CHENEY TESTING COMPANY

P. O. BOX 3 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	J. O. Farmer Inc.	Test No.	1
Well Name & Number	Klenk #9	Zone Tested	
Company Address	Russell, Kansas	Date	3-22-83
Comp. Rep.	Sam Farmer	Tester	Gary Hartwell
Contractor	Co. Tools	Elevation	2398 K.B.
Location: Sec. 18 Twp. 9 Rge. 23 Co. Graham State Kansas		Est. Feet of Pay	

Recorder No. 13222 Type AK-1 Range 4000 PSI

Recorder Depth 3864

(A) Initial Hydrostatic Mud 2102 PSI

(B) First Initial Flow Pressure 61 PSI

(C) First Final Flow Pressure 102 PSI

(D) Initial Closed-in Pressure 204 PSI

(E) Second Initial Flow Pressure 102 PSI

(F) Second Final Flow Pressure 122 PSI

(G) Final Closed-in Pressure 204 PSI

(H) Final Hydrostatic Mud 2082 PSI

Temperature 110

Mud Weight 10 Viscosity 38

Fluid Loss 8.2

Interval Tested 3845-3870

Anchor Length 25

Top Packer Depth 3840

Bottom Packer Depth 3845

Total Depth 3870

Drill Pipe Size 4½ X.H.

Wt. Pipe I. D. 3.25 Ft. Run 956

Recovery—Total Feet 290

Recovered 1860 Feet Of Gas in Pipe

Recovered 150 Feet Of Oil Cut Mud.

Recovered 140 Feet Of Free Oil.

Recovered Feet Of

Extra Equipment None

Recorder No. 10983 Type AK-1 Range 4100 PSI

Recorder Depth 3867

Tool Open Before I. S. I. 45 Mins.

Initial Shut-in 45 Mins.

Flow Period 45 Mins.

Final Shut-in 45 Mins.

Surface Choke Size 1"

Bottom Choke Size ¾"

Main Hole Size 7⅞"

Rubber Size 6¾"

Tool Open @ 4:15 A.M.

Blow Strong Blow Throughout Test.

Remarks

Drill Collar I. D. 2.7 Ft. Run 28'

Price of Job $600.00

CHENEY TESTING COMPANY
Pressure Data

Date 3-22-83 Test Ticket No. 7490

Recorder No. 10983 Capacity 4100 Location 3867 Ft.

Clock No. 26191 Elevation 2398 K.B. Well Temperature 110 °F

Point		Pressure	
A	Initial Hydrostatic Mud	2097	P.S.I.
B	First Initial Flow Pressure	69	P.S.I.
C	First Final Flow Pressure	103	P.S.I.
D	Initial Closed-in Pressure	204	P.S.I.
E	Second Initial Flow Pressure	111	P.S.I.
F	Second Final Flow Pressure	128	P.S.I.
G	Final Closed-in Pressure	203	P.S.I.
H	Final Hydrostatic Mud	2087	P.S.I.

	Time Given	Time Computed
Open Tool	4:15 A. M	
First Flow Pressure	45 Mins.	43 Mins.
Initial Closed-in Pressure	45 Mins.	45 Mins.
Second Flow Pressure	45 Mins.	43 Mins.
Final Closed-in Pressure	45 Mins.	45 Mins.

PRESSURE BREAKDOWN

First Flow Pressure
Breakdown: 8 Inc.
of 5 mins. and a
final inc. of 3 Min.

Initial Shut-In
Breakdown: 9 Inc.
of 5 mins. and a
final inc. of 0 Min.

Second Flow Pressure
Breakdown: 8 Inc.
of 5 mins. and a
final inc. of 3 Min.

Final Shut-In
Breakdown: 9 Inc.
of 5 mins. and a
final inc. of 0 Min.

Point	First Flow Pressure Mins.	Press.	Initial Shut-In Minutes	Press.	Second Flow Pressure Minutes	Press.	Final Shut-In Minutes	Press.
P 1	0	69	0	103	0	111	0	128
P 2	5	70	5	173	5	112	5	158
P 3	10	74	10	188	10	113	10	178
P 4	15	76	15	194	15	116	15	190
P 5	20	81	20	196	20	119	20	194
P 6	25	86	25	201	25	122	25	198
P 7	30	92	30	202	30	124	30	200
P 8	35	95	35	203	35	126	35	201
P 9	40	102	40	204	40	128	40	202
P10	43	103	45	204	43	128	45	203
P11								
P12								
P13								
P14								
P15								
P16								
P17								
P18								
P19								
P20								

CHENEY TESTING CO.

FIELD EVALUATIONS

Ticket No. 7490

Date 3-22-83

To J.O. Farmer Inc.

P.O. Box 352

Russell, Kansas

These calculations are based upon information furnished by you and taken from drill stem test pressure charts and are furnished for your information. In furnishing such calculations and evaluations, Cheney Testing Co. is merely expressing its opinion. You agree that The Testing Company makes no warranty as to the accuracy of such calculations or opinions and the Testing Company shall not be liable for any loss or damage, whether due to negligence or otherwise in connection with such calculations and opinions.

We Give Below Results of Drill Stem Evaluation

Lease Klenk #9 Sec. 18 Twp. 9 Rge. 23

County Graham Test Interval 3845-3870

FINAL

P.S.I. Slope Cycle $\left[M = \frac{Pisi - Pfsi}{\text{Log } \frac{T + t}{t}} \right]$ 21.55

Damage Ratio $\left[DR = .183 \frac{Ps - Pf}{M} \right]$ .645

Production $\left[Q = \frac{1440\ R}{T} \right]$ 1.89 Bbls./Hr.

45.38 Bbls./Day

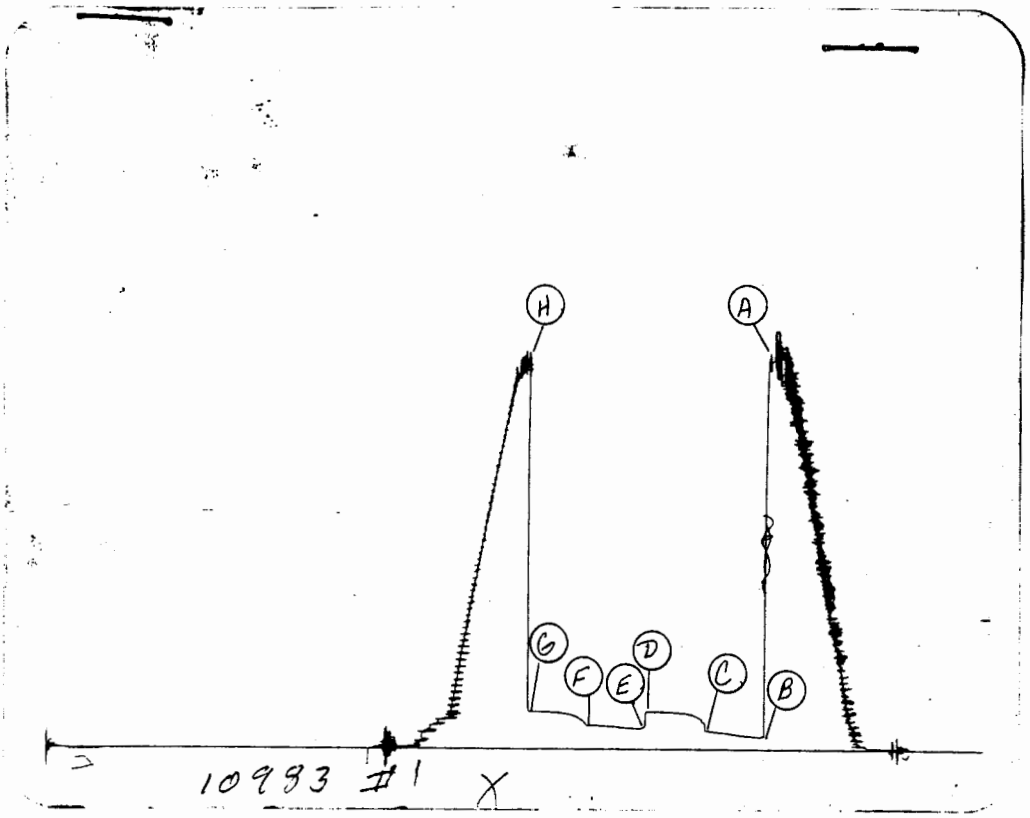
Effective Pay $\frac{Kh}{\mu B} = 162.6 \frac{Q}{M}$ 342.403 Md. Ft.

Theoretical Potential With Damage Removed $\left[Q_1 = Q\ DR \right]$ 45.38 Bbls./Day

% Drop In B.H.P. .49 %

Down Hole Insurance

10
9
8
7
6
5
4
3
2
1
9
8
7
6
5
4
3
2
1
100
200
300
400
500
600
I.S.I.P. 209
F.S.I.P. 208
DIETZGEN CORPORATION
MADE IN U.S.A.
NO. 341-L210 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
2 CYCLES X 10 DIVISIONS PER INCH



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2102	2097	PSI
(B)	First Initial Flow Pressure	61	69	PSI
(C)	First Final Flow Pressure	102	103	PSI
(D)	Initial Closed-in Pressure	204	204	PSI
(E)	Second Initial Flow Pressure	102	111	PSI
(F)	Second Final Flow Pressure	122	128	PSI
(G)	Final Closed-in Pressure	204	203	PSI
(H)	Final Hydrostatic Mud	2082	2087	PSI

COMPANY J.O. FARMER INC. LEASE AND WELL NO. KLENK #9 SEC. 18 TWP. 9 RGE. 23 TEST NO. 1 DATE 3-22-83

CHENEY TESTING COMPANY

P. O. BOX 3 HILL CITY, KANSAS 67642

DRILL-STEM TEST DATA

Company	J. O. Farmer Inc.	Test No.	2
Well Name & Number	Klenk #9	Zone Tested	
Company Address	Russell, Kansas	Date	3-22-83
Comp. Rep.	Sam Farmer	Tester	Gary Hartwell
Contractor	Co. Tools	Elevation	2398 K.B.
Location: Sec. 18 Twp. 9 Rge. 23 Co. Graham State Kansas		Est. Feet of Pay	

Recorder No. 13222 Type AK-1 Range 4000 PSI

Recorder Depth 3898

(A) Initial Hydrostatic Mud 2133 PSI

(B) First Initial Flow Pressure 81 PSI

(C) First Final Flow Pressure 102 PSI

(D) Initial Closed-in Pressure 817 PSI

(E) Second Initial Flow Pressure 122 PSI

(F) Second Final Flow Pressure 132 PSI

(G) Final Closed-in Pressure 817 PSI

(H) Final Hydrostatic Mud 2113 PSI

Temperature 108

Mud Weight 10 Viscosity 40

Fluid Loss 9.2

Interval Tested 3879-3904

Anchor Length 25'

Top Packer Depth 3874

Bottom Packer Depth 3879

Total Depth 3904

Drill Pipe Size 4½ X.H.

Wt. Pipe I. D. 3.25 Ft. Run 956

Recovery—Total Feet 270

Recovered 270 Feet Of Gas In Pipe.

Recovered 90 Feet Of Oil Cut Mud.

Recovered 180 Feet Of Heavy Oil Cut Mud.

Recovered Feet Of

Extra Equipment None

Recorder No. 10983 Type AK-1 Range 4100 PSI

Recorder Depth 3901

Tool Open Before I. S. I. 45 Mins.

Initial Shut-in 45 Mins.

Flow Period 45 Mins.

Final Shut-in 45 Mins.

Surface Choke Size 1"

Bottom Choke Size ¾"

Main Hole Size 7⅞"

Rubber Size 6¾"

Tool Open @ 7:00 P.M.

Blow Med Blow Building from 1" To 5" on

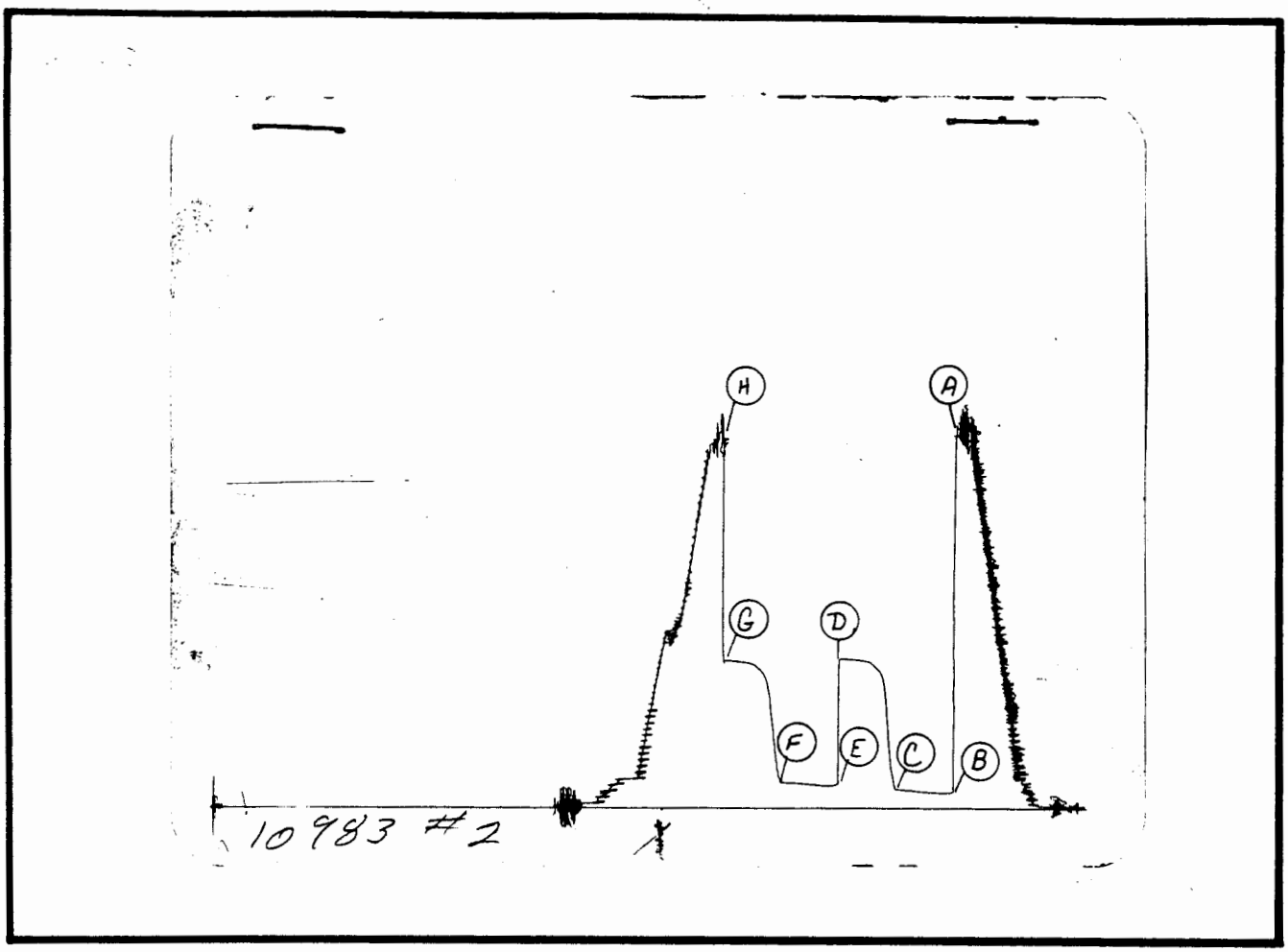
Remarks 1st Open.

Med Blow building From ½" To 4"- 2nd Open.

Slid 1' To Bottom.

Drill Collar I. D. 2.7 Ft. Run 28'

Price of Job $600.00



This is an actual photograph of recorder chart.

POINT		PRESSURE Field Reading	Office Reading	
(A)	Initial Hydrostatic Mud	2133		PSI
(B)	First Initial Flow Pressure	81		PSI
(C)	First Final Flow Pressure	102		PSI
(D)	Initial Closed-in Pressure	817		PSI
(E)	Second Initial Flow Pressure	122		PSI
(F)	Second Final Flow Pressure	132		PSI
(G)	Final Closed-in Pressure	817		PSI
(H)	Final Hydrostatic Mud	2113		PSI

COMPANY J. O. Farmer Inc. LEASE AND WELL NO. Klenk #9 SEC. 18 TWP. 9 RGE. 23 TEST NO. 2 DATE 3-22-83