

Well Name: Norma 1-22
Company: Helmerich & Payne
Location: 22-25s-34w
Finney county Kansas
Date: 11-9-99

TRILOBITE TESTING L.L.C.

OPERATOR : Helmerich & Payne

DATE 11-5-99

WELL NAME: Norma 1-22

KB 2963.00 ft

TICKET NO: 12007

DST #1

LOCATION : 22-25s-34w Finney co KS

GR 2952.00 ft

FORMATION: morrow

INTERVAL : 4871.00 To 4990.00 ft

TD 4990.00 ft

TEST TYPE: CONV.

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	11057	11057	2346			PF Fr. 1950 to 2020 hr
SI 60 Range(Psi)	4500.0	4500.0	4995.0	0.0	0.0	IS Fr. 2020 to 2120 hr
SF 60 Clock(hrs)	12	12	alpin			SF Fr. 2120 to 2220 hr
FS 180 Depth(ft)	4985.0	4985.0	4893.0	0.0	0.0	FS Fr. 2220 to 0120 hr

	Field	1	2	3	4	
A. Init Hydro	2558.0	2552.0	2406.0	0.0	0.0	T STARTED 1630 hr
B. First Flow	89.0	105.0	37.0	0.0	0.0	T ON BOTM 1947 hr
B1. Final Flow	145.0	146.0	110.0	0.0	0.0	T OPEN 1950 hr
C. In Shut-in	1264.0	1275.0	1235.0	0.0	0.0	T PULLED 0120 hr
D. Init Flow	179.0	205.0	131.0	0.0	0.0	T OUT 0545 hr
E. Final Flow	224.0	237.0	193.0	0.0	0.0	
F. Fl Shut-in	1298.0	1318.0	1276.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	2547.0	2500.0	2471.0	0.0	0.0	Tool Wt. 5000.00 lbs
Inside/Outside	i	o	o			Wt Set On Packer 26000.00 lbs
						Wt Pulled Loose 105000.00 lbs
						Initial Str Wt 82000.00 lbs
						Unseated Str Wt 83000.00 lbs
						Bot Choke 0.75 in
						Hole Size 7.88 in
						D Col. ID 2.25 in
						D. Pipe ID 3.50 in
						D.C. Length 591.00 ft
						D.P. Length 4373.00 ft

RECOVERY

Tot Fluid 365.00 ft of 365.00 ft in DC and 0.00 ft in DP

586.00 ft of Gas in pipe

60.00 ft of Slight oil and gas cut mud

0.00 ft of 20% gas 15% oil 65% mud

120.00 ft of Gassy mud cut oil

0.00 ft of 35% gas 40% oil 25% mud

180.00 ft of Gassy mud cut oil

0.00 ft of 20% gas 60% oil 20% mud

0.00 ft of

SALINITY 1300.00 P.P.M. A.P.I. Gravity 0.00

BLOW DESCRIPTION

Initial Flow:

1/4" at open built to 8"

Initial Shut-in:

Bled for 2 mins. weak return in

6 mins. 1/4" died in 35 mins.

Final Flow:

1 1/2" at open built to bottom of bucket in 15 mins.

Final Shut-in:

Bled off for 3 mins. return in

3 mins. built to 3 1/2"

SAMPLES:

SENT TO:

MUD DATA-----

Mud Type	Chemical
Weight	9.00 lb/cf
Vis.	53.00 S/L
W.L.	8.00 in3
F.C.	0.00 in

Mud Drop N

Amt. of fill 0.00 ft

Btm. H. Temp. 119.00 F

Hole Condition good

% Porosity 0.00

Packer Size 6.75 in

No. of Packers 2

Cushion Amt. 0.00

Cushion Type

Reversed Out N

Tool Chased N

Tester Shane McBride

Co. Rep. Brad Rein

Contr. Cheyenne

Rig # 2

Unit #

Pump T.

Test Successful: Y

*** TOOL DIAGRAM *** CONV.

WELL NAME: Norma 1-22

LOCATION : 22-25s-34w Finney co KS

TICKET No. 12007 D.S.T. No. 1 DATE 11-5-99

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 26

TOTAL TOOL 56

DRILL COLLAR ANCHOR IN INTERVAL

C. ANCHOR STND.Stands Single Total

P. ANCHOR STND.Stands 1 Single 1 Total 93

TOTAL ASSEMBLY 149

C. ABOVE TOOLS.Stands10 Single Total 591

P. ABOVE TOOLS.Stands71 Single Total 4280

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 5020

TOTAL DEPTH 4990

TOTAL DRILL PIPE ABOVE K.B. 30

REMARKS:

AS; .4 cubic ft.

EL; 2,500 ml.

MD; 300 ml.

WATER;

otal 4,000 ml.

essure 190 psi.

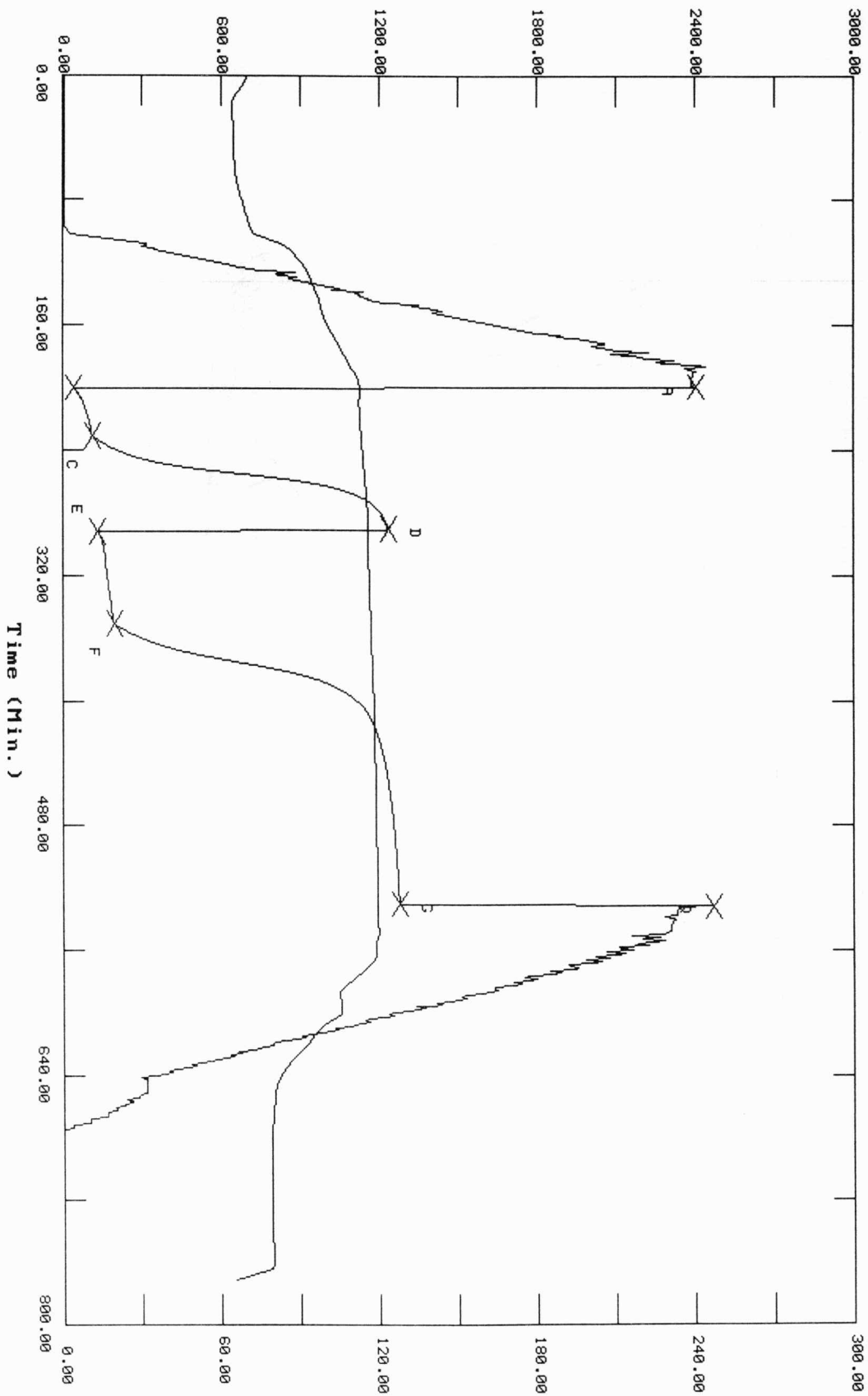
P.O. SUB	
C.O. SUB 1'	4840
S.I. TOOL 5'	4846
sampler 3'	4849
HMV 5'	4854
JARS 5'	4859
SAFETY JOINT 2'	4861
PACKER top	4866
PACKER bottom	4871
DEPTH 4871	
STUBB 1'	4872
ANCHOR 21' perf	4893
alpine recorder	4893
92' drillpipe	4985
ak-1 recorder	4985
T.C.	
DEPTH	
BULLNOSE 5' bullplug	4990
T.D.	4990

12007 DST #1 1-22 Norma Helmerich & Payne

TEST HISTORY

Flag Points
t(min.) P(PSig)

R:	0.00	2406.68
B:	0.00	37.25
C:	31.00	110.45
D:	59.00	1235.20
E:	0.00	131.76
F:	59.00	193.89
G:	179.00	1276.10
H:	0.00	2471.12

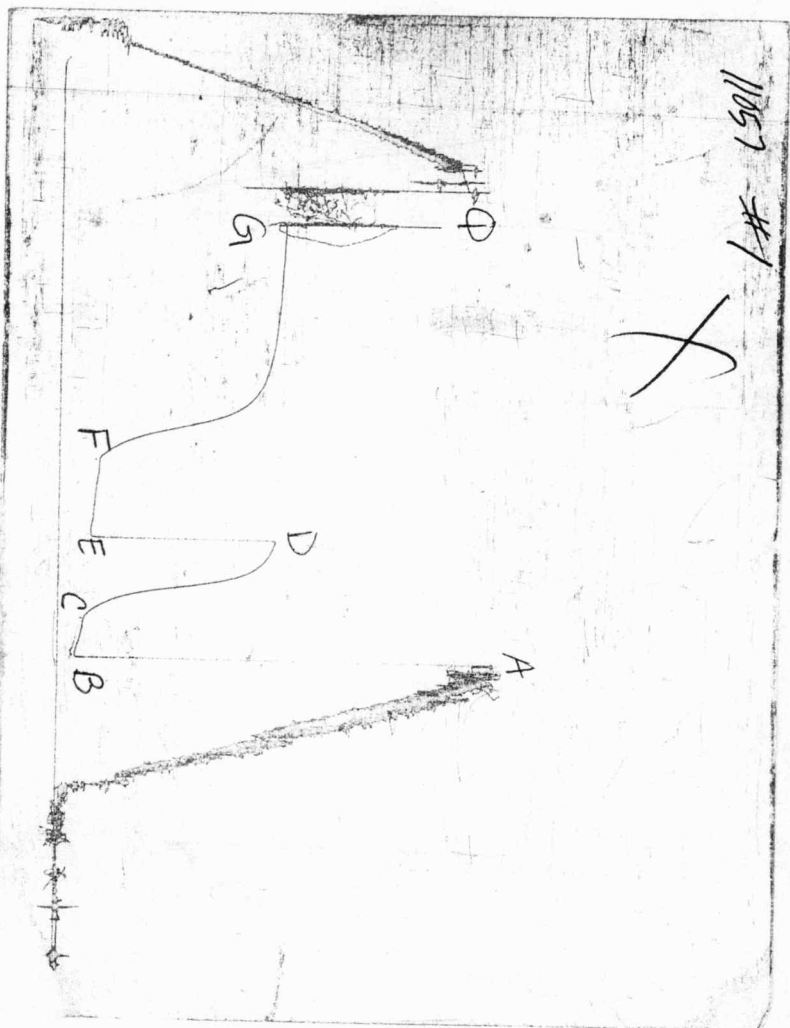


Pressure (PSig)

Temperature (DEG F)

Time (Min.)

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

TRILOBITE TESTING L.L.C.

P.O. Box 362 - Hays, Kansas 67601

FLUID SAMPLER DATA

Ticket No. 12007 Date 11-5-99
Company Name Helmrich & Payne
Lease Norman 1-22 Test No. 1
County Finney Ks Sec. 22 Twp. 25 Rng. 34

SAMPLER RECOVERY

Gas .4 cubic ft ~~ML~~
Oil 2,700 ML
Mud 300 ML
Water _____ ML
Other _____ ML
Pressure 190 PSI
Total 3000 ML

PIT MUD ANALYSIS

Chlorides 1300 ppm.
Resistivity 4.7 ohms @ 70 F
Viscosity 53
Mud Weight 9.0
Filtrate 8.0
Other _____

SAMPLER ANALYSIS

Resistivity 5.9 ohms @ 48 F
Chlorides 1400 ppm.
Gravity 1 corrected @ 60 F

PIPE RECOVERY

TOP
Resistivity 5.9 ohms @ 48 F
Chlorides 1400 ppm.

MIDDLE
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

BOTTOM
Resistivity _____ ohms @ _____ F
Chlorides _____ ppm.

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Nº 12007

Test Ticket

Well Name & No.	1-22 Norma	Test No.	1	Date	11-5-99
Company	Helmerich & Payne	Zone Tested	marrow		
Address	1579 E 21 st Tulsa OK 74114	Elevation	2963' KB	2852' GL	
Co. Rep / Geo.	Brad Rine	Cont.	Cheyenne #2	Est. Ft. of Pay	Por. %
Location: Sec.	22	Twp.	25	Rge.	34
		Co.	Finnery	State	Ks
No. of Copies		Distribution Sheet (Y, N)		Turnkey (Y, N)	
		Evaluation (Y, N)			

Interval Tested	4871'	4990'	Initial Str Wt./Lbs.	82,000	Unseated Str Wt./Lbs.	83,000
Anchor Length		119'	Wt. Set Lbs.	26,000	Wt. Pulled Loose/Lbs.	105,000
Top Packer Depth		4866'	Tool Weight	5,000		
Bottom Packer Depth		4871'	Hole Size — 7 7/8"	✓	Rubber Size — 6 3/4"	✓
Total Depth		4990'	Wt. Pipe Run	—	Drill Collar Run	581' KH
Mud Wt.	9.0	LCM			Drill Pipe Size	4 1/2 FH Ft. Run 4373'
Vis.	53	WL	8.0			
Blow Description	1/4" @ open built to 8" in.					

Bleed off for 2 min Weak return in 6 min 1/4" in died in 35 min.

1 1/2" in @ open built to 13.0.3 in 15 min.

Bleed off for 3 min return in 3 min built to 3 1/2" in.

Recovery — Total Feet	365'	GIP	586'	Ft. in DC	365'	Ft. in DP	—
Rec.	60'	Feet Of	50 ccm	20 %gas	15 %oil	%water	65 %mud
Rec.	120'	Feet Of	9 mco	35 %gas	40 %oil	%water	25 %mud
Rec.	180'	Feet Of	9 mco	20 %gas	60 %oil	%water	20 %mud
Rec.		Feet Of		%gas	%oil	%water	%mud
Rec.		Feet Of		%gas	%oil	%water	%mud
BHT	119'	°F Gravity	—	°API D@	—	°F Corrected Gravity	—
RW	5.9	@	48°	°F Chlorides	1,400	ppm Recovery	Chlorides 1300 ppm System

(A) Initial Hydrostatic Mud	2558	AK-1	2406	Alpine	2406	PSI Recorder No.	2346	T-On Location	15:45 p.m.
(B) First Initial Flow Pressure	89		37		37	PSI (depth)	4893	T-Started	16:30 p.m.
(C) First Final Flow Pressure	145		110		110	PSI Recorder No.	11057	T-Open	19:50 p.m.
(D) Initial Shut-In Pressure	1264		1235		1235	PSI (depth)	4985	T-Pulled	01:20 a.m.
(E) Second Initial Flow Pressure	179		131		131	PSI Recorder No.		T-Out	05:45 a.m.
(F) Second Final Flow Pressure	224		193		193	PSI (depth)		T-Off Location	06:55 a.m.
(G) Final Shut-in Pressure	1298		1276		1276	PSI Initial Opening	30	Test	X 700
(Q) Final Hydrostatic Mud	2547		2471		2471	PSI Initial Shut-in	60	Jars	X 200
						Final Flow	60	Safety Joint	X 50
						Final Shut-in	180	Straddle	

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF 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, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Brad Rine

Our Representative Steve McLeod

Circ. Sub X N/C

Sampler X 200

Extra Packer

Elec. Rec X 150

Mileage

Other

TOTAL PRICE \$ 1300

Well Name 1-22 Norma

DST Number 1

Recorder Number 11057

A: 2.274 2552

B: .094 105

C: .131 146

D: 1.140 1275

E: .183 205

F: .212 237

G: 1.178 1318

Q: 2.228 2500