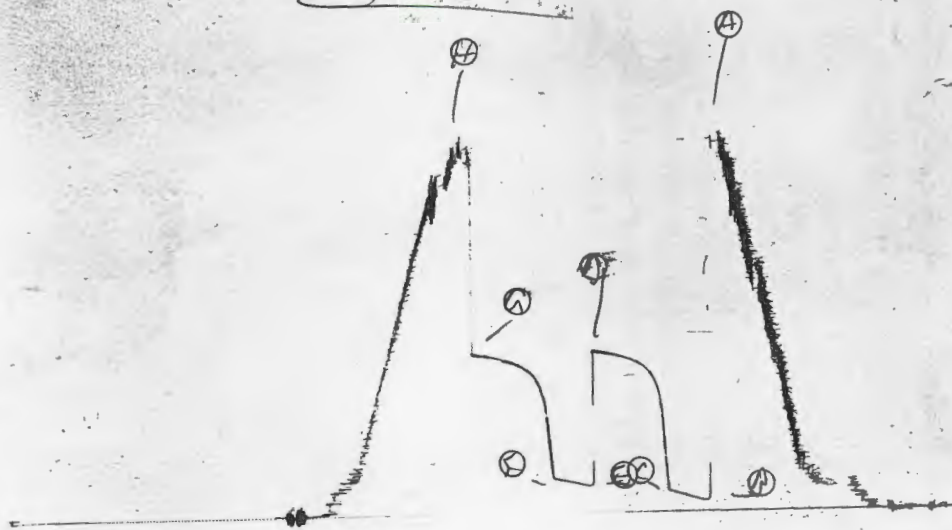
Date 9-28-90 Test Ticket No. 19926
 Recorder No. 15260 Capacity _____ Location _____ Ft.
 Clock No. _____ Elevation _____ Well Temperature _____ °F
 Point Pressure Time Given Time Computed
 A Initial Hydrostatic Mud 2474 P.S.I. Open Tool _____ M
 B First Initial Flow Pressure _____ P.S.I. First Flow Pressure _____ Mins. _____ Mins.
 C First Final Flow Pressure _____ P.S.I. Initial Closed-in Pressure _____ Mins. _____ Mins.
 D Initial Closed-in Pressure _____ P.S.I. Second Flow Pressure _____ Mins. _____ Mins.
 E Second Initial Flow Pressure _____ P.S.I. Final Closed-in Pressure _____ Mins. _____ Mins.
 F Second Final Flow Pressure _____ P.S.I.
 G Final Closed-in Pressure _____ P.S.I.
 H Final Hydrostatic Mud 2333 P.S.I.

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	154	0	808	0	812	0	974
P 2 5	247	3	958	5	813	3	1006
P 3 10	257	6	979	10	849	6	1015
P 4 15	289	9	992	15	823	9	1021
P 5 20	540	12	998	20	893	12	1022
P 6 25	622	15	1006	25	915	15	1025
P 7 30	654	18	1009	30	930	18	1026
P 8 35	689	21	1012	35	942	21	1027
P 9 40	718	24	1015	40	958	24	1028
P10 45	748	27	1017	45	968	27	1029
P11 50	775	30	1019	50	978	30	1030
P12 55	798	33	1020	55	984	33	1030
P13 60	808	36	1021	60	994	36	1030
P14 65		39	1022	65		39	1031
P15 70		42	1022	70		42	1031
P16 75		45	1024	75		45	1031
P17 80		48	1025	80		48	1032
P18 85		51	1026	85		51	1032
P19 90		54	1027	90		54	1034
P20 95		57	1028	95		57	1034
100		60	1029	100		60	1035
						62	1035

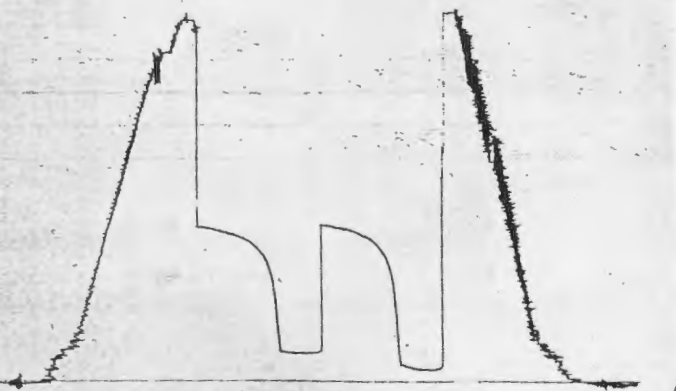
K4 19905 43849.DST1

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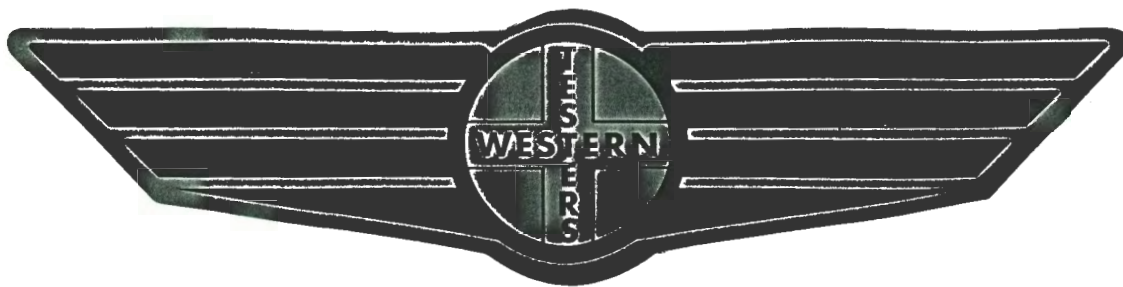


K4 19905 204.DST1

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FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

COMPANY CHARTER PRODUCTION COMPANY LEASE & WELL NO. #1-B KU ENDOWMENT SEC. 11 TWP. 31S RGE. 43W TEST NO. 1 DATE 9/21/93

DST REPORT

GENERAL INFORMATION

DATE : 9-21-93
CUSTOMER : CHARTER PRODCUTION CO.
WELL : B #1 TEST: 1
ELEVATION: 3581 KB
SECTION : 11
RANGE : 43W COUNTY: MORTON
GAUGE SN#: 3849 RANGE : 4200

TICKET : 19905
LEASE : K.U.
GEOLOGIST: ROBERT S.
FORMATION: MARMATON
TOWNSHIP : 31S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 4150.00 ft TO: 4167.00 ft TVD: 4167.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL

DEPTH OF RECORDERS: 4157.0 ft 4160.0 ft
TEMPERATURE: 114.0

DRILL COLLAR LENGTH:	509.0 ft	I.D.:	2.250 in
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH :	3613.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	17.0 ft	ANCHOR SIZE:	5.500 in
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH
PACKER DEPTH:	4145.0 ft	SIZE:	6.630 in
PACKER DEPTH:	4150.0 ft	SIZE:	6.630 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in

MUD INFORMATION

DRILLING CON. : ZENITH DRILLING #7
MUD TYPE : CHEMICAL
WEIGHT : 8.700 ppg
CHLORIDES : 1500 ppm
JARS-MAKE : WTC
DID WELL FLOW?: NO

VISCOSITY : 45.00 cp
WATER LOSS: 12.800 cc

SERIAL NUMBER: 402
REVERSED OUT?: NO

COMMENTS

Comment

STRONG BLOW OFF BOTTOM OF BUCKET IN 30 SECONDS ON
INITIAL FLOW PERIOD. SURFACE BLOW BUILDING TO THE
BOTTOM OF BUCKET IN 29 MINUTES ON FINAL FLOW

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

PERIOD.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
65.0	0.0	0.0	16.0	84.0	WATER CUT MUD
285.0	0.0	0.0	100.0	0.0	SALT WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 61000 PPM
0.0	0.0	0.0	0.0	0.0	600' OF GAS ABOVE FLUID

RATE INFORMATION

OIL VOLUME: 0.0000 STB
 GAS VOLUME: 0.0000 SCF
 MUD VOLUME: 0.2685 STB
 WATER VOLUME: 1.4526 STB
 TOTAL FLUID : 1.7211 STB

TOTAL FLOW TIME: 60.0000 min.
 AVERAGE OIL RATE: 0.0000 STB/D
 AVERAGE WATER RATE: 41.3068 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2004.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	46.00	110.00
INITIAL SHUT-IN	60.00		882.00
FINAL FLOW	60.00	140.00	178.00
FINAL SHUT-IN	60.00		868.00

FINAL HYDROSTATIC PRESSURE: 1993.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2027.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	60.00	118.00
INITIAL SHUT-IN	57.00		894.00
FINAL FLOW	30.00	154.00	193.00
FINAL SHUT-IN	57.00		882.00

FINAL HYDROSTATIC PRESSURE: 1993.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 9-21-93	TICKET : 19905
CUSTOMER : CHARTER PRODCUTION CO.	LEASE : K.U.
WELL : B #1 TEST: 1	GEOLOGIST: ROBERT S.
ELEVATION: 3581 KB	FORMATION: MARMATON
SECTION : 11	TOWNSHIP : 31S
RANGE : 43W COUNTY: MORTON	STATE : KS
GAUGE SN#: 3849 RANGE : 4200	CLOCK : 12

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	60.00	60.00
5.00	64.00	4.00
10.00	72.00	8.00
15.00	85.00	13.00
20.00	97.00	12.00
25.00	109.00	12.00
30.00	118.00	9.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	399.00	399.00	11.00
6.00	610.00	211.00	6.00
9.00	702.00	92.00	4.33
12.00	747.00	45.00	3.50
15.00	774.00	27.00	3.00
18.00	801.00	27.00	2.67
21.00	818.00	17.00	2.43
24.00	827.00	9.00	2.25
27.00	838.00	11.00	2.11
30.00	847.00	9.00	2.00
33.00	856.00	9.00	1.91
36.00	862.00	6.00	1.83
39.00	869.00	7.00	1.77
42.00	872.00	3.00	1.71
45.00	879.00	7.00	1.67
48.00	882.00	3.00	1.63
51.00	887.00	5.00	1.59
54.00	891.00	4.00	1.56
57.00	894.00	3.00	1.53

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	154.00	154.00
5.00	155.00	1.00
10.00	164.00	9.00
15.00	172.00	8.00
20.00	181.00	9.00
25.00	188.00	7.00
30.00	193.00	5.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	508.00	508.00	11.00
6.00	642.00	134.00	6.00
9.00	707.00	65.00	4.33
12.00	748.00	41.00	3.50
15.00	772.00	24.00	3.00
18.00	791.00	19.00	2.67
21.00	804.00	13.00	2.43
24.00	818.00	14.00	2.25
27.00	827.00	9.00	2.11
30.00	837.00	10.00	2.00
33.00	843.00	6.00	1.91
36.00	850.00	7.00	1.83
39.00	855.00	5.00	1.77
42.00	860.00	5.00	1.71
45.00	864.00	4.00	1.67
48.00	871.00	7.00	1.63
51.00	874.00	3.00	1.59
54.00	878.00	4.00	1.56
57.00	882.00	4.00	1.53



WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET N^o 19905P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201Elevation 3581 K.B. Formation Marmaton Eff. Pay Ft.District Garden City Date 9-21-78 Customer Order No. COMPANY NAME Charter Pool Co.ADDRESS 224 E. Douglas, Suite 400 Wichita, KS. 67202LEASE AND WELL NO. KU #1 "B" COUNTY Morton STATE KS. Sec. 11 Twp. 31S Rge. 43W.Mail Invoice To Charter Pool Co. Name Some Address H 1-B No. Copies Requested Reg.Mail Charts To Call Charter Address KU Endowment No. Copies Requested Formation Test No. 1 Interval Tested From 4150 ft. to 4167 ft. Total Depth 4167 ft.Packer Depth 4145 ft. Size 6 5/8 in. Packer Depth ft. Size in.Packer Depth 4150 ft. Size 6 5/8 in. Packer Depth ft. Size in.Depth of Selective Zone Set Top Recorder Depth (Inside) 4157 ft. Recorder Number 3849 Cap. 4200Bottom Recorder Depth (Outside) 4160 ft. Recorder Number 2604 Cap. 4150Below Straddle Recorder Depth ft. Recorder Number Cap. Drilling Contractor Zenth Rig 7 Drill Collar Length 509 I. D. 2 1/4 in.Mud Type Chem. Viscosity 45 Weight Pipe Length I. D. in.Weight 8.7 Water Loss 12.8 cc. Drill Pipe Length 3613 I. D. 3.8 in.Chlorides 4500 P.P.M. Test Tool Length 28 ft. Tool Size 5 1/2 in.Jars: Make W.T.C. Serial Number 402 Anchor Length 17 ft. Size 5 1/2 in.Did Well Flow? No Reversed Out No 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 X.H. in.Blow: Strong in 30 Sec. "B.O.B." I.F.Surface Blow, Built to the "B.O.B." in 29 min. F.F.Recovered 600 ft. of GIPRecovered 65 ft. of WTR cut Mud 16 3/4 WTR 84 3/4 mudRecovered 285 ft. of Salt WTR 61000 PPMRecovered ft. of Recovered ft. of Total Fluid Rec. 350'Chlorides 61000 P.P.M. Sample Jars used Remarks: Time On Location 4:15 A.M. Time Pick Up Tool 5:30 A.M. Time Off Location A.M.Time Set Packer(s) 7:20 A.M. Time Started Off Bottom 10:20 A.M. Maximum Temperature 114°FInitial Hydrostatic Pressure (A) 2004 P.S.I.Initial Flow Period Minutes 30 (B) 46 P.S.I. to (C) 110 P.S.I.Initial Closed In Period Minutes 60 (D) 882 P.S.I.Final Flow Period Minutes 30 (E) 140 P.S.I. to (F) 178 P.S.I.Final Closed In Period Minutes 60 (G) 868 P.S.I.Final Hydrostatic Pressure (H) 1993 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Rowls
Signature of Customer or his authorized representativeWestern Representative Jerry S. Suber

FIELD INVOICE

Open Hole Test	\$ ☒
Misrun	\$ ☐
Straddle Test	\$ ☐
Jars	\$ ☒
Selective Zone	\$ ☒
Safety Joint	\$ ☒
Standby	\$ ☐
Evaluation	\$ ☐
Extra Packer	\$ ☐
Circ. Sub.	\$ ☒
Mileage	\$ ☐
Fluid Sampler	\$ ☐
Extra Charts	\$ ☐
Insurance	\$ ☐
Telecopier	\$ ☐
TOTAL	\$ ☐

WESTERN TESTING CO., INC.

Pressure Data

Date 7-21-52 Test Ticket No. 19905
 Recorder No. 5849 Capacity _____ Location _____ Ft. _____
 Clock No. _____ Elevation _____ Well Temperature _____ °F _____
 Point _____ Pressure _____ Time Given _____ Time Computed _____
 A Initial Hydrostatic Mud 1027 P.S.I. Open Tool _____ M _____
 B First Initial Flow Pressure _____ P.S.I. First Flow Pressure _____ Mins. _____ Mins. _____
 C First Final Flow Pressure _____ P.S.I. Initial Closed-in Pressure _____ Mins. _____ Mins. _____
 D Initial Closed-in Pressure _____ P.S.I. Second Flow Pressure _____ Mins. _____ Mins. _____
 E Second Initial Flow Pressure _____ P.S.I. Final Closed-in Pressure _____ Mins. _____ Mins. _____
 F Second Final Flow Pressure _____ P.S.I. _____
 G Final Closed-in Pressure _____ P.S.I. _____
 H Final Hydrostatic Mud 1992 P.S.I. _____

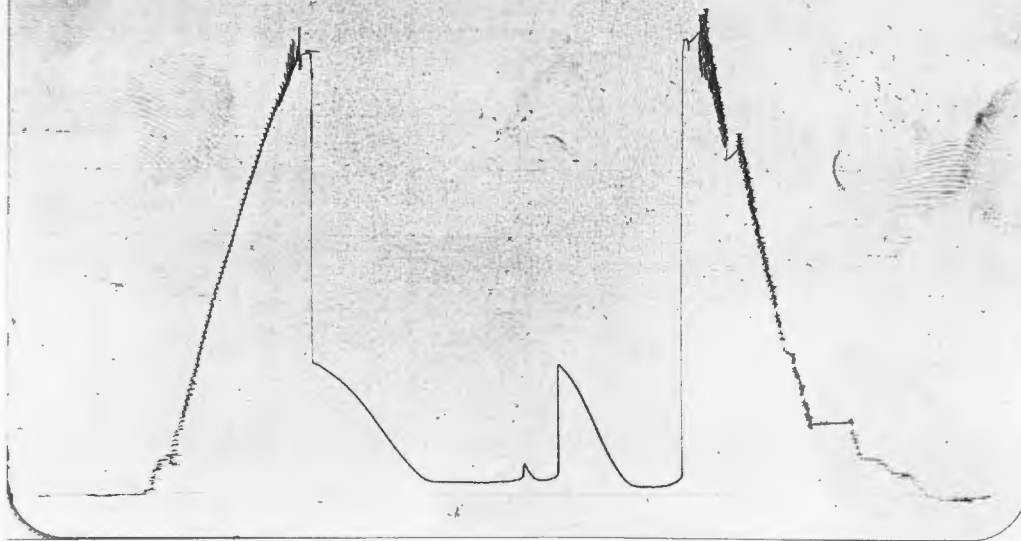
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	44	0	118	0	154	0	192
P 2 5	64	3	579	5	155	3	508
P 3 10	25	6	610	10	164	6	646
P 4 15	85	9	702	15	172	9	707
P 5 20	97	12	747	20	181	12	748
P 6 25	109	15	774	25	188	15	772
P 7 30	118	18	801	30	192	18	771
P 8 35		21	818	35		21	804
P 9 40		24	827	40		24	818
P10 45		27	838	45		27	827
P11 50		30	847	50		30	837
P12 55		33	856	55		33	842
P13 60		36	865	60		36	850
P14 65		39	869	65		39	855
P15 70		42	873	70		42	860
P16 75		45	879	75		45	864
P17 80		48	882	80		48	871
P18 85		51	887	85		51	874
P19 90		54	891	90		54	878
P20 95		57	894	95		57	882
100		60		100		60	

KT 19906

2604 DST2

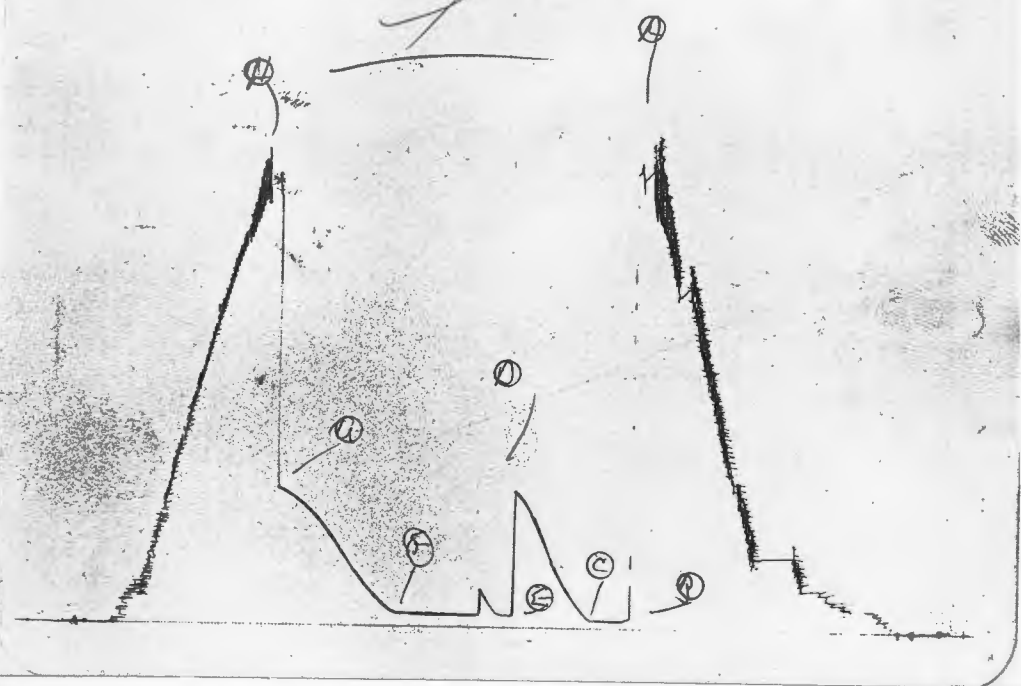
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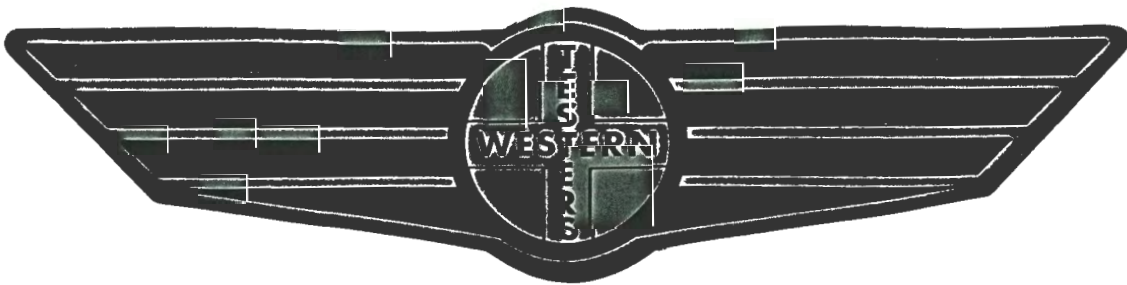
KT 19906

43849 DST2

1



FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

COMPANY CHARTER PRODUCTION COMPANY LEASE & WELL NO. #1-B KU ENDOWMENT SEC. 11 TWP. 31S RGF. 43W TEST NO. 2 DATE 9/24/93

DST REPORT

GENERAL INFORMATION

DATE : 9-21-93
CUSTOMER : CHARTER PRODCUTION CO.
WELL : B #1 TEST: 2
ELEVATION: 3581 KB
SECTION : 11
RANGE : 43W COUNTY: MORTON
GAUGE SN#: 3849 RANGE : 4200

TICKET : 19906
LEASE : K.U.
GEOLOGIST: ROBERT S.
FORMATION: KEYS
TOWNSHIP : 31S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 4150.00 ft TO: 4167.00 ft TVD: 4167.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL
DEPTH OF RECORDERS: 4157.0 ft 4160.0 ft
TEMPERATURE: 114.0

DRILL COLLAR LENGTH:	509.0 ft	I.D.:	2.250 in
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:	0.000 in
DRILL PIPE LENGTH :	3613.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	17.0 ft	ANCHOR SIZE:	5.500 in
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH
PACKER DEPTH:	4145.0 ft	SIZE:	6.630 in
PACKER DEPTH:	4150.0 ft	SIZE:	6.630 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in

MUD INFORMATION

DRILLING CON. : ZENITH DRILLING #7
MUD TYPE : CHEMICAL
WEIGHT : 8.700 ppg
CHLORIDES : 1500 ppm
JARS-MAKE : WTC
DID WELL FLOW?: NO

VISCOSITY : 45.00 cp
WATER LOSS: 12.800 cc

SERIAL NUMBER: 402
REVERSED OUT?: NO

COMMENTS

Comment

VERY WEAK 1/4" BUILDING TO THE BOTTOM OF BUCKET IN
15 MINUTES ON INITIAL FLOW PERIOD. FAIR 3" BLOW
BUILDING TO THE BOTTOM OF BUCKET IN 27 MINUTES ON

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

FINAL FLOW PERIOD.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
65.0	0.0	0.0	16.0	84.0	WATER CUT MUD
285.0	0.0	0.0	100.0	0.0	SALT WATER
0.0	0.0	0.0	0.0	0.0	CHLORIDES 61000 PPM
0.0	0.0	0.0	0.0	0.0	600' OF GAS ABOVE FUIID

RATE INFORMATION

OIL VOLUME: 0.0000 STB
 GAS VOLUME: 0.0000 SCF
 MUD VOLUME: 0.2685 STB
 WATER VOLUME: 1.4526 STB
 TOTAL FLUID : 1.7211 STB

TOTAL FLOW TIME: 120.0000 min.
 AVERAGE OIL RATE: 0.0000 STB/D
 AVERAGE WATER RATE: 20.6534 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2487.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	38.00	38.00
INITIAL SHUT-IN	60.00		751.00
FINAL FLOW	90.00	55.00	61.00
FINAL SHUT-IN	90.00		751.00

FINAL HYDROSTATIC PRESSURE: 2432.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2497.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	46.00	48.00
INITIAL SHUT-IN	57.00		750.00
FINAL FLOW	90.00	71.00	82.00
FINAL SHUT-IN	87.00		758.00

FINAL HYDROSTATIC PRESSURE: 2433.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 9-21-93	TICKET : 19906
CUSTOMER : CHARTER PRODCUTION CO.	LEASE : K.U.
WELL : B #1	GEOLOGIST: ROBERT S.
ELEVATION: 3581 KB	FORMATION: KEYS
SECTION : 11	TOWNSHIP : 31S
RANGE : 43W	STATE : KS
GAUGE SN#: 3849	CLOCK : 12
COUNTY: MORTON	
RANGE : 4200	

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	46.00	46.00
5.00	46.00	0.00
10.00	46.00	0.00
15.00	46.00	0.00
20.00	47.00	1.00
25.00	47.00	0.00
30.00	48.00	1.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	64.00	64.00	11.00
6.00	88.00	24.00	6.00
9.00	120.00	32.00	4.33
12.00	149.00	29.00	3.50
15.00	182.00	33.00	3.00
18.00	216.00	34.00	2.67
21.00	253.00	37.00	2.43
24.00	290.00	37.00	2.25
27.00	335.00	45.00	2.11
30.00	388.00	53.00	2.00
33.00	449.00	61.00	1.91
36.00	504.00	55.00	1.83
39.00	555.00	51.00	1.77
42.00	599.00	44.00	1.71
45.00	641.00	42.00	1.67
48.00	682.00	41.00	1.63
51.00	710.00	28.00	1.59
54.00	740.00	30.00	1.56
57.00	750.00	10.00	1.53

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	71.00	71.00
5.00	72.00	1.00
10.00	76.00	4.00
15.00	101.00	25.00
20.00	163.00	62.00
25.00	87.00	-76.00
30.00	74.00	-13.00
35.00	75.00	1.00
40.00	76.00	1.00
45.00	77.00	1.00
50.00	77.00	0.00
55.00	78.00	1.00
60.00	79.00	1.00
65.00	79.00	0.00
70.00	80.00	1.00
75.00	80.00	0.00
80.00	81.00	1.00
85.00	81.00	0.00
90.00	82.00	1.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	91.00	91.00	11.00
6.00	105.00	14.00	6.00
9.00	123.00	18.00	4.33
12.00	146.00	23.00	3.50
15.00	170.00	24.00	3.00
18.00	189.00	19.00	2.67
21.00	214.00	25.00	2.43
24.00	242.00	28.00	2.25
27.00	372.00	130.00	2.11
30.00	302.00	-70.00	2.00
33.00	333.00	31.00	1.91
36.00	367.00	34.00	1.83
39.00	402.00	35.00	1.77
42.00	434.00	32.00	1.71
45.00	477.00	43.00	1.67
48.00	507.00	30.00	1.63
51.00	535.00	28.00	1.59
54.00	563.00	28.00	1.56
57.00	588.00	25.00	1.53

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
60.00	616.00	28.00	1.50
63.00	637.00	21.00	0.00
66.00	660.00	23.00	0.00
69.00	676.00	16.00	0.00
72.00	695.00	19.00	0.00
75.00	712.00	17.00	0.00
78.00	725.00	13.00	0.00
81.00	738.00	13.00	0.00
84.00	751.00	13.00	0.00
87.00	758.00	7.00	0.00

HORNER ANALYSIS REPORT

GENERAL INFORMATION

DATE : 9-21-93	TICKET : 19906
CUSTOMER : CHARTER PRODCUTION CO.	LEASE : K.U.
WELL : B #1	GEOLOGIST: ROBERT S.
ELEVATION: 3581 KB	FORMATION: KEYS
SECTION : 11	TOWNSHIP : 31S
RANGE : 43W	STATE : KS
GAUGE SN#: 3849	CLOCK : 12
COUNTY: MORTON	
RANGE : 4200	

Input Data

Porosity 0.900 Rw: 0.328 ft h: 14.000 ft

qo 0.2 STB GOR 9022219.4 SCF/STB

Pvt Data
 Evalutation Pressure : 1366.0
 Evalutation Temperature: 114.0

Oil Grav 30.00 API	Gas Grav 0.65 API	Pb 8260418.89 PSIA
Bo 22273.248 RBL/STB	Vis 1.000 cp	Ct 2.0322E+002 1/PSI

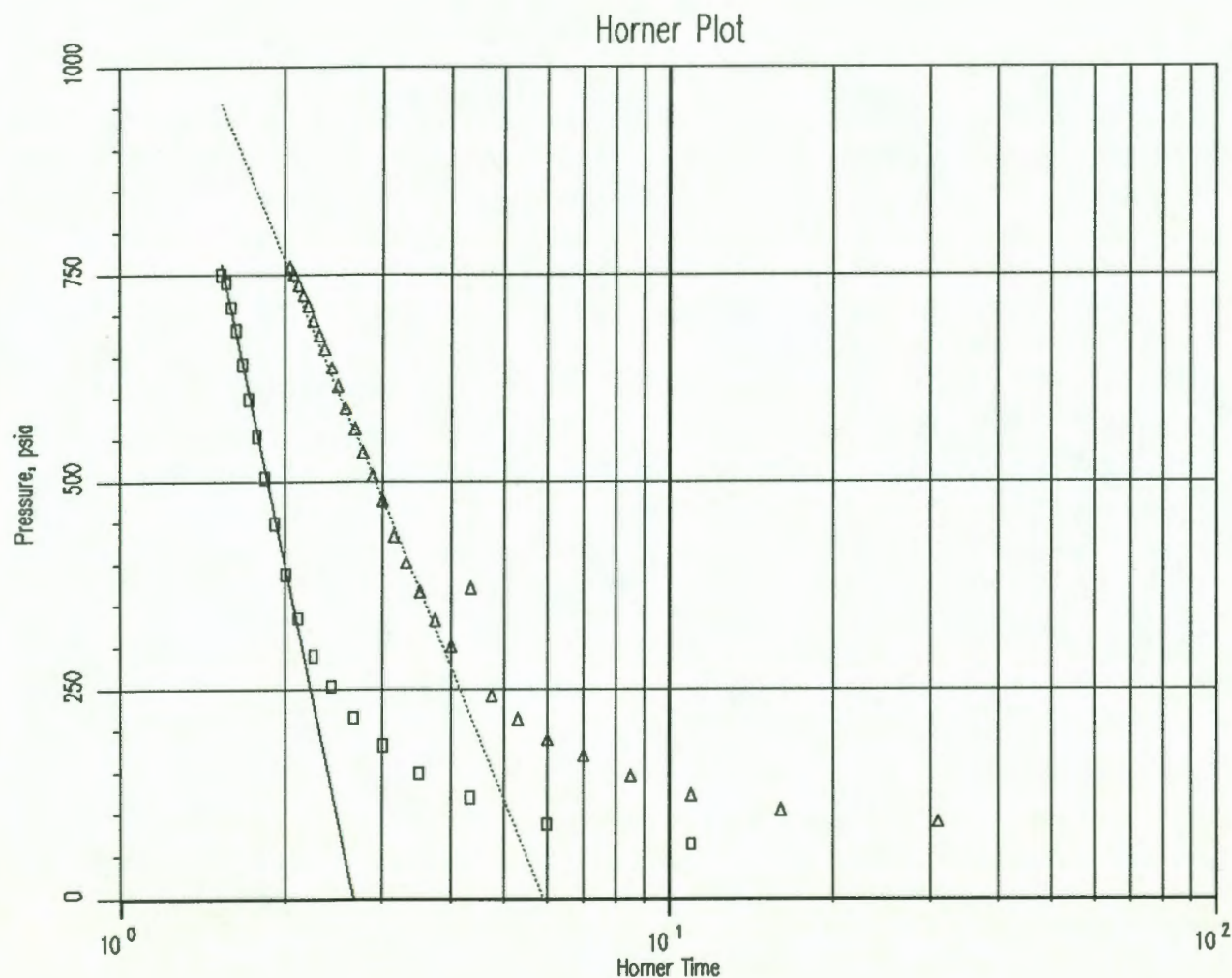
Horner Results

	Inital Shut-In	Final Shut-In
pseudo pressure time	0.50 hrs	1.50 hrs
slope	-3135.95	-1629.78
pstar	1337.07 psig	1254.54 psig
plhr	784.85 psig	605.99 psig
skin	4.56	4.04
permeability	0.06 md	0.11 md
transmisability	263.18 md-ft/cp	506.39 md-ft/cp
radius of investigation	0.01 ft	0.02 ft
Damage-Ratio	-0.072 percent	-0.11 percent
Drawdown Factor		-1.067 percent
Drawdown P*		6.172 percent

DATE 9-21-93
 CUSTOMER CHARTER PRODCUTION CO.
 WELL B #1
 ELEVATION 3581 KB
 SECTION 11
 RANGE 43W
 GAUGE SN# 3849

TEST 2
 COUNTY MORTON
 RANGE 4200

TICKET 19906
 LEASE K.U.
 GEOLOGIST ROBERT S.
 FORMATION KEYS
 TOWNSHIP 31S
 STATE KS
 CLOCK 12

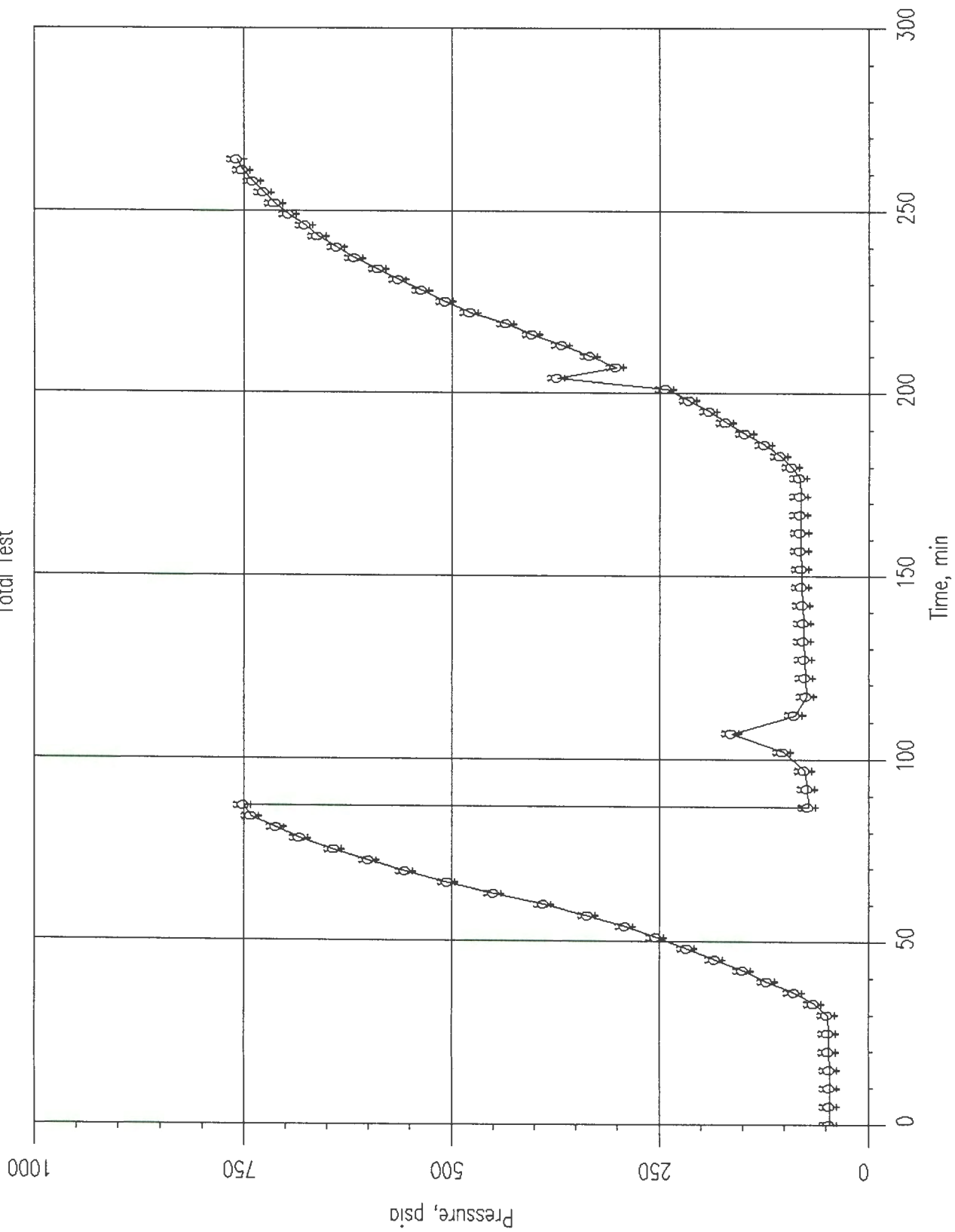


Result

	#1	#2
tp, hrs	0.50	1.50
Slope	-3135.95	-1629.78
Pstar, psig	1337.07	1254.54
P1hr, psig	784.85	605.99
Skin	4.56	4.04
k, md	0.06	0.11
kh/u, md-ft/cp	263.18	506.39
ri, ft	0.01	0.02
DR, %	-0.07	-0.11
Drawdown Factor, %		-1.067
Drawdown P*, %		6.172

— BUILD 1
 BUILD 2

Profile Plot Total Test





WESTERN TESTING CO., INC.

FORMATION TESTING

TICKET N° 19906

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201Elevation 3581 K.B. Formation Keys Eff. Pay _____ Ft.District Garden City Date 9-24-73 Customer Order No. _____COMPANY NAME Charles Pool Co.ADDRESS 224 E. Douglas, Suite 400 Wichita, KS 67202LEASE AND WELL NO. Kill #1 "B" COUNTY Marion STATE KS Sec. 11 Twp. 31S Rge. 43WMail Invoice To Charles Pool Co. Address Same No. Copies Requested ReqMail Charts To Call Charles Address _____ No. Copies Requested _____Formation Test No. 2 Interval Tested From 5077 ft. to 5130 ft. Total Depth 5130 ft.Packer Depth 5077 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.Packer Depth 5077 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 5089 ft.Recorder Number 3849 Cap. 4200Bottom Recorder Depth (Outside) 5092 ft.Recorder Number 2604 Cap. 4150

Below Straddle Recorder Depth _____ ft.

Recorder Number _____ Cap. _____

Drilling Contractor Zenith Rig 7Drill Collar Length 480 I. D. 2 1/4 in.Mud Type Chem Viscosity 61

Weight Pipe Length _____ I. D. _____ in.

Weight 8.6 Water Loss 8.8 cc.Drill Pipe Length 4569 I. D. 3.8 in.Chlorides 1000 P.P.M.Test Tool Length 28 ft. Tool Size 5 1/2 in.Jars: Make W.T.C. Serial Number 402Anchor Length 294245.3 ft. Size 6 1/4 5 1/2 in.Did Well Flow? No Reversed Out NoSurface Choke Size 3/4 in. Bottom Choke Size 3/4 in.Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 X 1 1/2 in.Blow: Very weak 1/4", Built to the B.O.B. in 15 min. I.F.
For 3", Built to the B.O.B. in 27 min. F.F.Recovered 955 ft. of GIPRecovered 115 ft. of 5 1/2 Gas cut mud 4 1/2 Gas 96% mud

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of Total Fluid Rec. 115

Chlorides _____ P.P.M. Sample Jars used _____ Remarks: _____

Time On Location 10:00 A.M. Time Pick Up Tool 11:40 A.M. Time Off Location _____ A.M.Time Set Packer(s) 2:50 P.M. Time Started Off Bottom 7:20 P.M. Maximum Temperature 136°FInitial Hydrostatic Pressure _____ (A) 2487 P.S.I.Initial Flow Period _____ Minutes 30 (B) 38 P.S.I. to (C) 38 P.S.I.Initial Closed In Period _____ Minutes 60 (D) 751 P.S.I.Final Flow Period _____ Minutes 90 (E) 55 P.S.I. to (F) 61 P.S.I.Final Closed In Period _____ Minutes 90 (G) 751 P.S.I.Final Hydrostatic Pressure _____ (H) 2432 P.S.I.

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All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature]
Signature of Customer or his authorized representativeWestern Representative [Signature]

FIELD INVOICE

Open Hole Test	✓	\$	✓
Misrun		\$	
Straddle Test		\$	
Jars	✓	\$	✓
Selective Zone		\$	
Safety Joint	✓	\$	✓
Standby		\$	
Evaluation		\$	<u>50</u>
Extra Packer		\$	
Circ. Sub.	✓	\$	
Mileage		\$	
Fluid Sampler		\$	
Extra Charts		\$	
Insurance		\$	
Telecopier		\$	
TOTAL		\$	

WESTERN TESTING CO., INC.

Pressure Data

Date 9-24-92
Recorder No. 3849

Test Ticket No. 19706

Clock No. _____ Elevation _____ Capacity _____ Location _____ Ft. _____
Well Temperature _____ °F

Point	Pressure	Open Tool	Time Given	Time Computed
A Initial Hydrostatic Mud <u>2497</u>	P.S.I.		M	
B First Initial Flow Pressure	P.S.I.	First Flow Pressure	Mins.	Mins.
C First Final Flow Pressure	P.S.I.	Initial Closed-in Pressure	Mins.	Mins.
D Initial Closed-in Pressure	P.S.I.	Second Flow Pressure	Mins.	Mins.
E Second Initial Flow Pressure	P.S.I.	Final Closed-in Pressure	Mins.	Mins.
F Second Final Flow Pressure	P.S.I.			
G Final Closed-in Pressure	P.S.I.			
H Final Hydrostatic Mud <u>2452</u>	P.S.I.			

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 0	<u>44</u>	0	<u>48</u>	0	<u>71</u>	0	<u>82</u>
P 2 5	<u>42</u>	3	<u>64</u>	5	<u>72</u>	3	<u>91</u>
P 3 10	<u>42</u>	6	<u>88</u>	10	<u>76</u> OK	6	<u>105</u>
P 4 15	<u>46</u>	9	<u>110</u>	15	<u>101</u>	9	<u>112</u>
P 5 20	<u>47</u>	12	<u>149</u>	20	<u>162</u>	12	<u>146</u>
P 6 25	<u>47</u>	15	<u>182</u>	25	<u>87</u>	15	<u>170</u>
P 7 30	<u>48</u>	18	<u>216</u>	30	<u>74</u>	18 <u>189</u>	<u>170</u>
P 8 35		21	<u>252</u>	35	<u>75</u>	21 <u>214</u>	<u>150</u>
P 9 40		24	<u>250</u>	40	<u>76</u>	24	<u>242</u>
P10 45		27	<u>235</u>	45	<u>77</u>	27	<u>272</u>
P11 50		30	<u>388</u>	50	<u>77</u>	30	<u>305</u>
P12 55		33	<u>449</u>	55	<u>78</u>	33	<u>332</u>
P13 60		36	<u>504</u>	60	<u>79</u>	36	<u>367</u>
P14 65		39	<u>555</u>	65	<u>79</u>	39	<u>404</u>
P15 70		42	<u>599</u>	70	<u>80</u>	42	<u>434</u>
P16 75		45	<u>641</u>	75	<u>80</u>	45	<u>477</u>
P17 80		48	<u>681</u>	80	<u>81</u>	48	<u>507</u>
P18 85		51	<u>710</u>	85	<u>81</u>	51	<u>535</u>
P19 90		54	<u>740</u>	90	<u>82</u>	54	<u>562</u>
P20 95		57	<u>750</u>	95		57	<u>588</u>
100		60		100		60	<u>614</u>

WESTERN TESTING CO., INC.

Pressure Data

Date: _____

Test Ticket No. 17904

Recorder No. _____ Capacity _____ Location _____ Ft.

Clock No. _____ Elevation _____ Well Temperature _____ °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud _____ P.S.I.	Open Tool _____ M _____		
B First Initial Flow Pressure _____ P.S.I.	First Flow Pressure _____ Mins. _____ Mins.		
C First Final Flow Pressure _____ P.S.I.	Initial Closed-in Pressure _____ Mins. _____ Mins.		
D Initial Closed-in Pressure _____ P.S.I.	Second Flow Pressure _____ Mins. _____ Mins.		
E Second Initial Flow Pressure _____ P.S.I.	Final Closed-in Pressure _____ Mins. _____ Mins.		
F Second Final Flow Pressure _____ P.S.I.			
G Final Closed-in Pressure _____ P.S.I.			
H Final Hydrostatic Mud _____ P.S.I.			

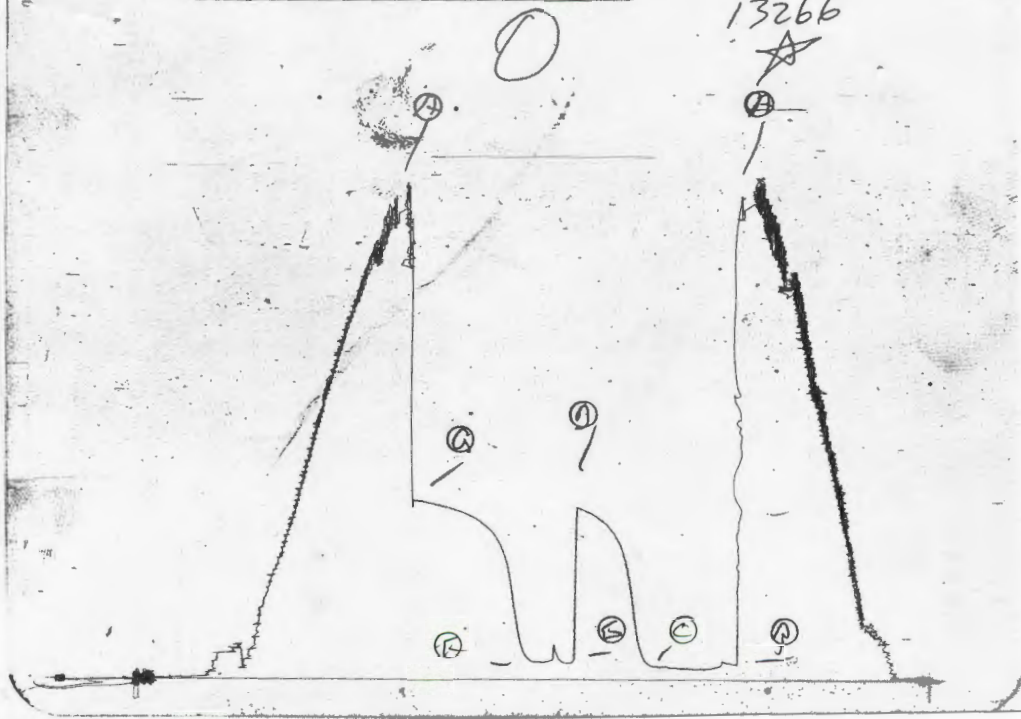
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of _____ mins. and a		of _____ mins. and a		of _____ mins. and a		of _____ mins. and a	
final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 105		63		105		63	65.1
P 2 110		66		110		66	66.0
P 3 115		69		115		69	67.6
P 4 120		72		120		72	69.5
P 5 125		75		125		75	71.2
P 6 130		78		130		78	72.5
P 7 135		81		135		81	73.8
P 8 140		84		140		84	75.1
P 9 145		87		145		87	75.8
P10 150		90		150		90	
P11 155		93		155		93	
P12 160		96		160		96	
P13 165		99		165		99	
P14 170		102		170		102	
P15 175		105		175		105	
P16 180		108		180		108	
P17 185		111		185		111	
P18 190		114		190		114	
P19 195		117		195		117	
P20 200		120		200		120	

KT 20500

DST#3

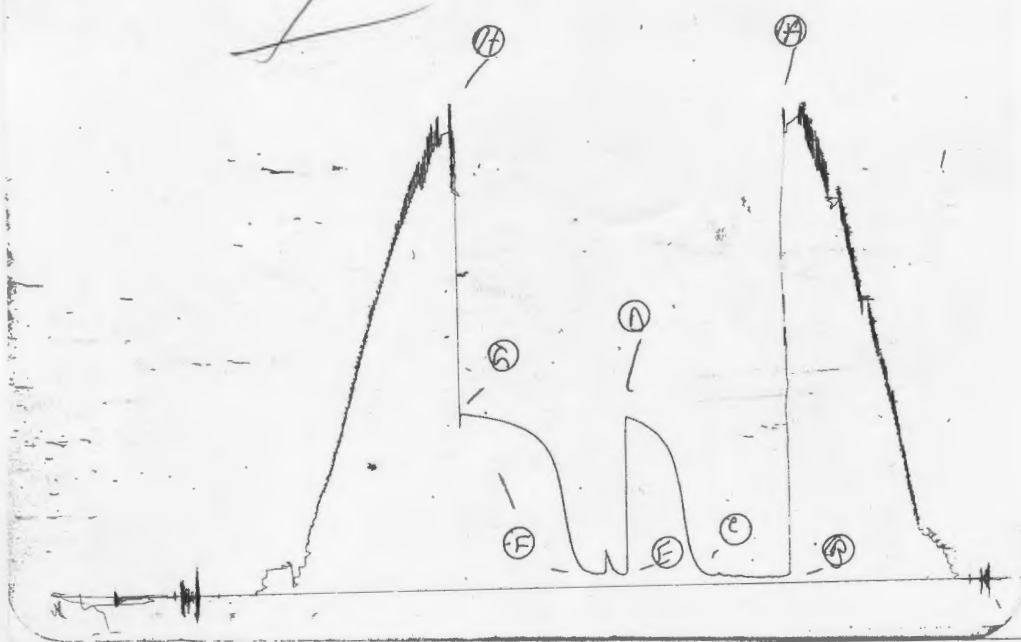
13266



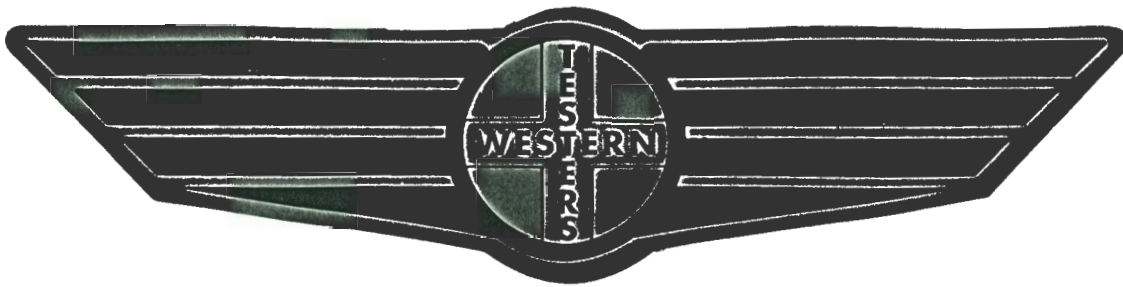
KT 20500

DST#3

10242



FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 80 - 688 - 7021

DST REPORT

GENERAL INFORMATION

DATE	: 9-25-93	TICKET	: 20500
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: K.U.
WELL	: B #1	TEST: 3	GEOLOGIST: S.
ELEVATION:		FORMATION:	KEYES
SECTION	: 11	TOWNSHIP	: 31S
RANGE	: 43W	STATE	: KS
GAUGE SN#:	10242	CLOCK	: 12
COUNTY:	MORTON		
RANGE	: 4100		

WELL INFORMATION

PERFORATION INTERVAL FROM:	5126.00 ft	TO:	5150.00 ft	TVD:	5150.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	5141.0 ft		5144.0 ft		
TEMPERATURE:	134.0				
DRILL COLLAR LENGTH:	508.0 ft	I.D.:		2.250 in	
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:		0.000 in	
DRILL PIPE LENGTH :	4590.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	28.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	24.0 ft	ANCHOR SIZE:		5.500 in	
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:		0.750 in	
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :		4.5XH	
PACKER DEPTH:	5121.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	5126.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON. :	ZENITH #7	VISCOSITY :	53.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	7.200 cc
WEIGHT :	8.300 ppg		
CHLORIDES :	1000 ppm	SERIAL NUMBER:	415
JARS-MAKE :	WTC	REVERSED OUT?:	NO
DID WELL FLOW?:	NO		

COMMENTS

Comment

WEAK BLOW SLOWLY BUILDING TO 2" IN BUCKET ON
INITIAL FLOW PERIOD. WEAK BLOW SLOWLY BUILDING TO
2" IN BUCKET ON FINAL FLOW PERIOD.

DST REPORT (CONTINUED)

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
90.0	1.0	4.0	0.0	95.0	GAS CUT MUD

RATE INFORMATION

OIL VOLUME:	0.0044	STB		
GAS VOLUME:	0.0994	SCF		
MUD VOLUME:	0.4204	STB		
WATER VOLUME:	0.0000	STB		
TOTAL FLUID :	0.4249	STB		
			TOTAL FLOW TIME:	90.0000 min.
			AVERAGE OIL RATE:	6.7979 STB/D
			AVERAGE WATER RATE:	0.0000 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2560.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	63.00	65.00
INITIAL SHUT-IN	60.00		889.00
FINAL FLOW	30.00	83.00	85.00
FINAL SHUT-IN	90.00		922.00

FINAL HYDROSTATIC PRESSURE: 2558.00

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2560.00

Description	Duration	p1	p End
INITIAL FLOW	60.00	69.00	63.00
INITIAL SHUT-IN	60.00		903.00
FINAL FLOW	30.00	85.00	91.00
FINAL SHUT-IN	90.00		930.00

FINAL HYDROSTATIC PRESSURE: 2558.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 9-25-93	TICKET	: 20500
CUSTOMER	: CHARTER PRODUCTION CO.	LEASE	: K.U.
WELL	: B #1	TEST: 3	GEOLOGIST: S.
ELEVATION:		FORMATION:	KEYES
SECTION	: 11	TOWNSHIP	: 31S
RANGE	: 43W	STATE	: KS
GAUGE SN#:	10242	CLOCK	: 12
	COUNTY: MORTON		
	RANGE : 4100		

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	69.00	69.00
5.00	75.00	6.00
10.00	87.00	12.00
15.00	58.00	-29.00
20.00	50.00	-8.00
25.00	46.00	-4.00
30.00	52.00	6.00
35.00	52.00	0.00
40.00	54.00	2.00
45.00	56.00	2.00
50.00	58.00	2.00
55.00	60.00	2.00
60.00	63.00	3.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	69.00	69.00	21.00
6.00	81.00	12.00	11.00
9.00	93.00	12.00	7.67
12.00	154.00	61.00	6.00
15.00	223.00	69.00	5.00
18.00	341.00	118.00	4.33
21.00	518.00	177.00	3.86
24.00	605.00	87.00	3.50
27.00	674.00	69.00	3.22
30.00	730.00	56.00	3.00
33.00	766.00	36.00	2.82
36.00	793.00	27.00	2.67
39.00	818.00	25.00	2.54

PRESSURE TRANSIENT REPORT (CONTINUED)

INITIAL SHUT IN (CONTINUED)

Time (min)	Pressure	Delta P	Horner T
42.00	832.00	14.00	2.43
45.00	849.00	17.00	2.33
48.00	864.00	15.00	2.25
51.00	878.00	14.00	2.18
54.00	882.00	4.00	2.11
57.00	891.00	9.00	2.05
60.00	903.00	12.00	2.00

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	85.00	85.00
5.00	87.00	2.00
10.00	87.00	0.00
15.00	132.00	45.00
20.00	87.00	-45.00
25.00	89.00	2.00
30.00	91.00	2.00

FINAL SHUT IN

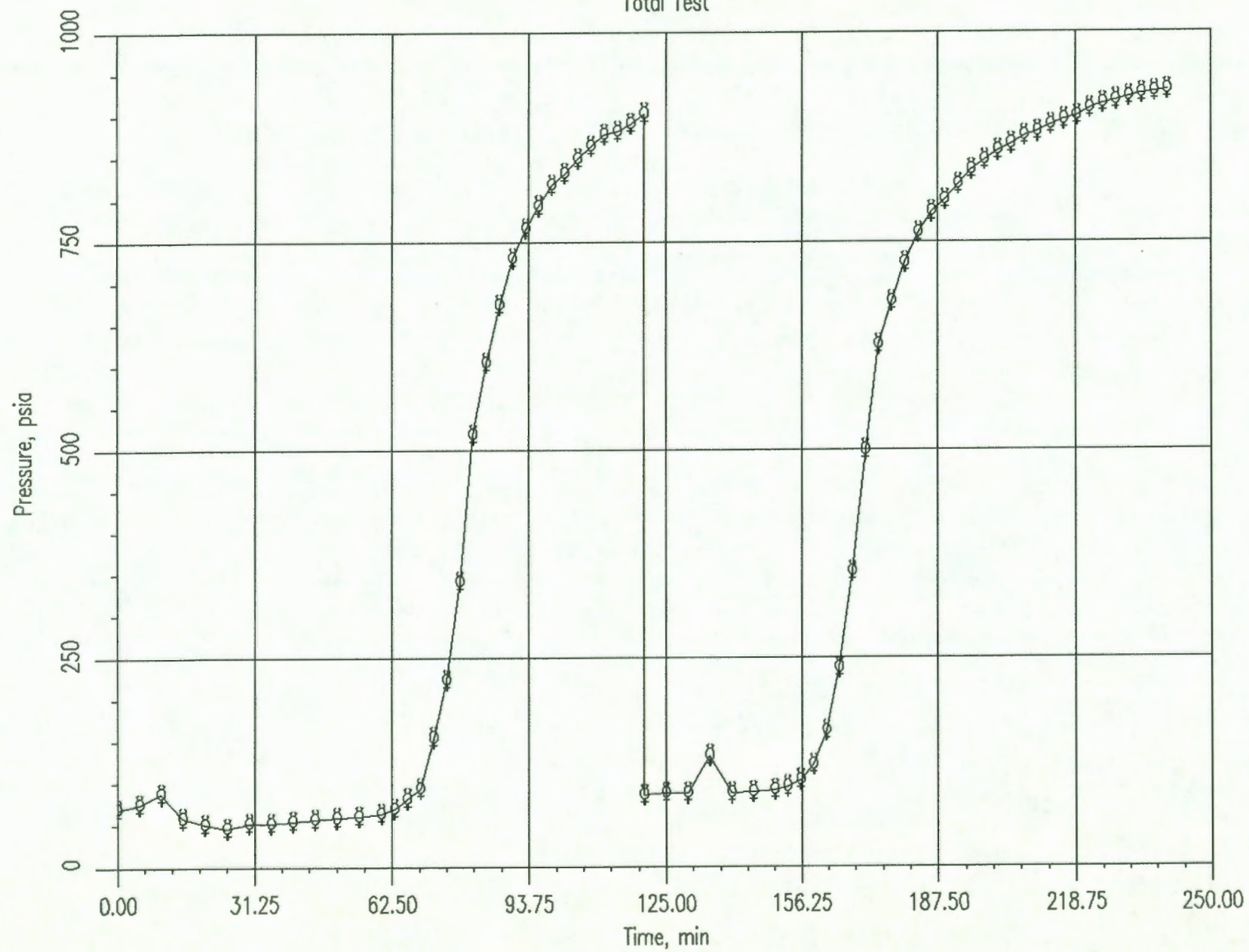
Time (min)	Pressure	Delta P	Horner T
3.00	95.00	95.00	11.00
6.00	103.00	8.00	6.00
9.00	121.00	18.00	4.33
12.00	162.00	41.00	3.50
15.00	237.00	75.00	3.00
18.00	353.00	116.00	2.67
21.00	499.00	146.00	2.43
24.00	626.00	127.00	2.25
27.00	678.00	52.00	2.11
30.00	724.00	46.00	2.00
33.00	760.00	36.00	1.91
36.00	785.00	25.00	1.83
39.00	799.00	14.00	1.77
42.00	818.00	19.00	1.71
45.00	835.00	17.00	1.67
48.00	847.00	12.00	1.63

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
51.00	858.00	11.00	1.59
54.00	866.00	8.00	1.56
57.00	876.00	10.00	1.53
60.00	880.00	4.00	1.50
63.00	889.00	9.00	1.48
66.00	895.00	6.00	1.45
69.00	899.00	4.00	1.43
72.00	908.00	9.00	1.42
75.00	914.00	6.00	1.40
78.00	918.00	4.00	1.38
81.00	922.00	4.00	1.37
84.00	926.00	4.00	1.36
87.00	928.00	2.00	1.34
90.00	930.00	2.00	1.33

Profile Plot
Total Test



HORNER ANALYSIS REPORT

GENERAL INFORMATION

DATE : 9-25-93	TICKET : 20500
CUSTOMER : CHARTER PRODUCTION CO.	LEASE : K.U.
WELL : B #1 TEST: 3	GEOLOGIST: S.
ELEVATION:	FORMATION: KEYES
SECTION : 11	TOWNSHIP : 31S
RANGE : 43W COUNTY: MORTON	STATE : KS
GAUGE SN#: 10242 RANGE : 4100	CLOCK : 12

Input Data

Porosity 0.100 Rw: 0.328 ft h: 7.000 ft

qo 6.8 STB GOR 146.2 SCF/STB

Pvt Data
 Evalutation Pressure : 903.0
 Evalutation Temperature: 134.0

Oil Grav 30.00 API	Gas Grav 0.65 API	Pb 903.00 PSIA
Bo 1.086 RBL/STB	Vis 1.000 cp	Ct 3.4936E-004 1/PSI

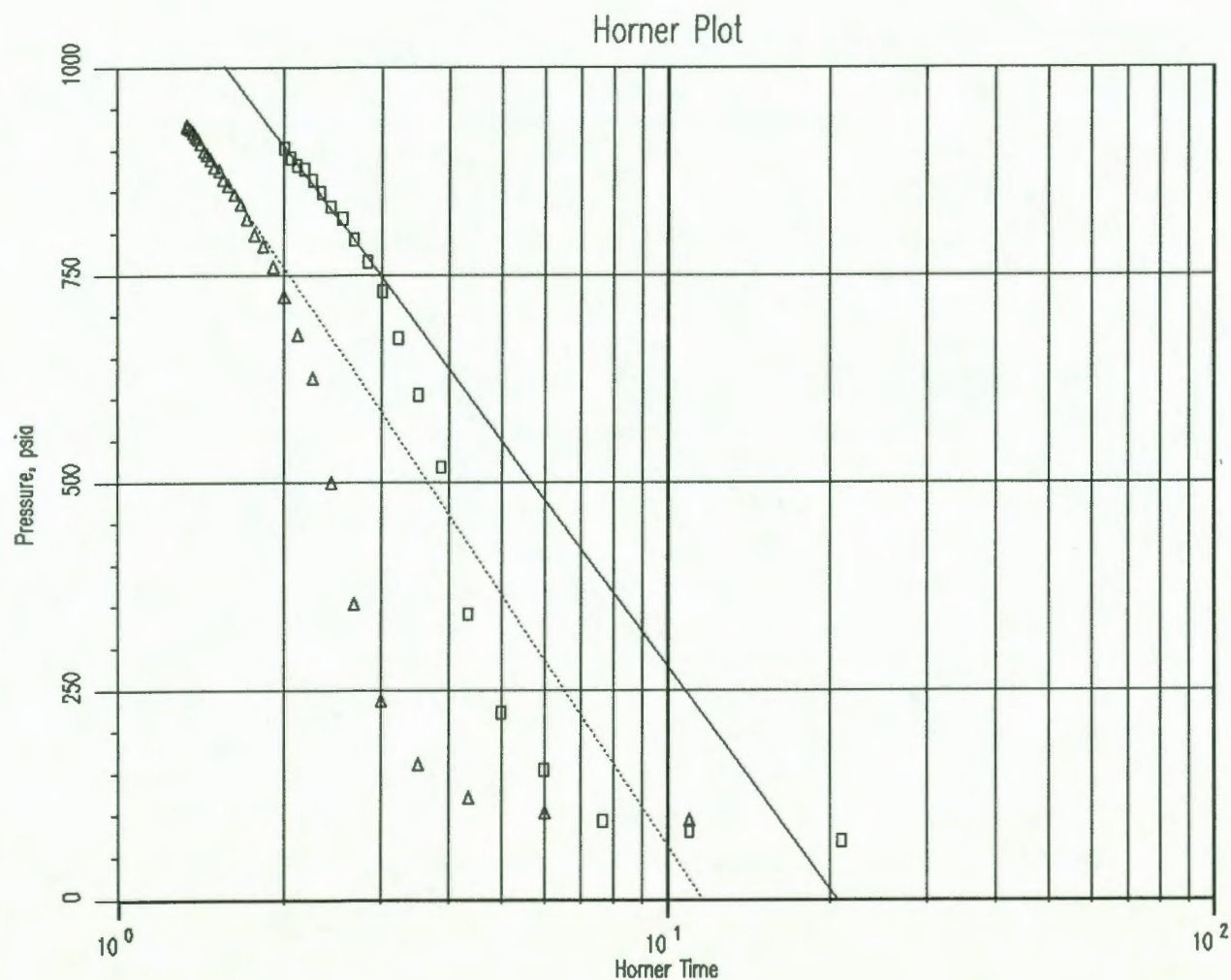
Horner Results

	Inital Shut-In	Final Shut-In
pseudo pressure time	1.00 hrs	0.50 hrs
slope	-896.19	-991.31
pstar	1175.75 psig	1056.59 psig
plhr	905.97 psig	882.03 psig
skin	-0.27	-0.18
permeability	0.47 md	0.43 md
transmisability	1.34 md-ft/cp	1.21 md-ft/cp
radius of investigation	2.40 ft	1.62 ft
Damage-Ratio	0.64 percent	0.56 percent
Drawdown Factor		-2.990 percent
Drawdown P*		10.135 percent

DATE 9-25-93
 CUSTOMER CHARTER PRODUCTION CO.
 WELL B #1
 ELEVATION 11
 SECTION 43W
 RANGE 10242
 GAUGE SN#

TEST 3
 COUNTY MORTON
 RANGE 4100

TICKET 20500
 LEASE K.U.
 GEOLOGIST S.
 FORMATION KEYES
 TOWNSHIP 31S
 STATE KS
 CLOCK 12



Result

	#1	#2
tp, hrs	1.00	0.50
Slope	-896.19	-991.31
Pstar, psig	1175.75	1056.59
P1hr, psig	905.97	882.03
Skin	-0.27	-0.18
k, md	0.47	0.43
kh/u, md-ft/cp	1.34	1.21
ri, ft	2.40	1.62
DR, %	0.64	0.56
Drawdown Factor, %		-2.990
Drawdown P*, %		10.135

— BUILD 1

..... BUILD 2



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET N^o 20500

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation _____ Formation Keyes Eff. Pay _____ Ft.

District Wichita City Date 9-25-93 Customer Order No. _____

COMPANY NAME Charter Prod Co

ADDRESS 224 E. Douglas Suite 400 Wichita KS 67202

LEASE AND WELL NO. K.Y. B #1 COUNTY Morton STATE KS Sec. 11 Twp. 31s Rge. 43W

Mail Invoice To Charter Prod. Co Address SA ME No. Copies Requested Reg

Mail Charts To " Address " No. Copies Requested Reg

Formation Test No. 3 Interval Tested From 5126 ft. to 5150 ft. Total Depth 5150 ft.

Packer Depth 5121 ft. Size 65/8 in. Packer Depth _____ ft. Size _____ in.

Packer Depth 5126 ft. Size 65/8 in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 5141 ft. Recorder Number 10242 Cap. 4100

Bottom Recorder Depth (Outside) 5144 ft. Recorder Number 13266 Cap. 4000

Below Straddle Recorder Depth _____ ft. Recorder Number _____ Cap. _____

Drilling Contractor Zenith #7 Drill Collar Length 508 I. D. 2 1/4 in.

Mud Type Chym. Viscosity 53 Weight Pipe Length _____ I. D. 3 in.

Weight 8.3 Water Loss 7.2 cc. Drill Pipe Length 4590 I. D. 3.8 in.

Chlorides 1000 P.P.M. Test Tool Length 28 ft. Tool Size 5 1/2 in.

Jars: Make WTC Serial Number 415 Anchor Length 24 ft. Size 5 1/2 in.

Did Well Flow? NO Reversed Out NO 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 x 1 1/4 in.

Blow WEAK - slowly built to 2" in bucket I.F.

Recovered 90 ft. of gas cut mud. 4% gas 96% mud

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Chlorides _____ P.P.M. Sample Jars used _____ Remarks: Total fluid 90'

Time On Location 8:00 AM Time Pick Up Tool 9:00 AM Time Off Location _____ AM

Time Set Packer(s) 11:15 AM Time Started Off Bottom 3:15 AM Maximum Temperature 134°F

Initial Hydrostatic Pressure _____ (A) 2560 P.S.I.

Initial Flow Period _____ Minutes 60 (B) 63 P.S.I. to (C) 65 P.S.I.

Initial Closed In Period _____ Minutes 60 (D) 889 P.S.I.

Final Flow Period _____ Minutes 30 (E) 83 P.S.I. to (F) 85 P.S.I.

Final Closed In Period _____ Minutes 90 (G) 922 P.S.I.

Final Hydrostatic Pressure _____ (H) 2558 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to the property or personnel of the one for whom a test is made or for any loss suffered or sustained directly or indirectly through the use of its equipment, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature]
Signature of Customer or his authorized representative

Western Representative [Signature]

FIELD INVOICE

Open Hole Test ☒ \$ ☒
Misrun \$ ☐
Straddle Test \$ ☐
Jars ☒ \$ ☒
Selective Zone \$ ☐
Safety Joint ☒ \$ ☒
Standby \$ ☐
Evaluation ☒ \$ ☒
Extra Packer \$ ☐
Circ. Sub. ☒ \$ ☒
Mileage \$ ☐
Fluid Sampler \$ ☐
Extra Charts \$ ☐
Insurance \$ ☐
Telecopier \$ ☐
TOTAL \$ ☐

Page 2
WESTERN TESTING CO., INC.
Pressure Data

Date 9-27-93 Test Ticket No. 20500
Recorder No. 13266 Capacity 4000 Location ~~7344~~ Ft.
Clock No. 0002 Elevation _____ Well Temperature 134°F °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud <u>2560</u> P.S.I.		Open Tool	<u>11:15</u> M	
B First Initial Flow Pressure <u>69</u> P.S.I.		First Flow Pressure	<u>60</u> Mins.	
C First Final Flow Pressure <u>63</u> P.S.I.		Initial Closed-in Pressure	<u>60</u> Mins.	
D Initial Closed-in Pressure <u>903</u> P.S.I.		Second Flow Pressure	<u>30</u> Mins.	
E Second Initial Flow Pressure <u>85</u> P.S.I.		Final Closed-in Pressure	<u>90</u> Mins.	
F Second Final Flow Pressure <u>91</u> P.S.I.				
G Final Closed-in Pressure <u>930</u> P.S.I.				
H Final Hydrostatic Mud <u>2558</u> P.S.I.				

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of _____ mins. and a		of _____ mins. and a		of _____ mins. and a		of _____ mins. and a	
final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 105		63		105		63 882	889
P 2 110		66		110		66 888	895
P 3 115		69		115		69 892	899
P 4 120		72		120		72 901	908
P 5 125		75		125		75 906	914
P 6 130		78		130		78 911	918
P 7 135		81		135		81 913	920
P 8 140		84		140		84 918	926
P 9 145		87		145		87 921	928
P10 150		90		150		90 922	930
P11 155		93		155		93	
P12 160		96		160		96	
P13 165		99		165		99	
P14 170		102		170		102	
P15 175		105		175		105	
P16 180		108		180		108	
P17 185		111		185		111	
P18 190		114		190		114	
P19 195		117		195		117	
P20 200		120		200		120	

Page 1
WESTERN TESTING CO., INC.
Pressure Data

Date 9-27-93 Test Ticket No. 20500
Recorder No. 13266 Capacity 4000 Location _____ Ft.
Clock No. 0002 Elevation _____ Well Temperature 1340F °P
Point _____ Pressure _____ Time Given _____ Time Computed _____
A Initial Hydrostatic Mod. 2560 PSI Open Tool _____
B First Initial Flow Pressure 69 PSI First Flow Pressure _____ Min. _____ Min.
C First Final Flow Pressure 63 PSI Initial Closed-In Pressure _____ Min. _____ Min.
D Initial Closed-In Pressure 903 PSI Second Flow Pressure _____ Min. _____ Min.
E Second Initial Flow Pressure 85 PSI Final Closed-In Pressure _____ Min. _____ Min.
F Second Final Flow Pressure 91 PSI
G Final Closed-In Pressure 930 PSI
H Final Hydrostatic Mod. 2558 PSI

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Loc.		Breakdown: _____ Loc.		Breakdown: _____ Loc.		Breakdown: _____ Loc.	
of <u>5</u> min. and a		of <u>3</u> min. and a		of <u>5</u> min. and a		of <u>3</u> min. and a	
base loc. of <u>0</u> Min.		base loc. of <u>0</u> Min.		base loc. of <u>0</u> Min.		base loc. of <u>0</u> Min.	
Point Min.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1	<u>068</u> 76 <u>69</u>	0	62 <u>63</u>	<u>084</u> <u>85</u>	0	<u>90</u> <u>91</u>	
P 2	<u>574</u> 87 <u>75</u>	3	68 <u>69</u>	<u>586</u> <u>87</u>	3	<u>94</u> <u>95</u>	
P 3	<u>1087</u> 88 <u>87</u>	6	<u>80</u> <u>81</u>	<u>1087</u> <u>87</u>	6	<u>103</u> <u>103</u>	
P 4	<u>1558</u> <u>58</u>	9	<u>92</u> <u>93</u>	<u>15131</u> <u>132</u>	9	<u>120</u> <u>121</u>	
P 5	<u>2050</u> <u>50</u>	12	<u>153</u> <u>154</u>	<u>2098</u> <u>99</u>	12	<u>160</u> <u>162</u>	
P 6	<u>2546</u> <u>46</u>	15	<u>220</u> <u>223</u>	<u>2588</u> <u>89</u>	15	<u>235</u> <u>237</u>	
P 7	<u>308</u> <u>52</u>	18	<u>337</u> <u>341</u>	<u>3090</u> <u>91</u>	18	<u>348</u> <u>353</u>	
P 8	<u>3553</u> <u>52</u>	21	<u>510</u> <u>518</u>	<u>35</u> 100	21	<u>492</u> <u>499</u>	
P 9	<u>4056</u> <u>54</u>	24	<u>548</u> <u>605</u>	<u>40</u> 100	24	<u>618</u> <u>626</u>	
P 10	<u>4556</u> <u>56</u>	27	<u>667</u> <u>674</u>	<u>45</u> 100	27	<u>670</u> <u>678</u>	
P 11	<u>5052</u> <u>52</u>	30	<u>722</u> <u>730</u>	<u>50</u>	30	<u>716</u> <u>724</u>	
P 12	<u>5558</u> <u>58</u>	33	<u>758</u> <u>766</u>	<u>55</u>	33	<u>752</u> <u>760</u>	
P 13	<u>6062</u> <u>63</u>	36	<u>786</u> <u>793</u>	<u>60</u>	36	<u>778</u> <u>785</u>	
P 14	<u>65</u>	39	<u>810</u> <u>818</u>	<u>65</u>	39	<u>793</u> <u>799</u>	
P 15	<u>70</u>	42	<u>825</u> <u>832</u>	<u>70</u>	42	<u>810</u> <u>818</u>	
P 16	<u>75</u>	45	<u>842</u> <u>849</u>	<u>75</u>	45	<u>828</u> <u>835</u>	
P 17	<u>80</u>	48	<u>856</u> <u>864</u>	<u>80</u>	48	<u>840</u> <u>847</u>	
P 18	<u>85</u>	51	<u>870</u> <u>878</u>	<u>85</u>	51	<u>850</u> <u>858</u>	
P 19	<u>90</u>	54	<u>875</u> <u>882</u>	<u>90</u>	54	<u>858</u> <u>866</u>	
P 20	<u>95</u>	57	<u>884</u> <u>891</u>	<u>95</u>	57	<u>868</u> <u>876</u>	
100		60	<u>891</u> <u>903</u>	100		<u>873</u> <u>880</u>	