15-055-20992

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

Computer Inventoried

8-23s-30w

COPY

Drill-Stem Test Data

Well Name HAFLICH #8-3 Test No. 1 Date 4/22/91
Company NORTH AMERICAN RESOURCES CO Zone Tested ST GEN.
Address 16 E GRANITE BUTTE MT 59701 Elevation 2832 GL
Co. Rep./Geo. MR JIM MYERS Cont. RED TIGER RIG #10 Est. Ft. of Pay 15
Location: Sec. 8 Twp. 23S Rge. 30W Co. FINNEY State KS

Interval Tested 4725-4750 Drill Pipe Size 4.5 XH
Anchor Length 25 Wt. Pipe I.D. - 2.7 Ft. Run
Top Packer Depth 4720 Drill Collar — 2.25 Ft. Run
Bottom Packer Depth 4725
Total Depth 4750

Mud Wt. 9.3 lb / gal. Viscosity 40 Filtrate 13.2

Tool Open @ 11:04 Initial Blow GOOD BLOW TO BOTTOM OF BUCKET IN 2 MINUTES-BLED 2 5 MIN-IMMEDIATE BLOW BACK BUILDING TO 3.5" @ SHUTIN

Final Blow GOOD BLOW BOTTOM OF BUCKET IMMEDIATELY-BLED 2" 5 MIN- IMMEDIATE BLOW-BACK BUILDING TO BOTTOM OF BUCKET IN 15 MIN-

Recovery — Total Feet 1075 Flush Tool? NO

Rec. 3675 Feet of GAS IN PIPE

Rec. 925 Feet of CLEAN GASSY OIL-50%GAS/50%OIL

Rec. 150 Feet of GAS 7 MUD CUT OIL-48%GAS/32%OIL/20%MUD

Rec. Feet of

Rec. Feet of

BHT 126 °F Gravity 30 °API @ 70 °F Corrected Gravity 29 °API

RW @ °F Chlorides ppm Recovery Chlorides ppm System

(A) Initial Hydrostatic Mud 2355.4 PSI AK1 Recorder No. 11038 Range 5075

(B) First Initial Flow Pressure 87.6 PSI @ (depth) 4727 w/Clock No. 17640

(C) First Final Flow Pressure 84.9 PSI AK1 Recorder No. 13337 Range 3925

(D) Initial Shut-In Pressure 1160.7 PSI @ (depth 4747 w/Clock No. 27597

(E) Second Initial Flow Pressure 128.2 PSI AK1 Recorder No. Range

(F) Second Final Flow Pressure 291.8 PSI @ (depth) w/Clock No.

(G) Final Shut-In Pressure 1137.8 PSI Initial Opening 5 Final Flow 60

(H) Final Hydrostatic Mud 2336.5 PSI Initial Shut-In 60 Final Shut-In 120

Our Representativve MR ROGER SELLS TOTAL PRICE $ 1035

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AUG 26 1991
CONSERVATION DIVISION

8-23s-30w

TRILOBITE TESTING COMPANY

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 3125 Date 4/22/91

Company Name NORTH AMERICAN RESOURCES CO

Lease HAPLICH #8-3 Test No. 1

County FINNEY Sec. 8 Twp. 23S Rng. 30W

SAMPLER RECOVERY

Gas 900 ML

Oil 2100 ML

Mud ML

Water ML

Other ML

Pressure 650 PSI

Total 3000 ML

PIT MUD ANALYSIS

Chlorides ppm.

Resistivity ohms @ F

Viscosity 40

Mud Weight 9.3

Filtrate 13.2

Other

SAMPLER ANALYSIS

Resistivity ohms @ F

Chlorides ppm.

Gravity corrected @ 60 F

PIPE RECOVERY

TOP

Resistivity ohms @ F

Chlorides ppm.

MIDDLE

Resistivity ohms @ F

Chlorides ppm.

BOTTOM

Resistivity ohms @ F

Chlorides ppm.

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Wichita, Kansas

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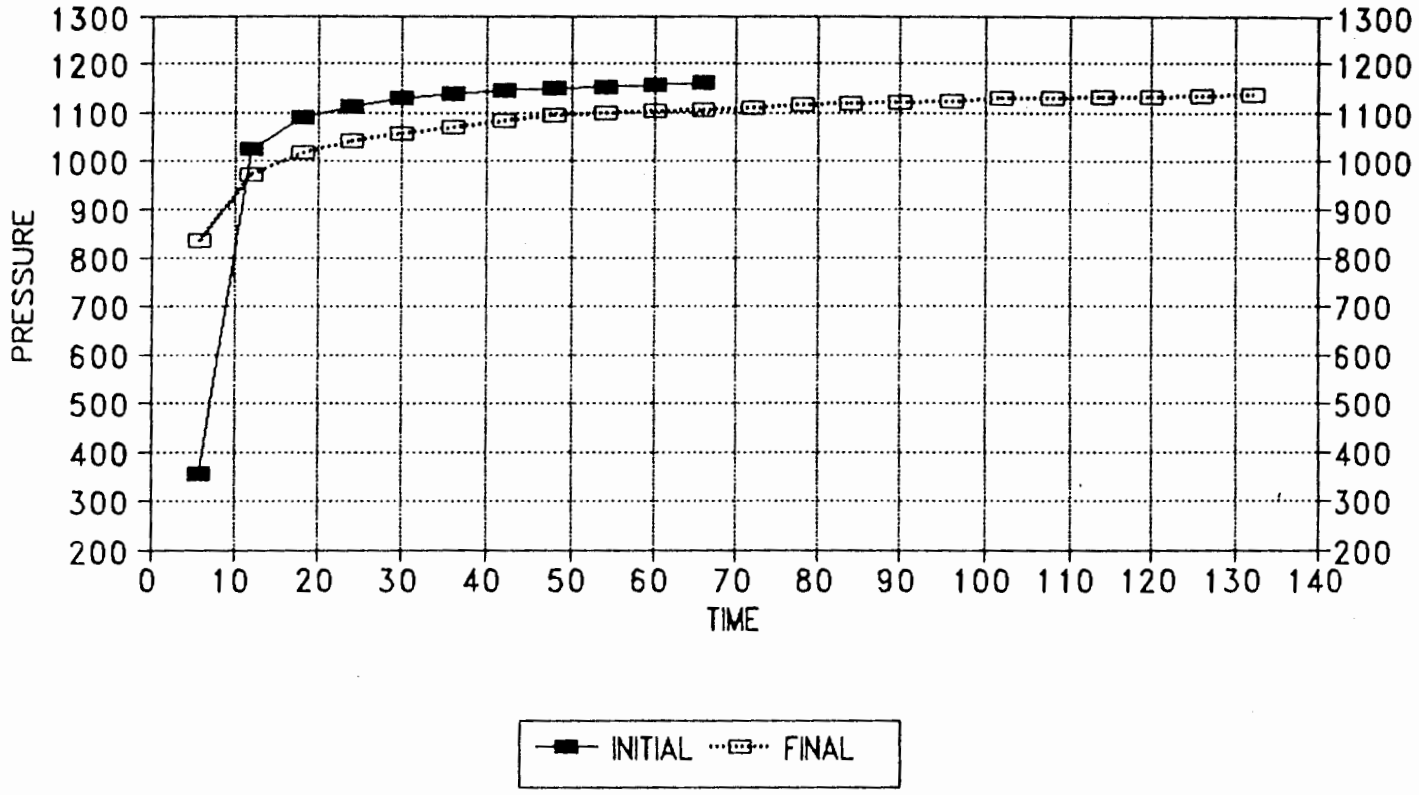
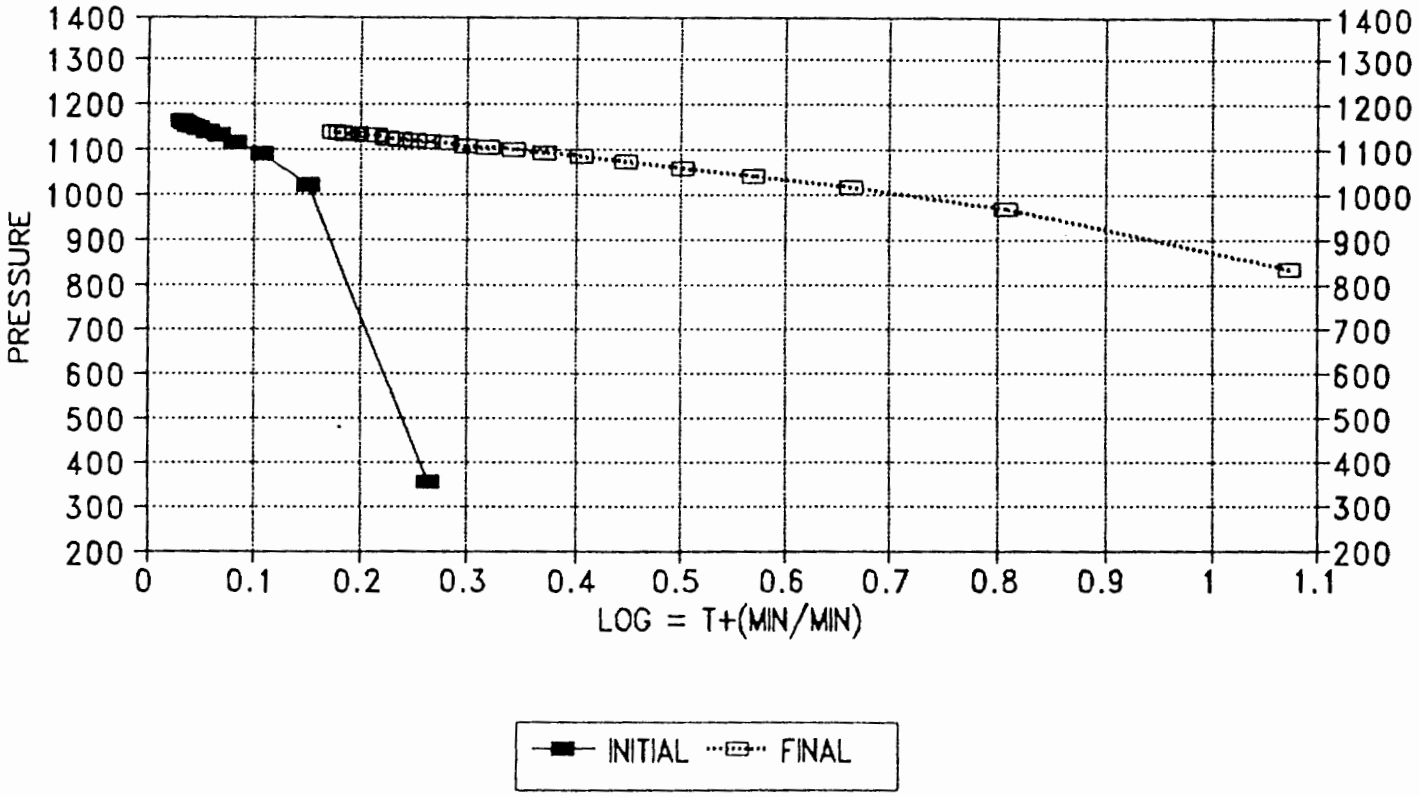
DELTA T DELTA P

DST #1 - HAFLICH #8-3



HORNER PLOT

DST #1 - HAFLICH #8-3



HAFLICH #8-3 DST #1
INITIAL SHUTIN

5 INITIAL FLOW TIME

Slope -989.38 psi/cycle
P * 1,192 psi

	TIME(MIN)	Pws (psi)	Horn T	Log Horn T	⟨⟩ PRESSURE
	6	355.4	2	0.263	355.4
	12	1024.3	1	0.151	668.9
	18	1088.9	1	0.106	64.6
	24	1114.2	1	0.082	25.3
	30	1129.3	1	0.067	15.1
	36	1139.4	1	0.056	10.1
	42	1144.4	1	0.049	5.0
X	48	1149.5	1	0.043	5.1
	54	1152.0	1	0.038	2.5
	60	1155.7	1	0.035	3.7
X	66	1160.7	1	0.032	5.0

HAFLICH #8-3 DST #1
FINAL SHUTIN

65 TOTAL FLOW TIME

Slope -251.82 psi/cycle
P * 1,182 psi

	TIME(MIN)	Pws (psi)	Horn T	Log Horn T	⟨⟩ PRESSURE
	6	835.3	12	1.073	835.3
	12	970.1	6	0.807	134.8
	18	1018.2	5	0.664	48.1
	24	1041.6	4	0.569	23.4
	30	1058.7	3	0.501	17.1
	36	1072.4	3	0.448	13.7
	42	1083.9	3	0.406	11.5
	48	1094.0	2	0.372	10.1
	54	1099.1	2	0.343	5.1
	60	1104.1	2	0.319	5.0
	66	1106.6	2	0.298	2.5
	72	1111.6	2	0.279	5.0
X	78	1115.3	2	0.263	3.7
	84	1117.8	2	0.249	2.5
	90	1122.8	2	0.236	5.0
	96	1125.3	2	0.225	2.5
	102	1129.3	2	0.214	4.0
	108	1130.2	2	0.205	0.9
	114	1131.8	2	0.196	1.6
	120	1132.7	2	0.188	0.9
	126	1135.4	2	0.181	2.7
X	132	1137.8	1	0.174	2.4

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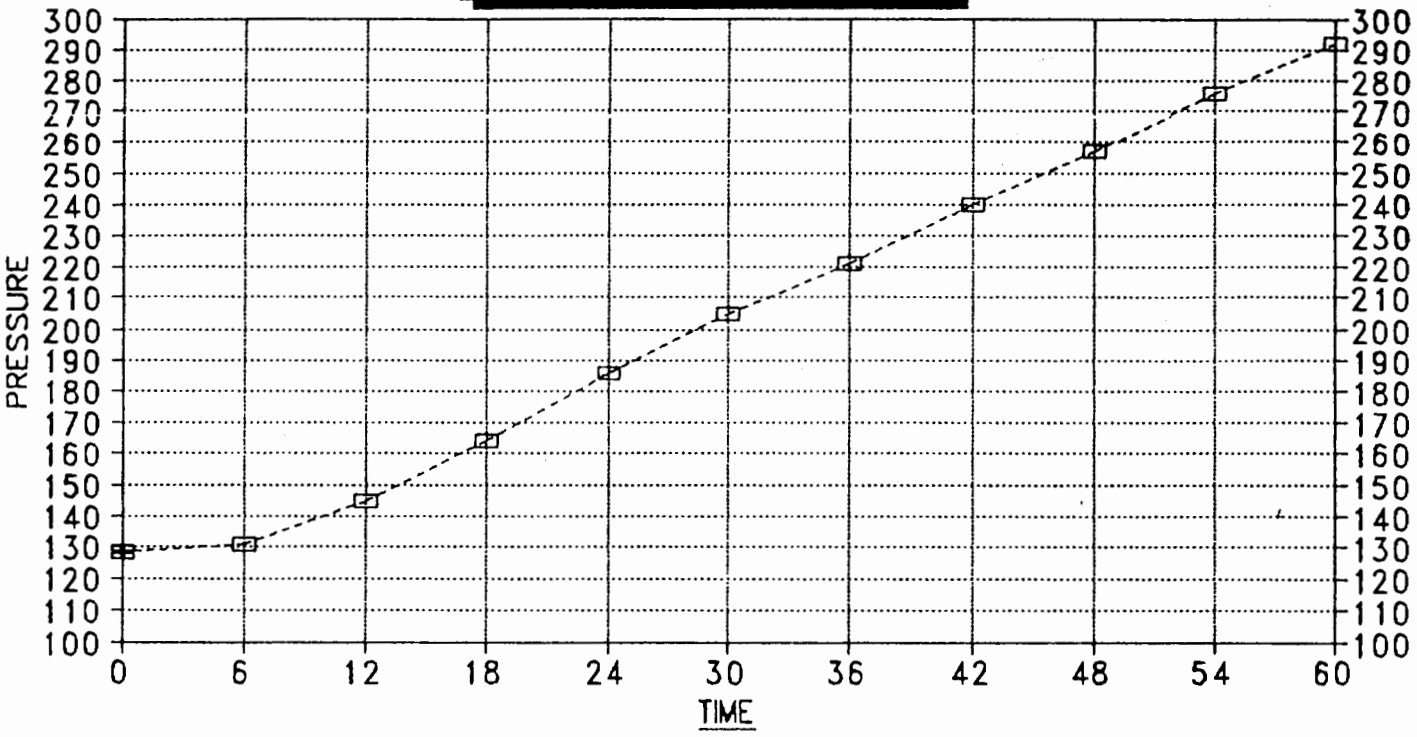
DELTA T DELTA P
FINAL FLOW - DST #1



INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE 149.7549 BBL/DAY

COPY

INITIAL FLOW

RECORDER # 11038
DST #1

DT(MIN)	PRESSURE	<> PRESSURE
0	87.6	87.6
3	84.9	-2.699997
6	84.9	0

FINAL FLOW

RECORDER # 11038
DST #1

DT(MIN)	PRESSURE	<> PRESSURE
0	128.2	128.2
6	130.9	2.699997
12	144.4	13.5
18	164.4	20
24	185.8	21.40001
30	204.6	18.8
36	220.7	16.09999
42	239.8	19.10001
48	257.1	17.3
54	275.8	18.69998
60	291.8	16

COMPUTER EVALUATION BY TRILOBITE TESTING
NORTH AMERICAN RESOURCES CO
REPORT FOR DST#1 FOR THE HAFLICH #8-3
8 23S 30W FINNEY KS

COPY

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TEST PARAMETERS

ELEVATION:	2832 KB	EST. PAY:	15 FT
DATUM:	-1896	ZONE TESTED:	ST.GEN
TEST INTERVAL:	4725-4750		
		TIME INTERVALS:	5-60-60-120
RECORDER DEPTH:	4727	VISCOSITY:	10.22954 CP
BOTTOM HOLE TEMP:	126	HOLE SIZE:	7.875 IN

****

CALCULATIONS

CUBIC FEET OF GAS IN PIPE: 293.4097

TOTAL FEET OF RECOVERY: 1075
BARRELS IN DRILL PIPE: 15.2865
GAS OIL RATIO: 19.19404 CU.FT./BBL
BUBBLE POINT PRESSURE: ; .2068769
TOTAL BARRELS OF RECOVERY: 15.2865
UNCORR. INIT. PROD.: 338.6548 BBL/DAY
API GRAVITY: 30
FLUID GRADIENT: .379
CORRECTED PIPE FILLUP: 769.9208
CORR. BARRELS OF RECOVERY: 10.94798 BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE: 242.5399 BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE
149.7549

****

INITIAL SLOPE 989.38 PSI/CYCLE
INITIAL P* 1192 PSI

FINAL SLOPE 251.82 PSI/CYCLE
FINAL P* 1182 PSI

****

TRANSMISSIBILITY	156.6078 (MD.-FT./CP.)
PERMEABILITY	106.8017 (MD.)
INDICATED FLOW CAPACITY	1602.026 (MD.FT)
PRODUCTIVITY INDEX	.1769668 (BARRELS/DAY/PSI)
DAMAGE RATIO	.6147963
RADIUS OF INVESTIGATION	83.31935 (FT.)
POTENTIOMETRIC SURFACE	743.5584 (FT.)
DRAWDOWN FACTOR	.8389234 (%)

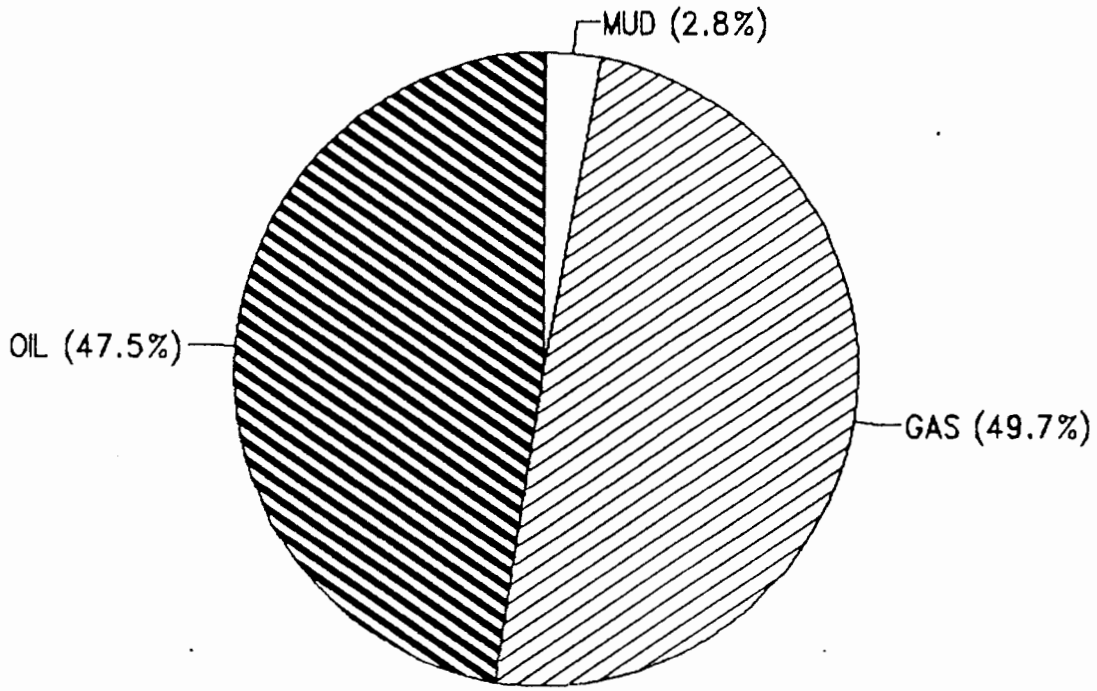
COPY

CALCULATED RECOVERY ANALYSIS DRILL PIPE

DST # 1 TICKET # 3125

SAMPLE #	TOTAL FEET	%	GAS FEET	%	OIL FEET	%	WATER FEET	%	MUD FEET
1	925	50	462.5	50	462.5		0		0
2	150	48	72	32	48		0	20	30
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	1075	49.7	534.5	47.4884	510.5	0	0	2.7907	30

			HRS OPEN	BBL/DAY
BBL OIL=	7.25931	*	1.08	161.318
BBL WATER	0	*		0
BBL MUD=	0.4266			
BBL GAS	7.60059			
OIL	7.25931			



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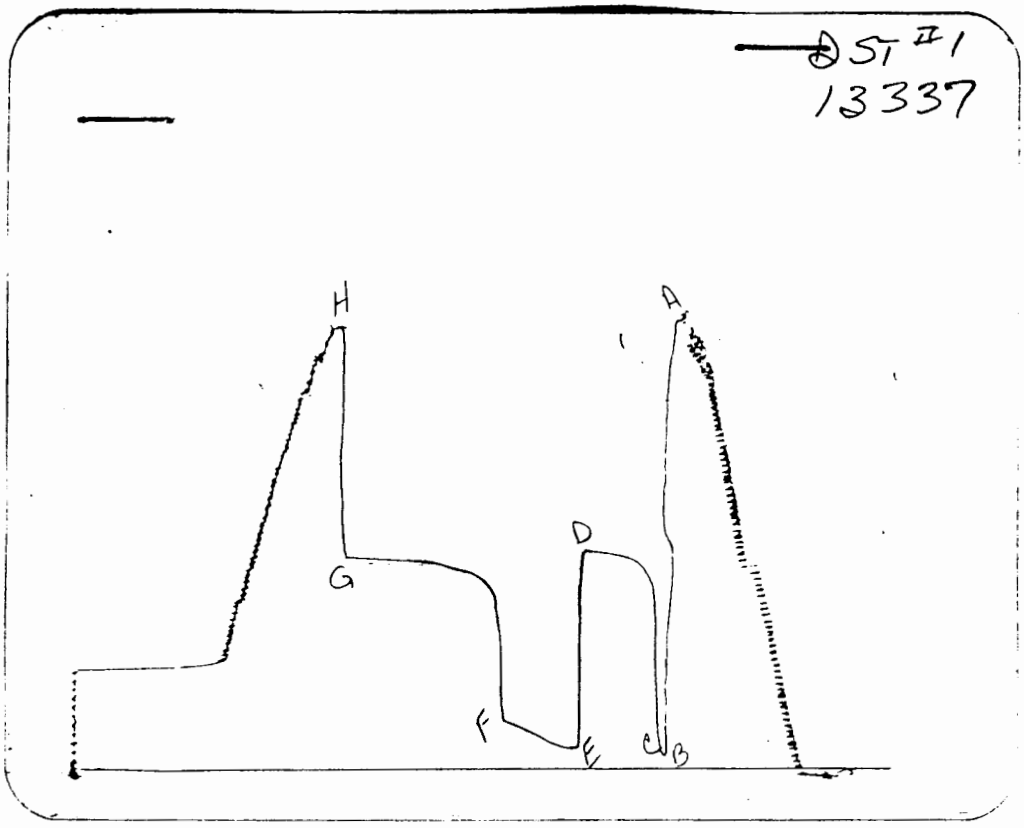

This is an actual photograph of recorder chart

POINT	PRESSURE	
	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2323	2355.4
(B) FIRST INITIAL FLOW PRESSURE	82	87.6
(C) FIRST FINAL FLOW PRESSURE	82	84.9
(D) INITIAL CLOSED-IN PRESSURE	1172	1160.7
(E) SECOND INITIAL FLOW PRESSURE	136	128.2
(F) SECOND FINAL FLOW PRESSURE	283	291.8
(G) FINAL CLOSED-IN PRESSURE	1121	1137.8
(H) FINAL HYDROSTATIC MUD	2310	2336.5

3-Billings
2-Butte

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

TEST TICKET

№ 3125

Well Name & No. Haflich #8-3 Test No. 1 Date 4-22

Company North American Resources, Co. Zone Tested St. Gen

Address 16 E. Granite Butte, Mt. 59701 Elevation 2832 GL

Co. Rep. / Geo. Jim Myers Cont. Red Tiger Rig #10 Est. Ft. of Pay 15'

Location: Sec. 8 Twp. 23 Rge. 30W Co. Finney State Ks

No. of Copies 5 Distribution Sheet ____ Yes X No Turnkey ____ Yes X No

2 check w/ office

Interval Tested 4725-4750 Drill Pipe Size 4½ XH

Anchor Length 25' Top Choke — 1" ____ Bottom Choke — ¾" ____

Top Packer Depth 4720 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 4725 Wt. Pipe I.D. — 2.7 Ft. Run ____

Total Depth 4750 Drill Collar — 2.25 Ft. Run ____

Mud Wt. 9.3 lb / gal. Viscosity 40 Filtrate 13.2

Tool Open @ 11:04 Initial Blow Good blow bottom of bucket in 2 min, Bld 2" 5 min. Immed. blow-back building to 3½" @ shut-in.

Final Blow Good blow bottom of bucket Immed. Bld 2" 5 min. Immed. blow-back building to bottom of bucket in 15 min. Gas to surface in 60 min. Not shut in

Recovery — Total Feet 1075' Flush Tool? ____

Rec. 3675 Feet of Gas in pipe

Rec. ____ Feet of ____

Rec. 925 Feet of clean gas oil - 50% gas, 50% oil

Rec. 150 Feet of gas & mud cut oil - 48% gas, 32% oil, 20% mud

Rec. ____ Feet of ____

BHT 126 °F Gravity 30 °API @ 70 °F Corrected Gravity 29 °API

RW ____ @ ____ °F Chlorides ____ ppm Recovery Chlorides 5,000 ppm System

(A) Initial Hydrostatic Mud	2323 PSI	AK1 Recorder No.	11038	Range	5075
(B) First Initial Flow Pressure	82 PSI	@ (depth)	4727	w/Clock No.	12640
(C) First Final Flow Pressure	82 PSI	AK1 Recorder No.	13337	Range	3925
(D) Initial Shut-In Pressure	1172 PSI	@ (depth)	4747	w/Clock No.	27597
(E) Second Initial Flow Pressure	136 PSI	AK1 Recorder No.	____	Range	____
(F) Second Final Flow Pressure	283 PSI	@ (depth)	____	w/Clock No.	____
(G) Final Shut-In Pressure	1121 PSI	Initial Opening	5	Test X	850.00
(H) Final Hydrostatic Mud	2310 PSI	Initial Shut-In	60	Jars X	200.00
		Final Flow	60	Safety Joint X	50.00
		Final Shut-In	120	Straddle	____
				Circ. Sub X	35.00
				Sampler X	200.00
				Extra Packer	____
				Other	____
				TOTAL PRICE $	1035.00

Approved By ____

Our Representative Roger F. Sell

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TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

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Drill-Stem Test Data

Well Name HAFLICH #8-3 Test No. 2 Date 4/25/91
Company NORTH AMERICAN RESOURCES CO Zone Tested PAWNEE
Address 16 E GRANITE BUTTE MT 59701 Elevation 2832 GL
Co. Rep./Geo. MR JIM MYERS Cont. RED TIGER RIG #10 Est. Ft. of Pay 15
Location: Sec. 8 Twp. 23S Rge. 30W Co. FINNEY State KS

Interval Tested 4558-4584 Drill Pipe Size 4.5 XH
Anchor Length 26 Wt. Pipe I.D. - 2.7 Ft. Run
Top Packer Depth 4558 Drill Collar — 2.25 Ft. Run
Bottom Packer Depth 4584
Total Depth 4910

Mud Wt. 9.4 lb / gal. Viscosity 42 Filtrate 9.2

Tool Open @ 5:20 Initial Blow WEAK-INCREASED TO 3" IN WATER

Final Blow WEAK-INCREASED TO 6" IN WATER IN 30 MINUTES

Recovery — Total Feet 180 Flush Tool? NO

Rec. 180 Feet of OIL SPOTTED MUDDY WATER W/ GOOD SHOW OF OIL ON TOP

Rec. Feet of

Rec. Feet of

Rec. Feet of

Rec. Feet of

BHT 118 °F Gravity 30 °API @ 70 °F Corrected Gravity 29 °API

RW 1.75 @ 60 °F Chlorides 4100 ppm Recovery Chlorides 4900 ppm System

(A) Initial Hydrostatic Mud 2266.3 PSI AK1 Recorder No. 13851 Range 4425

(B) First Initial Flow Pressure 21.2 PSI @ (depth) 4562 w/Clock No. 31154

(C) First Final Flow Pressure 21.2 PSI AK1 Recorder No. 13850 Range 4325

(D) Initial Shut-In Pressure 1260.4 PSI @ (depth 4580 w/Clock No. 27585

(E) Second Initial Flow Pressure 44.8 PSI AK1 Recorder No. 1055 Range 4025

(F) Second Final Flow Pressure 73.2 PSI @ (depth) 4910 w/Clock No. 30401

(G) Final Shut-In Pressure 1230.9 PSI Initial Opening 10 Final Flow 60

(H) Final Hydrostatic Mud 2260.8 PSI Initial Shut-In 60 Final Shut-In 120

Our Representativve MR HARRY SCHMIDT TOTAL PRICE $ 1350

TRILOBITE TESTING COMPANY

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 3841 Date 4/25/91

Company Name NORTH AMERICAN RESOURCES CO

Lease HAFLICH #8-3 Test No. 2

County FINNEY Sec. 8 Twp. 23S Rng. 30W

SAMPLER RECOVERY

Gas _____ ML

Oil TRACE ML

Mud _____ ML

Water 2500 ML

Other _____ ML

Pressure 220 PSI

Total _____ ML

PIT MUD ANALYSIS

Chlorides 4100 ppm.

Resistivity 1.5 ohms @ _____ F

Viscosity 42

Mud Weight 9.4

Filtrate 9.2

Other _____

SAMPLER ANALYSIS

Resistivity 1.75 ohms @ 60 F

Chlorides 4100 ppm.

Gravity _____ corrected @ 60 F

PIPE RECOVERY

TOP

Resistivity 1.75 ohms @ 60 F

Chlorides 4100 ppm.

MIDDLE

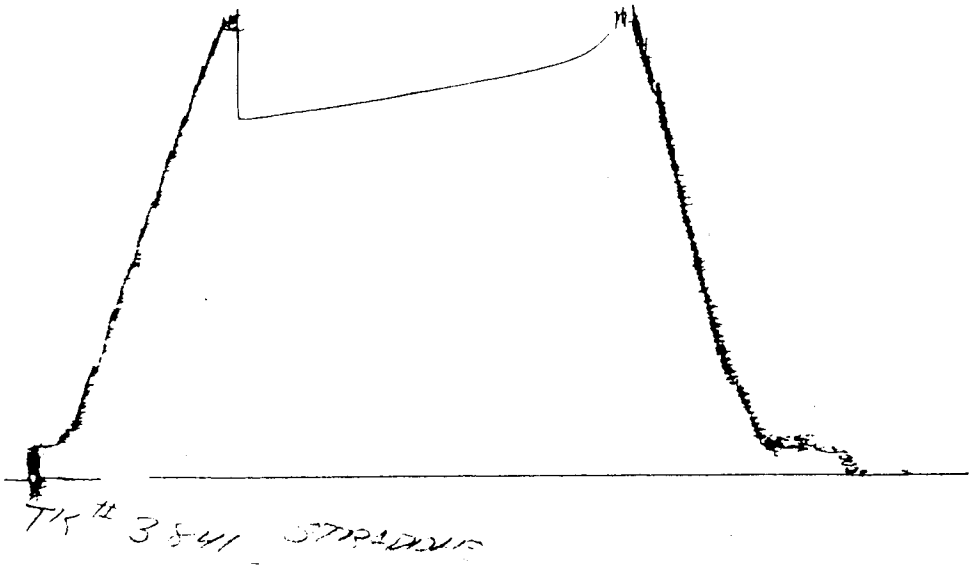
Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.

BOTTOM

Resistivity _____ ohms @ _____ F

Chlorides _____ ppm.



This is an actual photograph of recorder chart

POINT	PRESSURE	
	FIELD READING	OFFICE READING

(A) INITIAL HYDROSTATIC MUD

(B) FIRST INITIAL FLOW PRESSURE

(C) FIRST FINAL FLOW PRESSURE

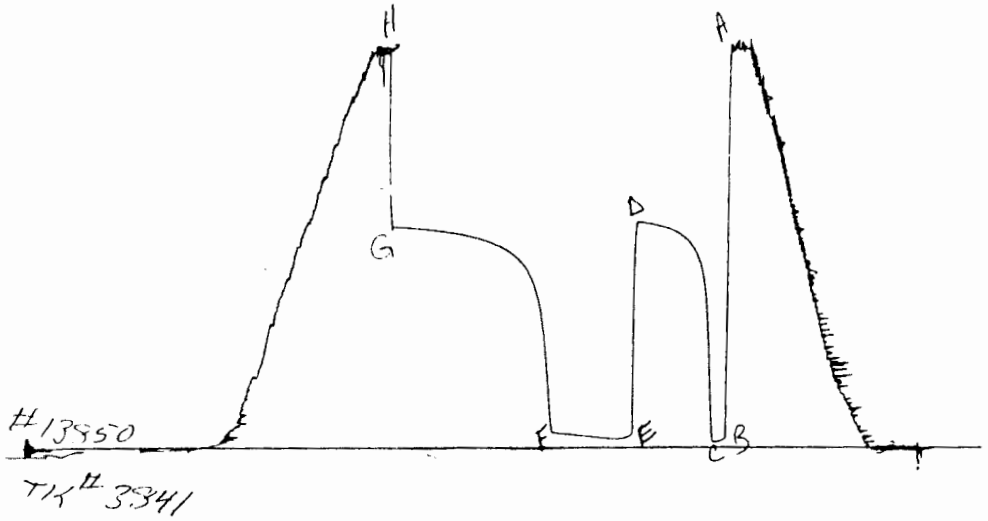
(D) INITIAL CLOSED-IN PRESSURE

(E) SECOND INITIAL FLOW PRESSURE

(F) SECOND FINAL FLOW PRESSURE

(G) FINAL CLOSED-IN PRESSURE

(H) FINAL HYDROSTATIC MUD



This is an actual photograph of recorder chart

POINT	PRESSURE FIELD READING	PRESSURE OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2263	2266.3
(B) FIRST INITIAL FLOW PRESSURE	20	21.2
(C) FIRST FINAL FLOW PRESSURE	20	21.2
(D) INITIAL CLOSED-IN PRESSURE	1255	1260.4
(E) SECOND INITIAL FLOW PRESSURE	40	44.8
(F) SECOND FINAL FLOW PRESSURE	70	73.2
(G) FINAL CLOSED-IN PRESSURE	1233	1230.9
(H) FINAL HYDROSTATIC MUD	2263	2260.8

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AUG 26 1991

Computer inventoried

TRILOBITE TESTING COMPANY

P.O. Box 362 • Hays, Kansas 67601

COPY

Nº 3841

Test Ticket

Well Name & No. HAFLICH "B" 8-3 Test No. TWO Date 4-25-91

Company NORTH AMERICAN RESOURCES CORP. Zone Tested PAWNEE

Address 16 E GRANIT BUTTE MT. 59701 Elevation 2833 GL.

Co. Rep./Geo. JIM MYERS Cont. RED TIGER #10 Est. Ft. of Pay 15

Location: Sec. 8 Twp. 23 S Rge. 30 W Co. FINNEY State KS

No. of Copies 2 Distribution Sheet ____ Yes ____ (No) Turnkey ____ Yes ____ (No) ____ Evaluation

Interval Tested 4558 TO 4584 Drill Pipe Size 4½" XH

Anchor Length 26' Top Choke — 1" ____ Bottom Choke — ¼" ____

Top Packer Depth 4558 Hole Size — 7⅞" ____ Rubber Size — 6¾" ____

Bottom Packer Depth 4584 Wt. Pipe I.D. — 2.7 Ft. Run —

Total Depth 4910 Drill Collar — 2.25 Ft. Run —

Mud Wt. 9.4 lb / gal. Viscosity 42 Filtrate 9.2

Tool Open @ 5:20 Initial Blow WEAK INCREASED TO 3" IN WATER

Final Blow WEAK INCREASED TO 6" IN WATER IN 30 MIN.

Recovery — Total Feet 180' Feet of Gas In Pipe — Flush Tool? ____

Rec. 180'	Feet Of OIL SPOTTED MUDY WATER	%gas	%oil	%water	%mud
Rec. ____	Feet Of	%gas	%oil	%water	%mud
Rec. ____	Feet Of GOOD SHOW OF OIL	%gas	%oil	%water	%mud
Rec. ____	Feet Of ON TOP	%gas	%oil	%water	%mud
Rec. ____	Feet Of	%gas	%oil	%water	%mud

BHT 118 °F Gravity ____ °API @ ____ °F Corrected Gravity ____ °API

RW 1.75 @ 60 °F Chlorides 4,100 ppm Recovery Chlorides 4900 ppm System

(A) Initial Hydrostatic Mud	2263 PSI	AK1 Recorder No.	13851	Range	4425
(B) First Initial Flow Pressure	20 PSI	@ (depth)	4562	w/Clock No.	31154
(C) First Final Flow Pressure	20 PSI	AK1 Recorder No.	13850	Range	4325
(D) Initial Shut-In Pressure	1255 PSI	@ (depth)	4580	w/Clock No.	27585
(E) Second Initial Flow Pressure	40 PSI	AK1 Recorder No.	1055	Range	4025
(F) Second Final Flow Pressure	70 PSI	@ (depth)	4910	w/Clock No.	30401
(G) Final Shut-In Pressure	1233 PSI	Initial Opening	10	Test	550.00
(H) Final Hydrostatic Mud	2263 PSI	Initial Shut-In	60	Jars	200.00
		Final Flow	60	Safety Joint	50.00
		Final Shut-In	120	Straddle	250.00
				Circ. Sub	____
				Sampler	200.00
				Extra Packer	150.00
				Other	____
				TOTAL PRICE $	1350.00

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Approved By ____

Our Representative ____

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8-23-30E