

15-175-21792-0100

36-34-34w

WELL NAME: City of Liberal C-1
COMPANY: Anadarko
LOCATION: 36-34s-34w
Seward co Kansas
DATE: 7/13/00

TRILOBITE TESTING L.L.C.

OPERATOR : Anadarko DATE 7-7-00
 WELL NAME: City of Liberal C-1 KB 0.00 ft TICKET NO: 12600 DST #1
 LOCATION : ~~16-34s-34w~~ Seward co KS GR 0.00 ft FORMATION: St. Louis
 INTERVAL : 6830.00 To 6870.00 ft TD 7016.00 ft TEST TYPE: CONVENTIONALSTRADDLE

RECORDER DATA

Mins	Field	1	2	3	4	TIME DATA-----
PF 30 Rec.	13252	13252	3026	13277		PF Fr. 0323 to 0353 hr
SI 12 Range(Psi)	4550.0	4550.0	4995.0	4125.0	0.0	IS Fr. 0353 to 0415 hr
SF 5 Clock(hrs)	18hr	18hr	elect	18hr		SF Fr. 0415 to 0420 hr
FS 120 Depth(ft)	6870.0	6870.0	6840.0	7016.0	0.0	FS Fr. 0420 to 0520 hr

	Field	1	2	3	4	
A. Init Hydro	3236.0	3227.0	3218.0	0.0	0.0	T STARTED 2130 hr
B. First Flow	391.0	432.0	204.0	0.0	0.0	T ON BOTM 0322 hr
B1. Final Flow	768.0	747.0	782.0	0.0	0.0	T OPEN 0323 hr
C. In Shut-in	2059.0	2096.0	2067.0	0.0	0.0	T PULLED 0615 hr
D. Init Flow	825.0	829.0	801.0	0.0	0.0	T OUT 1251 hr
E. Final Flow	825.0	829.0	858.0	0.0	0.0	
F. Fl Shut-in	2139.0	2130.0	2150.0	0.0	0.0	TOOL DATA-----
G. Final Hydro	3213.0	3231.0	3221.0	0.0	0.0	Tool Wt. 2000.00 lbs
Inside/Outside	0	0	I	0		Wt Set On Packer 40000.00 lbs
						Wt Pulled Loose 130000.00 lbs
						Initial Str Wt 78000.00 lbs
						Unseated Str Wt 88000.00 lbs
						Bot Choke 0.78 in
						Hole Size 7.78 in
						D Col. ID 2.25 in
						D. Pipe ID 3.38 in
						D.C. Length 373.00 ft
						D.P. Length 6580.00 ft

RECOVERY

Tot Fluid 1950.00 ft of 373.00 ft in DC and 1577.00 ft in DP
 736.00 ft of Clean oil
 1214.00 ft of Gas & Mud cut Oil
 0.00 ft of 30% gas 50% oil 20% mud
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of
 0.00 ft of

SALINITY 0.00 P.P.M. A.P.I. Gravity 46.00

BLOW DESCRIPTION

Initial Flow:
 Strong blow. Bottom of bucket in 2 minutes. Gas to surface in 13 minutes
 Final Flow:
 Bled 2". Blow never completely died had 6" blow back.

SAMPLES: yes
 SENT TO: Caraway Analytical

Test Successful: Y

MUD DATA-----
 Mud Type Chemical
 Weight 9.10 lb/c
 Vis. 54.00 S/L
 W.L. 6.00 in3
 F.C. 0.00 in
 Mud Drop
 Amt. of fill 0.00 ft
 Btm. H. Temp. 150.00 F
 Hole Condition
 % Porosity 0.00
 Packer Size 6.75 in
 No. of Packers 3
 Cushion Amt. 0.00
 Cushion Type
 Reversed Out Y
 Tool Chased N
 Tester Scott Bugbee
 Co. Rep. Dan Eisenhauer
 Contr. Big A
 Rig # 2
 Unit #
 Pump T.

GAS RECOVERY

COMPANY: Anadarko DATE: 7-7-00
WELL NAME: City of Liberal C-1 KB Elev: 0.00 ft TICKET #12600 DST #1
WELL LOCATION: ~~16-34s-34*~~ Seward co KS GR Elev: 0.00 ft FORMATION: St. Louis
INTERVAL Fr.: 6830.00 To 6870.00 T.D.: 7016.00 ft TEST TYPE: CONVENTIONALSTRADDLE

GAS RECOVERY MEASURED WITH Merla

***** GAS RATES FOR FLOW #1

Time (min)	Orifice (in)	Pressure (Psi)	H2O (in)	Rate (cf/d)
13	0.38	6	0	48800.0
20	0.38	8	0	57300.0
25	0.38	10	0	65300.0
30	0.38	11	0	69400.0

*** TOOL DIAGRAM *** CONVENTIONALSTRADDLE

WELL NAME: City of Liberal C-1

36-34s-34w

LOCATION : ~~16-34s-34w~~ Seward co KS

TICKET No. 12600 D.S.T. No. 1 DATE 7-7-00

TOTAL TOOL TO BOTTOM OF TOP PACKERS 30

INTERVAL TOOL

BOTTOM PACKERS AND ANCHOR 62

TOTAL TOOL 92

DRILL COLLAR ANCHOR IN INTERVAL

D.C. ANCHOR STND.Stands Single Total

D.P. ANCHOR STND.Stands 1 Single 1 Total 124

TOTAL ASSEMBLY 216

D.C. ABOVE TOOLS.Stands4 Single Total 373

D.P. ABOVE TOOLS.Stands73 Single Total 6456

TOTAL DRILL COLLARS DRILL PIPE & TOOLS .. 7045

TOTAL DEPTH 7016

TOTAL DRILL PIPE ABOVE K.B. 29

REMARKS:

Sampler Data

1150 PSI

3500 ML Oil

13.5 CFG

Bottom Packer did not hold

P.O. SUB Top of tool	6800
C.O. SUB 1'DP	6801
S.I. TOOL 5'	6806
3'sampler	6809
HMV 5'	6814
JARS 5'	6819
SAFETY JOINT 2'	6821
PACKER 5'	6826
PACKER 5'	6830
DEPTH 6830 1'	6831
ANCHOR	
4'perf	6835
Alpine Rec.	6840
5'PU sub	6840
25'perf	6865
AK1 Rec.	6870
PACKER 5'	6870
1'c/o sub	6871
124' pipe	6995
1'c/o sub	6996
15' perf	7011
AK1 Rec.	7016
BULLNOSE	
T.D. 5'BP	7016

Caraway Analytical, Inc.
728 N. Roosevelt
P. O. Box 2137
Liberal, Kansas 67905
rcaraway@bigfoot.com

Phone 316-624-5389
Fax 316-626-7108

Fractional Analysis

Components		Mol %	GPM
Carbon Dioxide	CO2	0.0679	
Nitrogen	N2	13.3295	
Methane	C1	64.9689	10.9191
Ethane	C2	8.8184	2.3531
Propane	C3	6.3737	1.7522
Iso Butane	iC4	1.2321	0.4021
Normal Butane	nC4	2.6678	0.8392
Iso Pentane	iC5	0.6112	0.2232
Normal Pentane	nC5	0.8634	0.3120
Hexanes Plus	C6+	0.8537	0.3666
Helium	He	0.2134	
Totals		100.0000	17.1675

Date Run 07/10/2000
Lab Number 20003748
Company APC
Producer APC
Lease City of Liberal C-
Station 000000
Pressure
Temperature
Cylinder No.
Analysis by Robert Caraway
Sampled by Scott/Trilobite
Sample Date
Received 07/09/2000
Location 16-34-34 Sw
H2S

Gasoline Content @ 14.65 psia & 60 F

Remarks

Propane & Heavier	3.8953
Butane & Heavier	2.1431
Pentane & Heavier	0.9018

DST 1

BTU @ 14.65 psia & 60 F (Real)

Results to

Dry	1202.5
Saturated	1181.6
Z-Factor	0.9964

Anadarko Petroleum Corp.
Liberal, Kansas
Att: Dale Fiorini/Pat Rich

Specific Gravity	0.8245
Octane Rating	104.5

Operator.....: Anadarko Petroleum
Well Name.....: City of Liberal C-1
DST Number.....: 1

Location.: ~~16-34s-34w~~^{36-34s-34w} Seward co KS Recorder No...: 3026
Test Type: Conv Recorder Depth: 6840
Formation: St Louis Test Interval.: 6830-6870

RESERVOIR CALCULATIONS: Fluid calculations based on shut-in #2

RESERVOIR PARAMETERS USED:

Net Pay.....: 10.00 ft
Porosity.....: 11.00 %
Bottom Hole Temp.....: 150.00 F
Specific Gravity.....: 0.031
API Gravity.....: 46.00
Compressibility.....: 0.000002 /psi
Viscosity.....: 8.4875 cp
Total Recovery.....: 1950.00 ft
Total Flowing Time.....: 35.00 min.
Flow Rate.....: 718.24 bbls/d
Final Flowing Pressure.....: 858.00 psi
Horner Slope.....: 203.1676 psi/cycle
Extrapolated Pressure.....: 2174.50 psi
Formation Volume Factor.....: 1.05 Reservoir/Surface
Well Bore Radius.....: 3.94 in

RESULTS:

Effective Permeability.....: 514.080483 md
Flow Capacity.....: 5140.8048 md.ft
Transmissibility.....: 605.6913 md.ft/cp
Skin Factor.....: 1.1225
Radius of Investigation.....: 342.70607 ft
Damage Ratio.....: 1.1772
Productivity Index.....: 0.5456 bbls/psi.d
Productivity Index W/O Damage.: 0.6422 bbls/psi.d

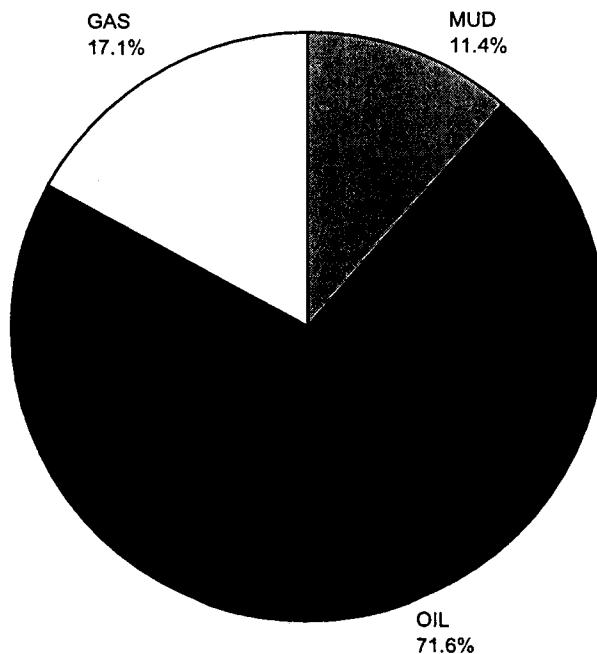
CALCULATED RECOVERY ANALYSIS

DST 1

TICKET 12600

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	736	0	0	100	736	0	0	0	0
PIPE	2	841	30	252.3	50	420.5	0	0	20	168.2
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	373	30	111.9	50	186.5	0	0	20	74.6
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		1950	0	364.2	0	1343	0	0	0	242.8

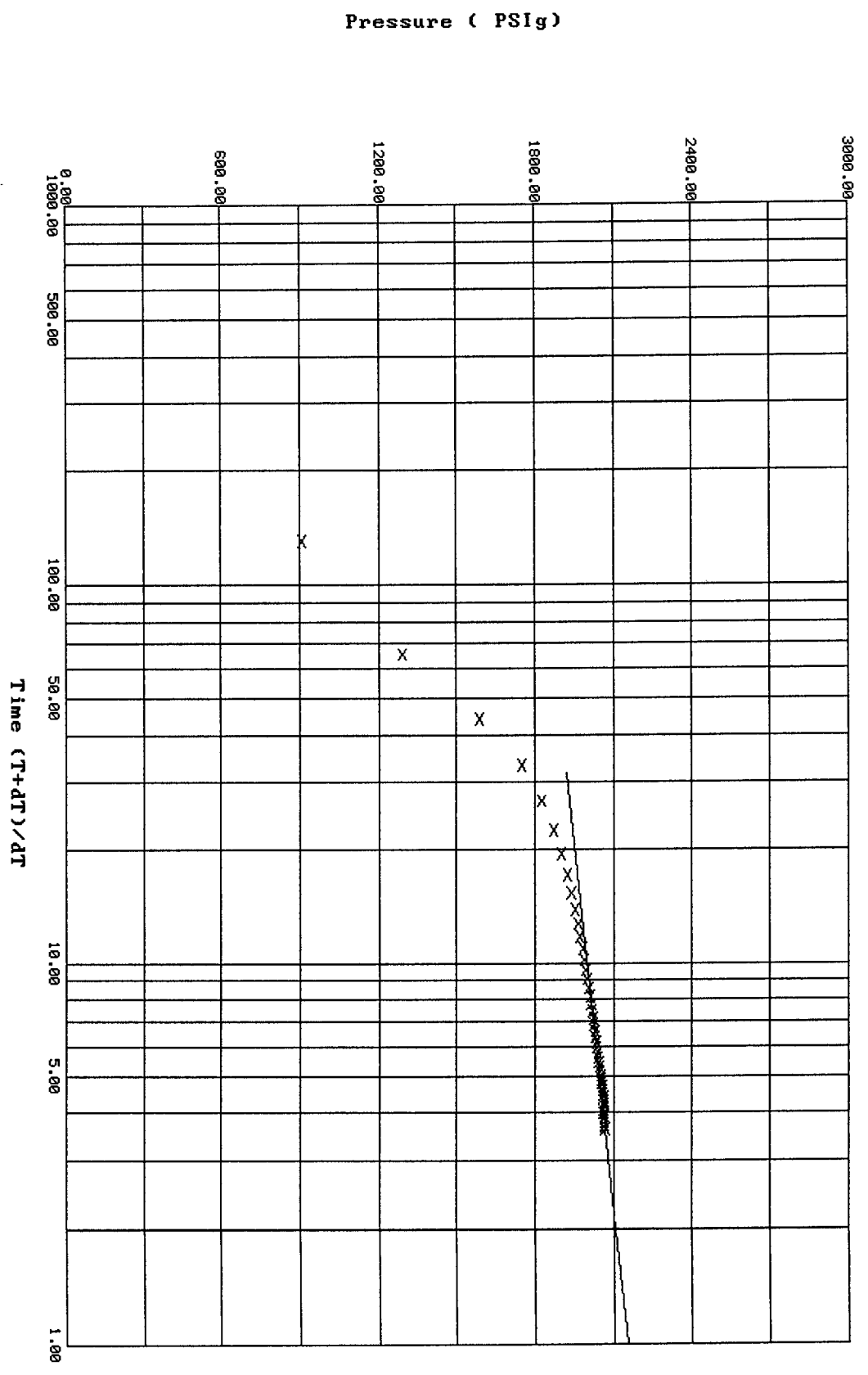
BBL OIL= 17.357415 * HRS OPEN 0.58 = BBL/DAY 718.23786
 BBL WATER= 0 * = 0
 BBL MUD= 2.756598
 BBL GAS = 4.134897



Horner Plot: shut-in #1

12600 DST#1 City of Liberal C-1 Anadarko Petroleum

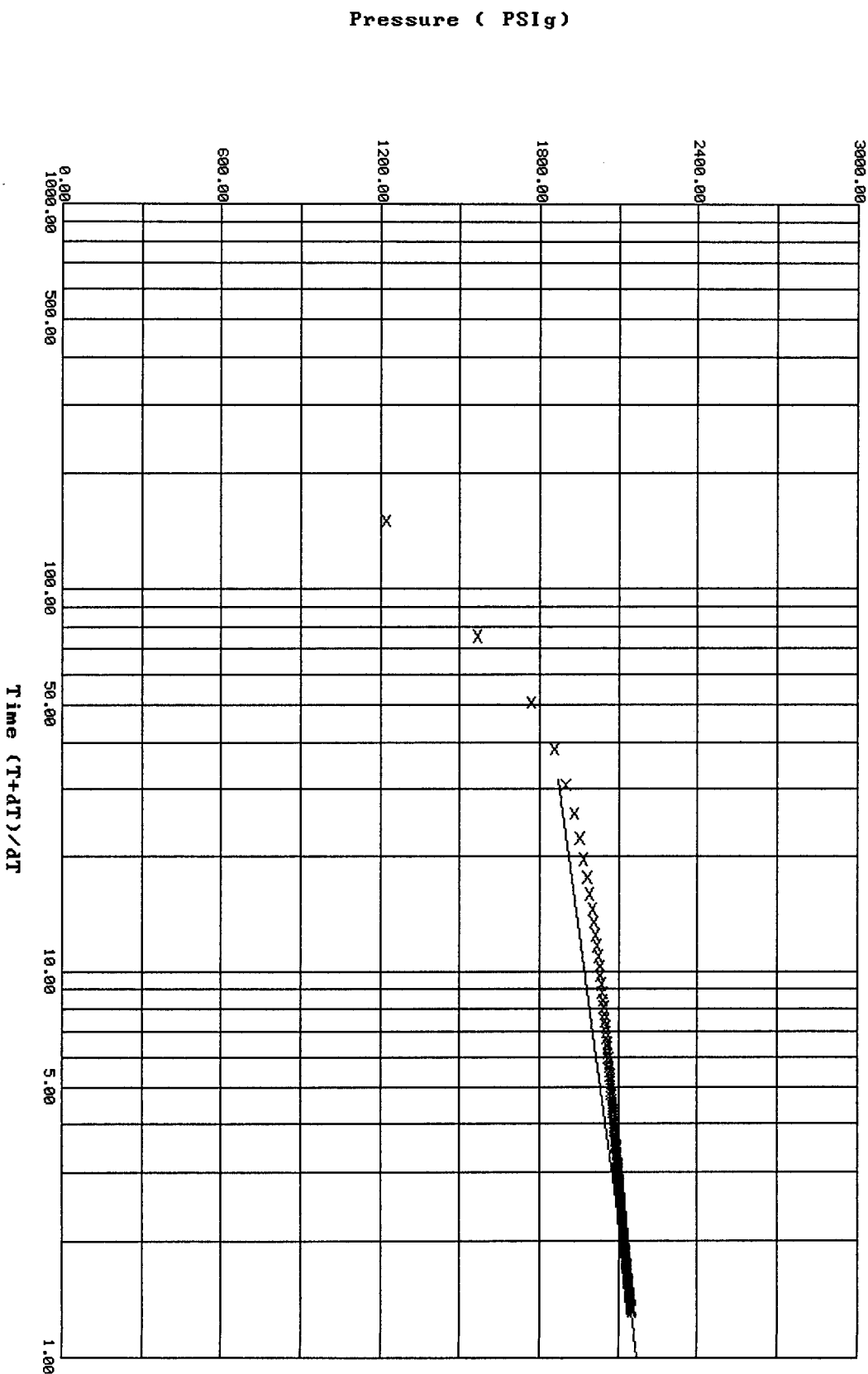
Slope: 152.5047 PSig/cycle
Ext. Pressure: 2153.3743 PSig



Horner Plot: shut-in #2

12600 DST#1 City of Liberal C-1 Anadarko Petroleum

Slope: 203.1676 PSig/cycle
Ext. Pressure: 2174.5029 PSig



TEST HISTORY

12600 DST#1 City of Liberal C-1 Anadarko Petroleum Corp.

Flag Points
t(Min.) P(PSig)

A:	0.00	3218.84
B:	0.00	204.60
C:	32.25	782.63
D:	12.25	2067.90
E:	0.00	801.65
F:	5.00	858.67
G:	120.75	2150.75
Q:	0.00	3221.35

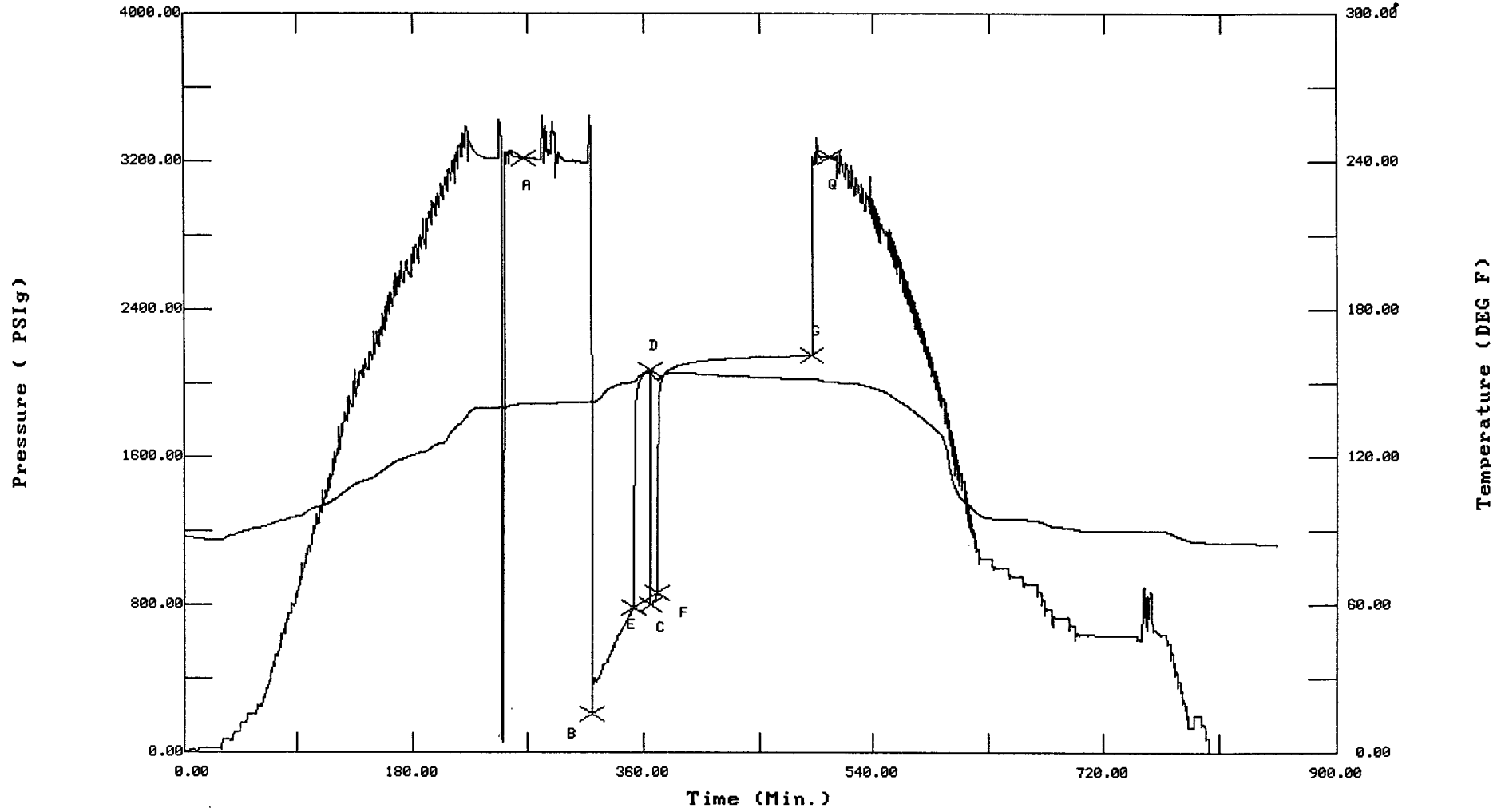
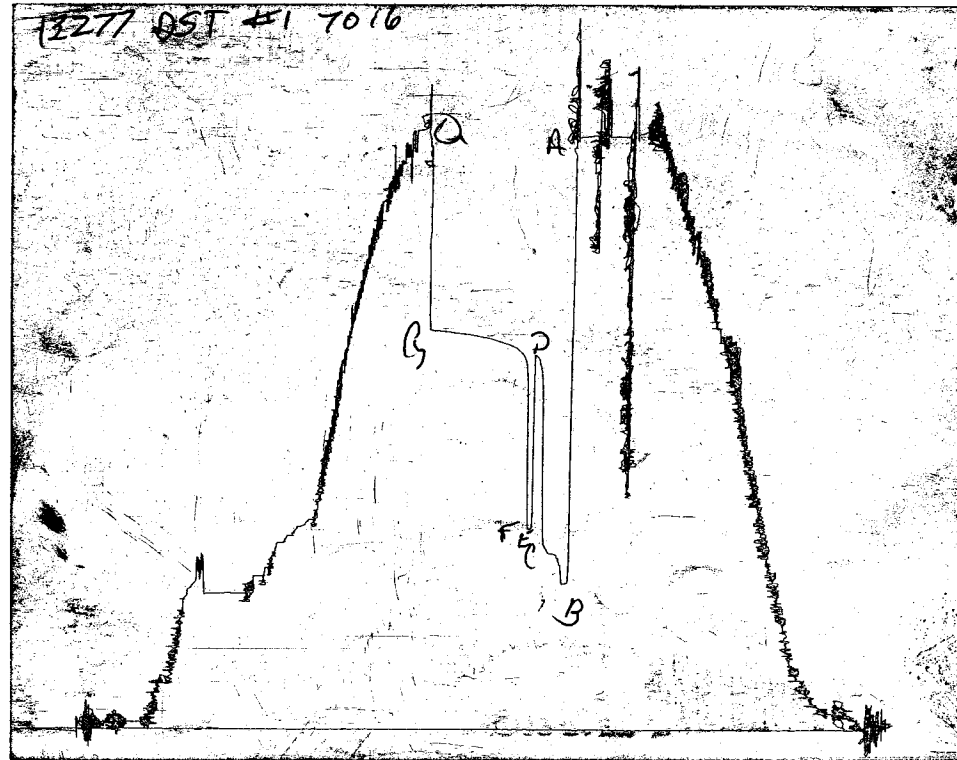
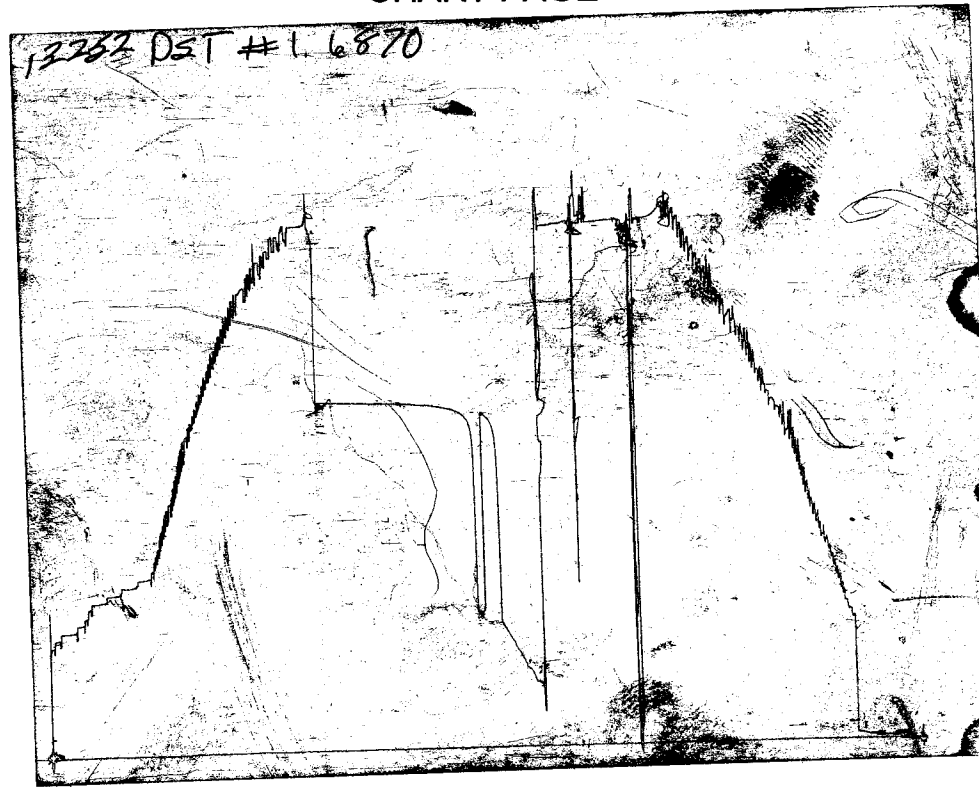


CHART PAGE



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

CHART PAGE



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

408897

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Test Ticket

N^o 12600

Well Name & No. City of Liberal C-1 Test No: #1 Date 7-7-00
 Company Anadarko Pet. Corp. Zone Tested St. Louis
 Address P.O. Box 351 Liberal Ks. 67905-0351 Elevation _____ KB _____ GL _____
 Co. Rep / Geo. Dan Eisenhower Cont. Big A. Rig 2 Est. Ft. of Pay _____ Por. _____ %
 Location: Sec. 36 Twp. 36S Rge. 34W Co. Seward State Ks.
 No. of Copies _____ Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 6830 - 6870 Initial Str Wt./Lbs. 78,000 Unseated Str Wt./Lbs. 88,000
 Anchor Length 40' Wt. Set Lbs. 40,000 Wt. Pulled Loose/Lbs. 130,000
 Top Packer Depth 6830 Tool Weight 2,000
 Bottom Packer Depth 6870 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 7016 Wt. Pipe Run _____ Drill Collar Run 373
 Mud Wt. 9.1 LCM 5 Vis. 54 WL 6.0 Drill Pipe Size 4 1/2 X H Ft. Run 6580
 Blow Description Strong blow B.O.B. in 2min. GTS in 13min.
Bled 2" Blow never completely died had 6" Blow back

Recovery — Total Feet 1950 GIP GTS Ft. in DC 373 Ft. in DP 1577
 Rec. 736 Feet Of Clean oil %gas 100 %oil _____ %water _____ %mud _____
 Rec. 1214 Feet Of Gas + mud cut oil %gas 50 %oil _____ %water 20 %mud _____
 Rec. _____ Feet Of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet Of _____ %gas _____ %oil _____ %water _____ %mud _____
 Rec. _____ Feet Of _____ %gas _____ %oil _____ %water _____ %mud _____
 BHT _____ °F Gravity 49 °API D@ 90 °F Corrected Gravity 46 °API _____
 RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides _____ ppm System

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>3236</u>	<u>3218</u>	<u>3026</u>	<u>7:30 P.M.</u>
(B) First Initial Flow Pressure	<u>391</u>	<u>204</u>	(depth) <u>6840</u>	T-Started <u>29:30 A.M.</u>
(C) First Final Flow Pressure	<u>768</u>	<u>782</u>	PSI Recorder No. <u>13252</u>	T-Open <u>3:23 A.M.</u>
(D) Initial Shut-In Pressure	<u>2059</u>	<u>2067</u>	PSI (depth) <u>6870</u>	T-Pulled <u>6:15 A.M.</u>
(E) Second Initial Flow Pressure	<u>825</u>	<u>801</u>	PSI Recorder No. <u>13277</u>	T-Out <u>12:51 P.M.</u>
(F) Second Final Flow Pressure	<u>825</u>	<u>858</u>	PSI (depth) <u>7016</u>	T-Off Location <u>2:30 P.M.</u>
(G) Final Shut-in Pressure	<u>2139</u>	<u>2150</u>	PSI Initial Opening <u>30</u>	Test <input checked="" type="checkbox"/> <u>900⁰⁰</u>
(Q) Final Hydrostatic Mud	<u>3213</u>	<u>3221</u>	PSI Initial Shut-in <u>12</u>	Jars <input checked="" type="checkbox"/> <u>200⁰⁰</u>
			Final Flow <u>5</u>	Safety Joint <input checked="" type="checkbox"/> <u>50⁰⁰</u>
			Final Shut-in <u>120</u>	Straddle <input checked="" type="checkbox"/> <u>250⁰⁰</u>
				Circ. Sub <input checked="" type="checkbox"/> <u>35⁰⁰</u>
				Sampler <input checked="" type="checkbox"/> <u>200⁰⁰</u>
				Extra Packer <input checked="" type="checkbox"/> <u>150⁰⁰</u>
				Elec. Rec. <input checked="" type="checkbox"/> <u>150⁰⁰</u>
				Mileage <u>35⁰⁰</u>
				Other <u>5.5 hrs std by 165⁰⁰</u>

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 Chad McAllister
 Our Representative Scott Bugher

TOTAL PRICE \$ 2100⁰⁰

Well Name City of Liberal
DST Number 81
Recorder Number 13272

A: 3.120 3227
B: .788 832
C: .997 1047
D: 2.015 2096
E: 1.078 1129
F: 1.078 1129
G: 2.145 2230
Q: 3.055 3161

Sp Grav . . 030744161
Oil Vis 8.4875
Comp. .0000232
Vol 1.0537

70702203,026

12600