CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	1
Well Name & Number	Leikam #1	Zone Tested	Lansing/Ks. City
Company Address	125 N. Market Suite 950 Wichita, Ks.	Date	7/4/85
Company Rep.	Bob Buffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB
Location: Sec. 13 Twp. 12s Rge. 17w Co. Ellis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI

Recorder Depth 3390 Clock # 25582

(A) Initial Hydrostatic Mud 1864 PSI

(B) First Initial Flow Pressure 48 PSI

(C) First Final Flow Pressure 58 PSI

(D) Initial Shut-in Pressure 336 PSI

(E) Second Initial Flow Pressure 67 PSI

(F) Second Final Flow Pressure 77 PSI

(G) Final Shut-in Pressure 307 PSI

(H) Final Hydrostatic Mud 1813 PSI

Temperature 104

Mud Weight 9.9 Viscosity 39

Fluid Loss 16.4

Interval Tested 3334-3391

Anchor Length 57

Top Packer Depth 3329

Bottom Packer Depth 3334

Total Depth 3391

Drill Pipe Size 4½ XH

Wt. Pipe I. D. Ft. Run

Recovery-Total Feet 15

Recovered 15 Feet Of MUd.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 13223 Type AK-1 Range 4150 PSI

Recorder Depth 3385 Clock # 25830

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 30 Mins.

Flow Period 30 Mins.

Final Shut-in 30 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 3:36 PM

Blow Remarks 1st open: Weak surface blow, died in 10 minutes.

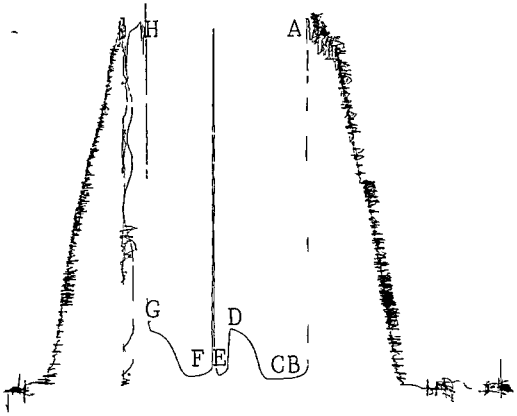
2nd open: No blow, flushed tool, no blow.

Oil specks in tool.

Drill Collars I.D. 2.25 Ft. run 120.

Price of Job $625.00

MILLER PRINTERS, INC.
Great Bend, Kansas


H
A
G
D
F
E
CB

CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	2
Well Name & Number	Leikam #1	Zone Tested	Lansing/Ks. City
Company Address	125 N. Market Suite 950 Wichita, Ks.	Date	7/5/585
Company Rep.	Bob Buffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB
Location: Sec. 13 Twp. 12s Rge. 17w Co. Ellis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI

Recorder Depth 3419 Clock # 25562

(A) Initial Hydrostatic Mud 1843 PSI

(B) First Initial Flow Pressure 71 PSI

(C) First Final Flow Pressure 96 PSI

(D) Initial Shut-in Pressure 221 PSI

(E) Second Initial Flow Pressure 106 PSI

(F) Second Final Flow Pressure 115 PSI

(G) Final Shut-in Pressure 211 PSI

(H) Final Hydrostatic Mud 1785 PSI

Temperature 107

Mud Weight 9.9 Viscosity 39

Fluid Loss 16.4

Interval Tested 3390-3420

Anchor Length 30

Top Packer Depth 3385

Bottom Packer Depth 3390

Total Depth 3420

Drill Pipe Size 4½ XH

Wt. Pipe I. D. Ft. Run

Recovery-Total Feet 175

Recovered 120 Feet Of Gas in pipe.

Recovered 5 Feet Of Slight oil specked muddy water.

Recovered 175 Feet Of Muddy water.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recorder No. 13223 Type AK-1 Range 4150 PSI

Recorder Depth 3414 Clock # 25830

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 30 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 5:23 AM

Blow Remarks 1st open: 3/4 inch blow, building to 11 inches.

2nd open: ¼ inch blow, building to 4 inches.

Well Chlorides: 64,000 ppm.

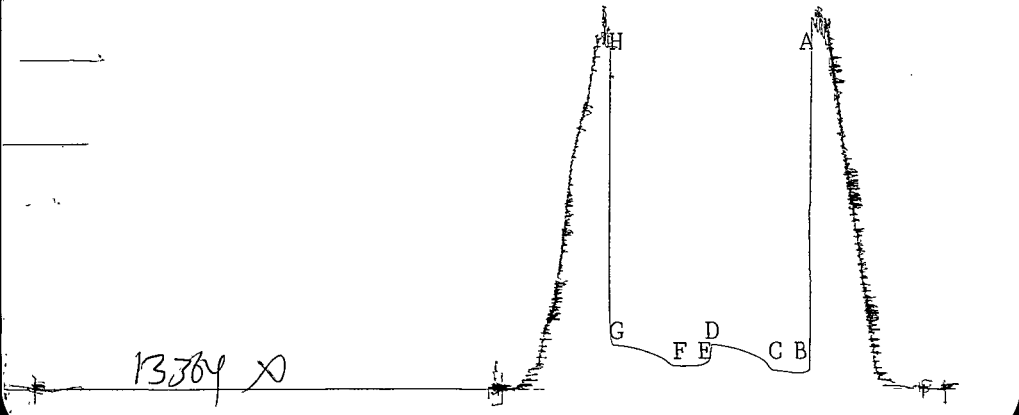
Recovery Chlorides; 90,000 ppm.

Resistivity .074 ohms @ 80°F.

Drill Collars I.D. 2.25 Ft. run 120.

Extra Equipment Price of Job $625.00-

MILLER PRINTERS, INC.
Great Bend, Kansas



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CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	3
Well Name & Number	Leikam #1	Zone Tested	Lansing/Ks. City
Company Address	125 N. Market Suite 950 Wichita, Ks.	Date	7/6/85
Company Rep.	Bob Buffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB
Location: Sec. 13 Twp. 12s Rge. 17w Co. ELLis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI
Recorder Depth 3520 Clock # 25562

(A) Initial Hydrostatic Mud 1911 PSI
(B) First Initial Flow Pressure 125 PSI
(C) First Final Flow Pressure 144 PSI
(D) Initial Shut-in Pressure 529 PSI
(E) Second Initial Flow Pressure 163 PSI
(F) Second Final Flow Pressure 173 PSI
(G) Final Shut-in Pressure 519 PSI
(H) Final Hydrostatic Mud 1805 PSI

Temperature 109
Mud Weight 10.0 Viscosity 41
Fluid Loss 14.2
Interval Tested 3444-3521
Anchor Length 77
Top Packer Depth 3439
Bottom Packer Depth 3444
Total Depth 3521
Drill Pipe Size 4½ XH
Wt. Pipe I. D. Ft. Run
Recovery-Total Feet 175

Recorder No. 13223 Type AK-1 Range 4150 PSI
Recorder Depth 3515 Clock # 25830

Tool Open Before I.S.I. 30 Mins.
Initial Shut-in 45 Mins.
Flow Period 30 Mins.
Final Shut-in 45 Mins.
Top Choke Size 1" Hole Size 7 7/8"
Bottom Choke Size 3/4" Rubber Size 6 3/4"
Tool Open @ 1;49 AM

Blow Remarks 1st open: ¼ inch building blow to 3 inches.
2nd open: Surface blow, building to 1 inch.

Well Chlorides: 61,000 ppm.
Recovery Chlorides: 90,000 ppm.
Resistivity .09 ohms @ 65°F.

Drill Collars I.D. 2.25 Ft. run 120.

Recovered 5 Feet Of Gas in pipe.
Recovered 55 Feet Of Gassy heavy oil cut watery mud:25% gas,25% oil,5% water,45%mud.
Recovered 120 Feet Of Gassy muddy specked water: 35% gas, 5% oil & 60% water.
Recovered 119 Feet Of Gas free fluid.
Recovered Feet Of
Recovered Feet Of

Extra Equipment Price of Job $625.00

MILLER PRINTERS, INC.
Great Bend, Kansas

INITIAL SHUT-IN

RECORDER NO: 13364 DEPTH: 3521 FT.
INITIAL FLOW TIME (T): 30 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
0	0.000	133.5
5	0.845	197.8
10	0.602	425.5
15	0.477	501.3
20	0.398	517.7
25	0.342	525.4
30	0.301	529.2
35	0.269	531.1
40	0.243	533.0
45	0.222	535.0

FINAL SHUT-IN

RECORDER NO: 13364 DEPTH: 3521 FT.
TOTAL FLOW TIME: 60 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
0	0.000	161.4
5	1.114	161.4
10	0.845	169.0
15	0.699	278.5
20	0.602	461.0
25	0.531	494.6
30	0.477	507.1
35	0.434	513.8
40	0.398	516.7
45	0.368	517.7

CHENEY TESTING CO, INC.
CALCULATION OF FORMATION CHARACTERISTICS
FROM DST DATA

****

FOR: A. SCOTT RITCHIE
LEIKAM #1 DST # 3
SEC 13-12S-17W FORMATION: LANSING
ELLIS COUNTY KANSAS ELEVATION: 2069 KB

****

TEST PARAMETERS

TEST INTERVAL: 3444 - 3521 EST PAY: 11
TIME INTERVAL: 30 - 45 - 30 - 45 VISCOSITY OF FLUID: 2
INITIAL FLOW PRESS: 122.9- 133.5 HOLE SIZE: 7.875
FINAL FLOW PRESS: 157.5- 161.4 D.C. CAPACITY:0.00492
SHUT-IN PRESS(I-F): 535.0- 517.7 W.P. CAPACITY:0.00000
BOTTOM HOLE TEMPERATURE: 109 D.P. CAPACITY:0.01402
TOTAL FEET OF RECOVERY: 175 TOTAL BARRELS RECOVERY: 1.3610

****

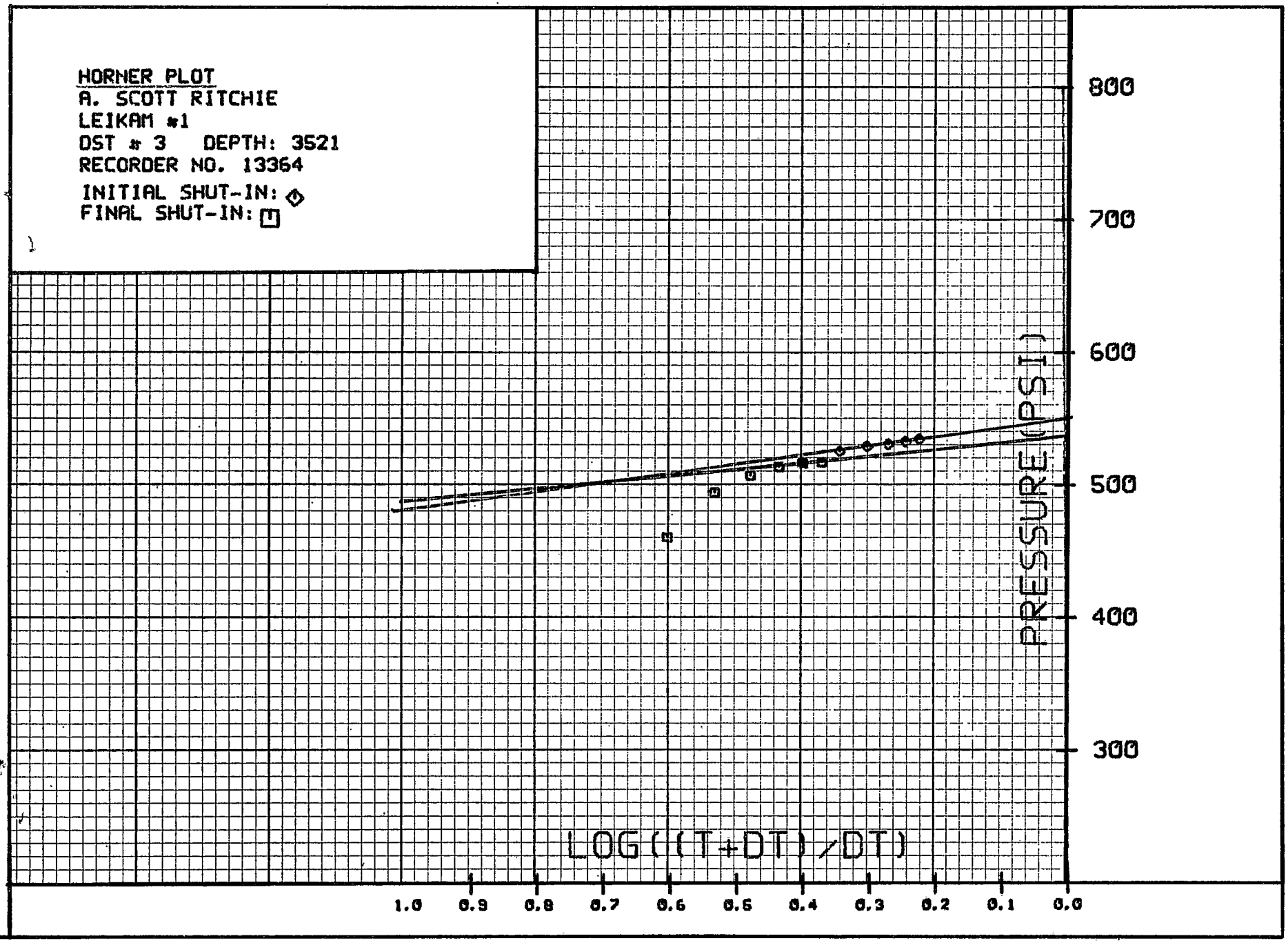
EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 550
SLOPE (PSI-CYCLE): 70 POINTS USED: 5

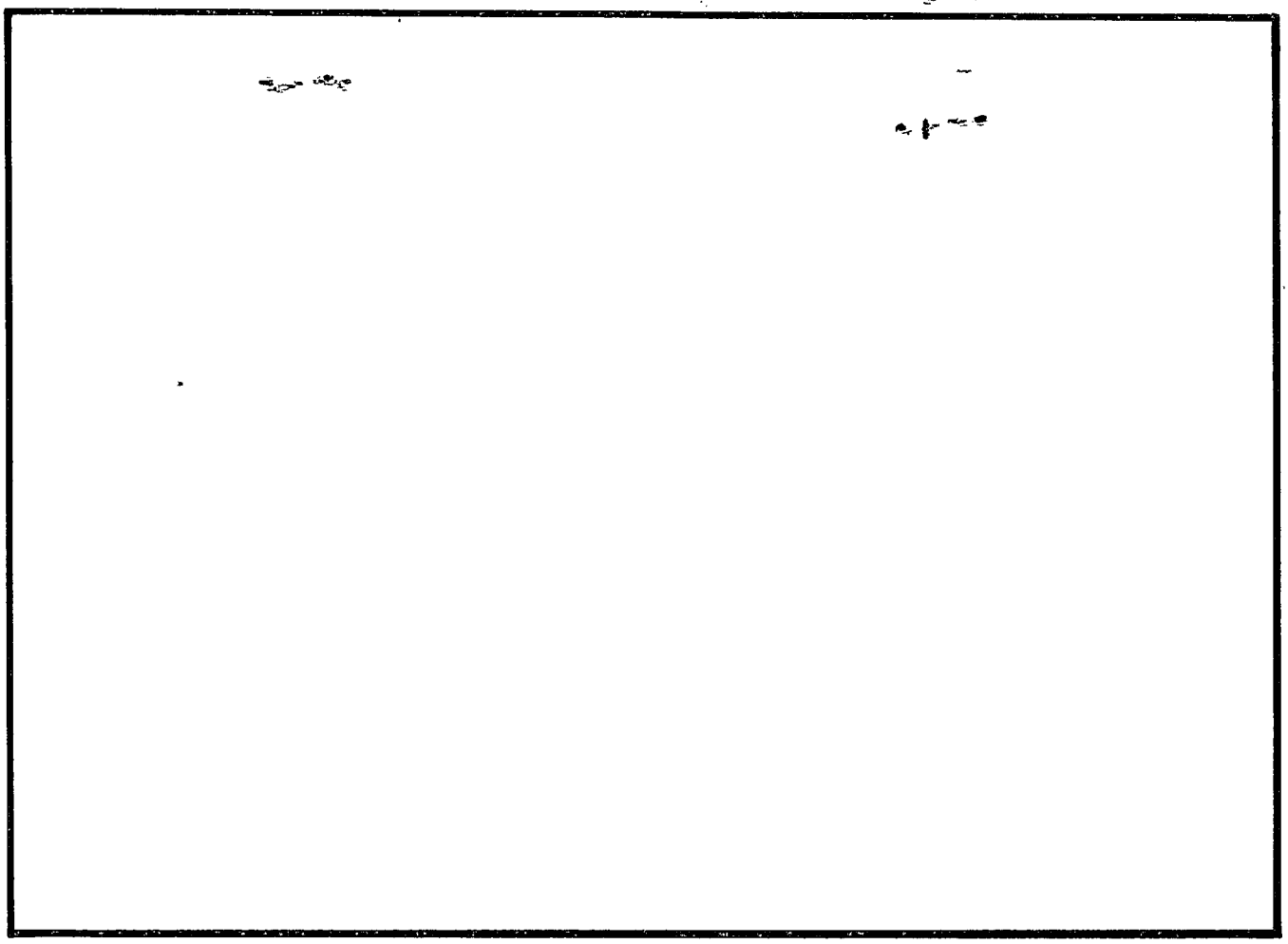
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 537
SLOPE (PSI-CYCLE): 48 POINTS USED: 3

****

CALCULATIONS

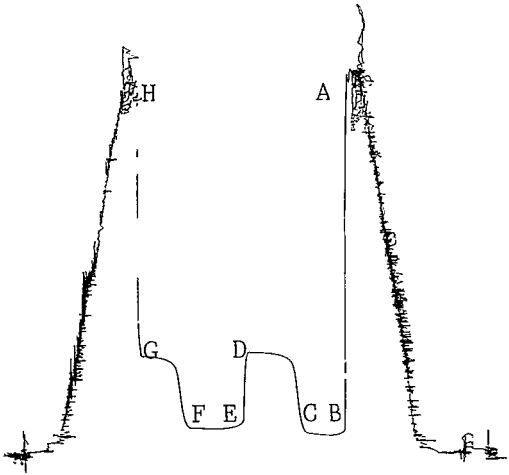
AVERAGE PRODUCTION RATE (B/D)	: 32.66
TRANSMISSIBILITY (MD-FT/CP)	: 110.65
PERMEABILITY (MD)	: 20.12
PRODUCTIVITY INDEX (B/D/PSI)	: 0.1250
DAMAGE RATIO	: 1.432
APPROXIMATE RADIUS OF INVESTIGATION (FT)	: 34.7
DRAWDOWN FACTOR (%)	: 2.364
POTENTIOMETRIC SURFACE (FT)	:-206.70


HORNER PLOT
A. SCOTT RITCHIE
LEIKAM #1
DST # 3 DEPTH: 3521
RECORDER NO. 13364
INITIAL SHUT-IN:
FINAL SHUT-IN:
800
700
600
500
400
300
PRESSURE (psi)
LOG((T+DT)/DT)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1911	1906	PSI
(B)	First Initial Flow Pressure	125	122.9	PSI
(C)	First Final Flow Pressure	144	133.5	PSI
(D)	Initial Closed-in Pressure	529	535.0	PSI
(E)	Second Initial Flow Pressure	163	157.5	PSI
(F)	Second Final Flow Pressure	173	161.4	PSI
(G)	Final Closed-in Pressure	519	517.7	PSI
(H)	Final Hydrostatic Mud	1805	1800	PSI



13364

CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	4
Well Name & Number	Leikam #1	Zone Tested	Lansing/Ks. City
Company Address	125 N. Market Suite 950 Withita, Ks.	Date	7/6/85
Company Rep.	Bob BUffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB
Location: Sec. 13 Twp. 12s Rge. 17w Co. Ellis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI

Recorder Depth 3565 Clock # 25562

(A) Initial Hydrostatic Mud 1978 PSI

(B) First Initial Flow Pressure 61 PSI

(C) First Final Flow Pressure 77 PSI

(D) Initial Shut-in Pressure 125 PSI

(E) Second Initial Flow Pressure 86 PSI

(F) Second Final Flow Pressure 86 PSI

(G) Final Shut-in Pressure 125 PSI

(H) Final Hydrostatic Mud 1877 PSI

Temperature 108

Mud Weight 9.9 Viscosity 40

Fluid Loss 13.6

Interval Tested 3518-3566

Anchor Length 48

Top Packer Depth 3513

Bottom Packer Depth 3518

Total Depth 3566

Drill Pipe Size 4½ XH

Wt. Pipe I. D. Ft. Run

Recovery-Total Feet 5

Recovered 5 Feet Of Mud.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 13223 Type AK-1 Range 4150 PSI

Recorder Depth 3560 Clock # 25830

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 30 Mins.

Flow Period 30 Mins.

Final Shut-in 30 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 6:10 PM

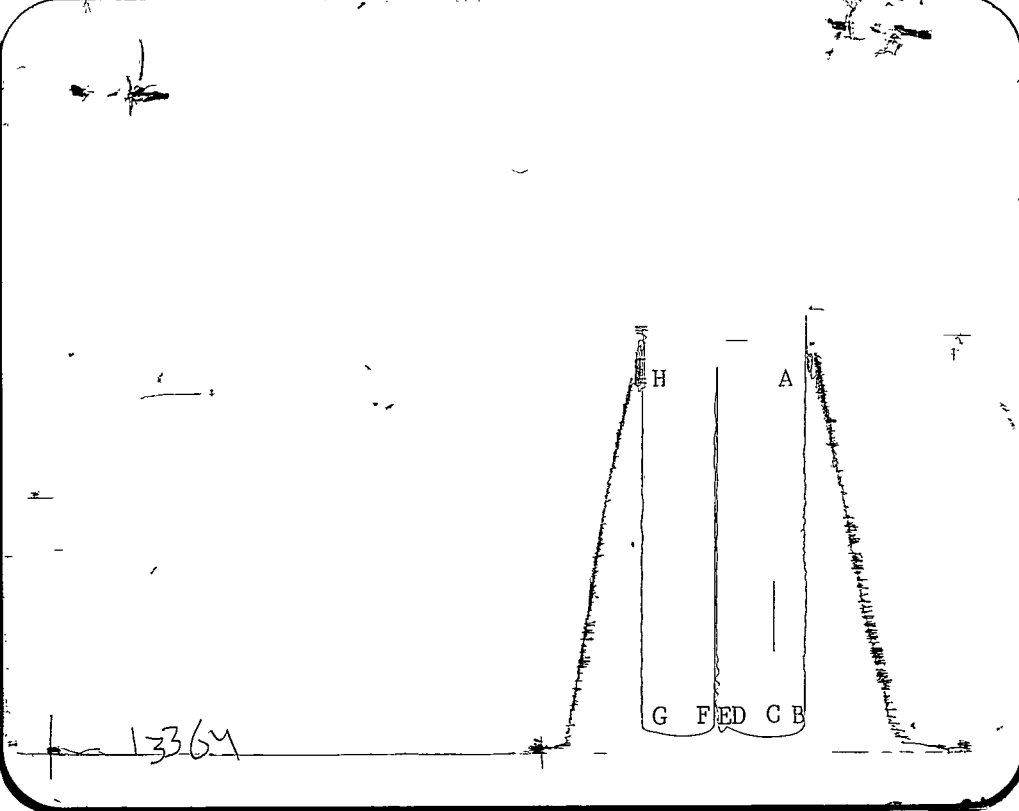
Blow Remarks 1st open: ¼ inch blow, in 25 minutes.

2nd open: No blow, flushed tool, no blow.

Drill Collars I.D. 2.25 Ft. run 120.

Price of Job $625.00

MILLER PRINTERS, INC.
Great Bend, Kansas


H
A
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1364

CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	5
Well Name & Number	Leikam #1	Zone Tested	Arbuckle
Company Address	125 N. Market Suite 950 Wichita, Ks.	Date	7/7/85
Company Rep.	Bob Buffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB
Location: Sec. 13 Twp. 12s Rge. 17w Co. Ellis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI
Recorder Depth 3603 Clock # 25562
(A) Initial Hydrostatic Mud 1998 PSI
(B) First Initial Flow Pressure 67 PSI
(C) First Final Flow Pressure 77 PSI
(D) Initial Shut-in Pressure 875 PSI
(E) Second Initial Flow Pressure 96 PSI
(F) Second Final Flow Pressure 106 PSI
(G) Final Shut-in Pressure 856 PSI
(H) Final Hydrostatic Mud 1920 PSI
Temperature 109
Mud Weight 9.9 Viscosity 40
Fluid Loss 13.6
Interval Tested 3558-3604
Anchor Length 46
Top Packer Depth 3553
Bottom Packer Depth 3558
Total Depth 3604
Drill Pipe Size 4½ XH
Wt. Pipe I. D. Ft. Run
Recovery-Total Feet 60
Recovered 60 Feet Of Oil cut mud: 5% gas, 15% oil & 80% mud.
Recovered Feet Of
Recovered Feet Of
Recovered Feet Of
Recovered Feet Of
Recovered Feet Of
Extra Equipment

Recorder No. 13223 Type AK-1 Range 4150 PSI
Recorder Depth 3598 Clock # 25830
Tool Open Before I.S.I. 30 Mins.
Initial Shut-in 45 Mins.
Flow Period 30 Mins.
Final Shut-in 45 Mins.
Top Choke Size 1" Hole Size 7 7/8"
Bottom Choke Size 3/4" Rubber Size 6 3/4"
Tool Open @ 7;59 AM
Blow Remarks 1st open; ¼ inch blow, building to 3/4 inch.
2nd open: No blow, flushed tool, 1/8 inch blow, died in 15 minutes.

Drill Collars I.D. 2.25 Ft. run 120.

Price of Job ~~$625.00~~

MILLER PRINTERS, INC.
Great Bend, Kansas

INITIAL SHUT-IN

RECORDER NO: 13364 DEPTH: 3604 FT.
INITIAL FLOW TIME (T): 30 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
0	0.000	74.9
5	0.845	99.9
10	0.602	285.2
15	0.477	351.5
20	0.398	513.8
25	0.342	646.4
30	0.301	727.0
35	0.269	793.3
40	0.243	846.1
45	0.222	875.9

FINAL SHUT-IN

RECORDER NO: 13364 DEPTH: 3604 FT.
TOTAL FLOW TIME: 60 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)
0	0.000	98.9
5	1.114	165.2
10	0.845	307.3
15	0.699	456.2
20	0.602	587.8
25	0.531	674.2
30	0.477	735.7
35	0.434	787.5
40	0.398	826.0
45	0.368	851.9

CHENEY TESTING CO, INC.
CALCULATION OF FORMATION CHARACTERISTICS
FROM DST DATA

****

FOR: A. SCOTT RITCHIE
LEIKAM #1
SEC 13-12S-17W
ELLIS COUNTY KANSAS

DST # 5
FORMATION: ARBUCKLE
ELEVATION: 2069 KB

****

TEST PARAMETERS

TEST INTERVAL: 3558 - 3604
TIME INTERVAL: 30 - 45 - 30 - 45
INITIAL FLOW PRESS: 73.0- 74.9
FINAL FLOW PRESS: 101.8- 101.8
SHUT-IN PRESS(I-F): 875.9- 851.9
BOTTOM HOLE TEMPERATURE: 109
TOTAL FEET OF RECOVERY: 60

EST PAY: 10
VISCOSITY OF FLUID: 1.5
HOLE SIZE: 7.875
D.C. CAPACITY:0.00492
W.P. CAPACITY:0.00000
D.P. CAPACITY:0.01402
TOTAL BARRELS RECOVERY: 0.2949

****

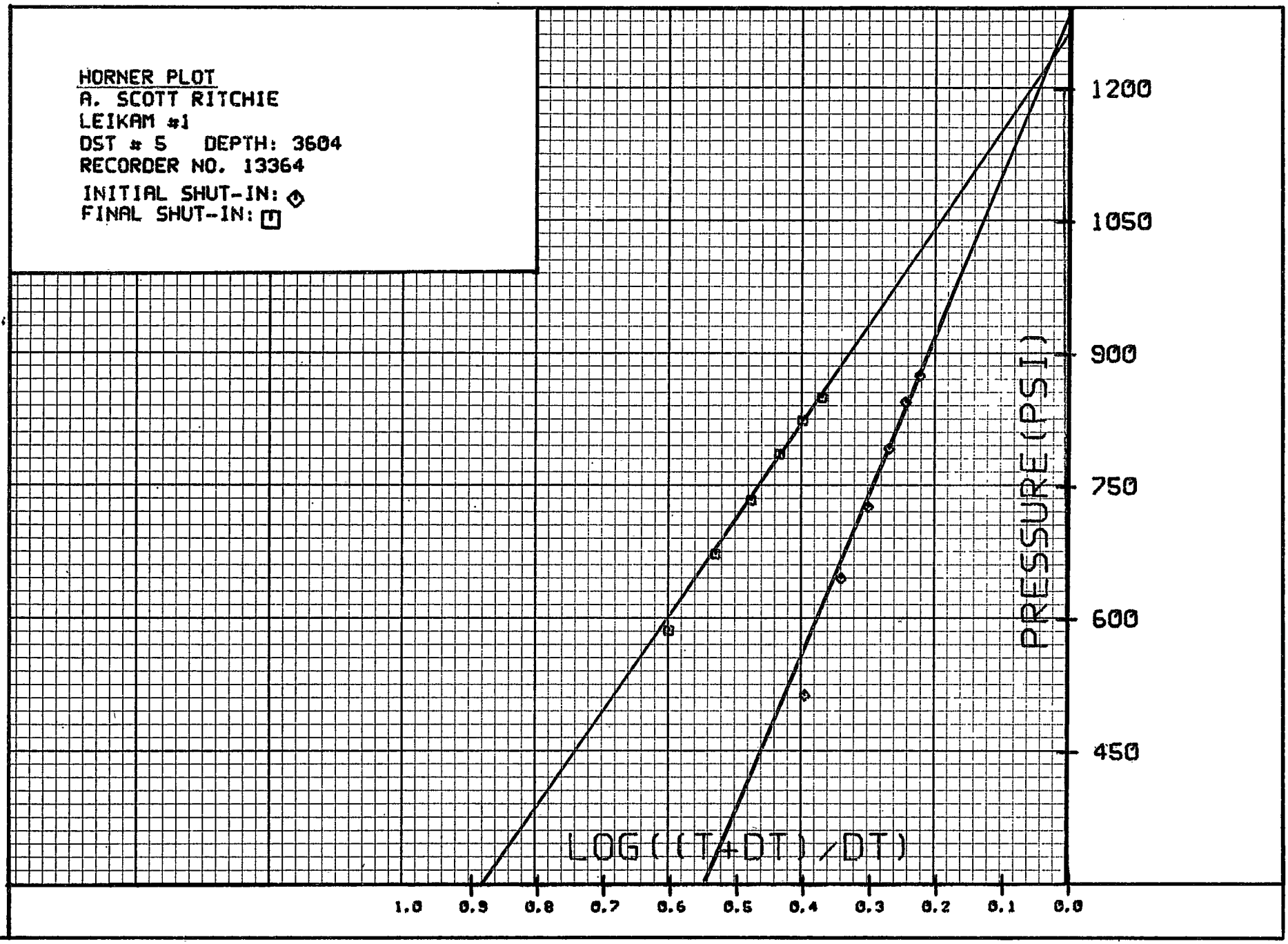
EXTRAPOLATED INITIAL SHUT-IN PRESSURE (PSI): 1275
SLOPE (PSI-CYCLE): 1800 POINTS USED: 3

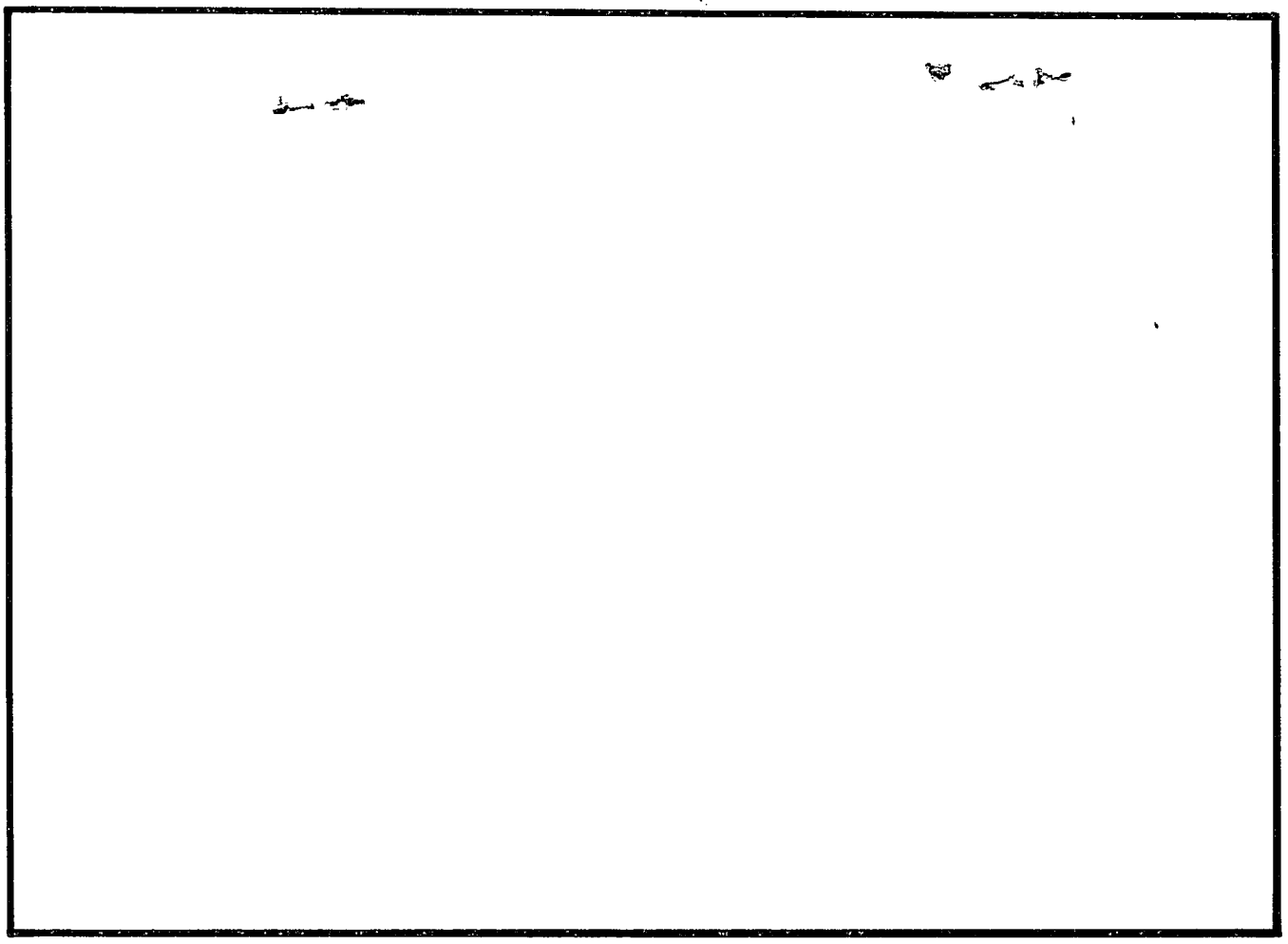
EXTRAPOLATED FINAL SHUT-IN PRESSURE (PSI): 1260
SLOPE (PSI-CYCLE): 1092 POINTS USED: 5

****

CALCULATIONS

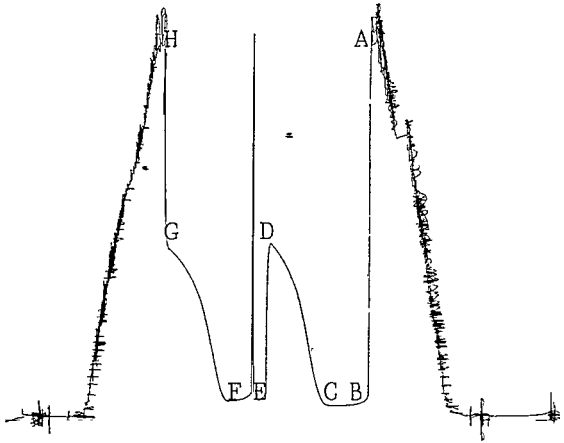
AVERAGE PRODUCTION RATE (B/D)	7.08
TRANSMISSIBILITY (MD-FT/CP)	1.05
PERMEABILITY (MD)	0.16
PRODUCTIVITY INDEX (B/D/PSI)	0.0012
DAMAGE RATIO	0.194
APPROXIMATE RADIUS OF INVESTIGATION (FT)	3.1
DRAWDOWN FACTOR (%)	1.176
POTENTIOMETRIC SURFACE (FT)	1386.94


HORNER PLOT
A. SCOTT RITCHIE
LEIKAM #1
DST # 5 DEPTH: 3604
RECORDER NO. 13364
INITIAL SHUT-IN:
FINAL SHUT-IN:
1200
1050
900
750
600
450
PRESSURE (PSI)
LOG((T+DT)/DT)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	1998	1993	PSI
(B)	First Initial Flow Pressure	67	73.0	PSI
(C)	First Final Flow Pressure	77	74.9	PSI
(D)	Initial Closed-in Pressure	875	875.9	PSI
(E)	Second Initial Flow Pressure	96	101.8	PSI
(F)	Second Final Flow Pressure	106	101.8	PSI
(G)	Final Closed-in Pressure	856	851.9	PSI
(H)	Final Hydrostatic Mud	1920	1915	PSI



13364 V

CHENEY TESTING COMPANY, INC.

P. O. Box 367 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	A. Scott Ritchie	Test No.	6
Well Name & Number	Leikam #1	Zone Tested	Arbuckle
Company Address	125 N. Market Suite 950 Wichita, Ks.	Date	7/7/85
Company Rep.	Bob Buffo	Tester	Paul Simpson
Contractor	Murfin Drilling Company	Elevation	2069 KB.
Location: Sec. 13 Twp. 12s Rge. 17w Co. Ellis State Ks.		Est. Feet of Pay	

Recorder No. 13364 Type AK-1 Range 3825 PSI

Recorder Depth 3618 Clock # 25562

(A) Initial Hydrostatic Mud 2007 PSI

(B) First Initial Flow Pressure 86 PSI

(C) First Final Flow Pressure 106 PSI

(D) Initial Shut-in Pressure 1114 PSI

(E) Second Initial Flow Pressure 125 PSI

(F) Second Final Flow Pressure 134 PSI

(G) Final Shut-in Pressure 1104 PSI

(H) Final Hydrostatic Mud 1872 PSI

Temperature 110

Mud Weight 10.0 Viscosity 46

Fluid Loss 14.8

Interval Tested 3603-3619

Anchor Length 16

Top Packer Depth 3598

Bottom Packer Depth 3603

Total Depth 3619

Drill Pipe Size 4½ XH

Wt. Pipe I. D. Ft. Run

Recovery-Total Feet 220

Recovered 220 Feet Of Muddy specked water.

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Extra Equipment

Recorder No. 13223 Type AK-1 Range 4150 PSI

Recorder Depth 3613 Clock # 25830

Tool Open Before I.S.I. 30 Mins.

Initial Shut-in 45 Mins.

Flow Period 30 Mins.

Final Shut-in 45 Mins.

Top Choke Size 1" Hole Size 7 7/8"

Bottom Choke Size 3/4" Rubber Size 6 3/4"

Tool Open @ 11:56 PM

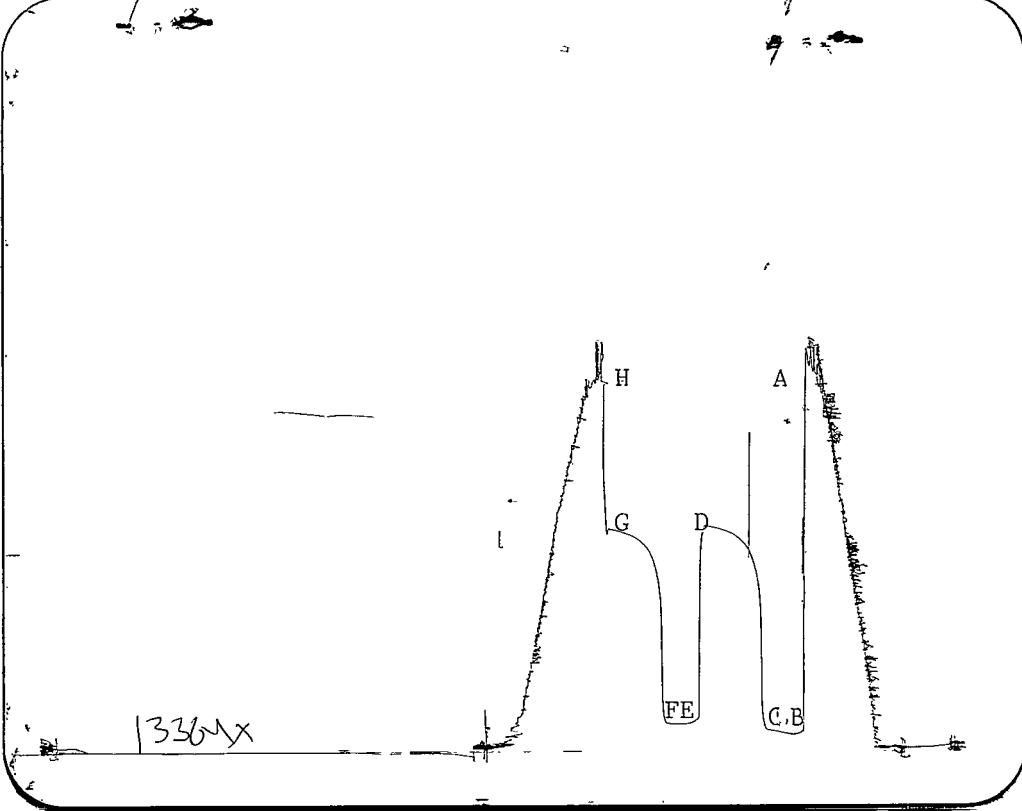
Blow Remarks 1st open: ½ inch building to 6 inches.

2nd open: ¼ inch blow, building to 2 inches.

Drill Collars I.D. 2.25 Ft. run 120.

Price of Job $625.00

MILLER PRINTERS, INC.
Great Bend, Kansas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