



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 18969

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation 2005 Formation AAB. Eff. Pay Ft.

District GT, BEND Date 2-25-93 Customer Order No.

COMPANY NAME ABERCROMBEE DRESSING CO.

ADDRESS 150 N. MAIN SUITE 801 WICHITA, KS. 67202

LEASE AND WELL NO. OLIVERIUS #2 COUNTY AUSH STATE KS. Sec. 25 Twp. 18 Rge. 18W

Mail Invoice To SAME Co. Name Address No. Copies Requested 109

Mail Charts To SAME Co. Name Address No. Copies Requested 109

Formation Test No. 1 Interval Tested From 3695 ft. to 3756 ft. Total Depth 3756 ft.

Packer Depth 3690 ft. Size 6 5/8 in. Packer Depth ft. Size in.

Packer Depth 3695 ft. Size 6 5/8 in. Packer Depth ft. Size in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3694 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3697 ft. Recorder Number 13530 Cap. 4175

Below Straddle Recorder Depth ft. Recorder Number Cap.

Drilling Contractor ABERCROMBEE #8 Drill Collar Length I. D. in.

Mud Type CHEM Viscosity 42 Weight Pipe Length 340 I. D. 2.7 in.

Weight 9.1 Water Loss 14.4 cc. Drill Pipe Length 3335 I. D. 3.8 in.

Chlorides 11,000 P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 in.

Jars: Make Serial Number Anchor Length 61 ft. Size 5 1/2 in.

Did Well Flow? Reversed Out Surface Choke Size 3 1/4 in. Bottom Choke Size 3 1/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 in.

Blow IF - WEAK BLOW BUILDING TO 5" DECREASED TO 2"

FF - WEAK BLOW THROUGHOUT 1" TO 2 1/2" BLOW

Recovered 60 ft. of GAS IN PIPE

Recovered 10 ft. of CLEAN OIL GRAVITY 41

Recovered 110 ft. of Muddy OIL 63% OIL 37% GAS 2% WATER 32% MUD

Recovered 120 ft. of Muddy OIL 88% OIL 2% WATER 10% MUD

Recovered 60 ft. of Muddy OIL 66% OIL 2% WATER 32% MUD

Chlorides P.P.M. Sample Jars used 7 Remarks:

60ft Heavy oil - gas cut mud 37% oil 10% gas 53% mud

60ft Heavy oil - gas cut mud 27% oil 20% gas 53% mud

Time On Location 1:15 A.M. Time Pick Up Tool 3:15 P.M. Time Off Location A.M. P.M.

Time Set Packer(s) 4:45 P.M. Time Started Off Bottom 7:45 P.M. Maximum Temperature 112°

Initial Hydrostatic Pressure (A) 1786 P.S.I.

Initial Flow Period MAR 01 1993 Minutes 30 (B) 31 P.S.I. to (C) 72 P.S.I.

Initial Closed In Period Minutes 75 (D) 1080 P.S.I.

Final Flow Period Minutes 60 (E) 104 P.S.I. to (F) 166 P.S.I.

Final Closed In Period Minutes 45 (G) 1008 P.S.I.

Final Hydrostatic Pressure (H) 1786 P.S.I.

COMPANY TERMS

Western Testing Co., Inc. shall not be liable for damages of any kind to 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, of its statements or opinion concerning the results of any test. Tools lost or damaged in the hole shall be paid at cost by the party for whom the test is made.

All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By [Signature] Signature of Customer or his authorized representative

Western Representative [Signature] Thanks

FIELD INVOICE

Open Hole Test \$
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$

WESTERN TESTING CO., INC.

Pressure Data

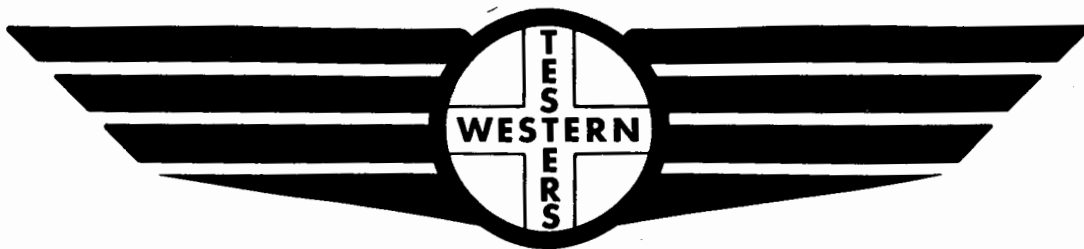
Date 2-25-93 Test Ticket No. 18969
 Recorder No. 10270 Capacity 4150 Location 3756 Ft.
 Clock No. — Elevation 2005 Well Temperature 112 °F

Point	Pressure	Time Given	Time Computed
A Initial Hydrostatic Mud	<u>1790</u> P.S.I.	<u>3 hr</u>	<u>3 hr</u>
B First Initial Flow Pressure	<u>41</u> P.S.I.	<u>30</u> Mins.	<u>30</u> Mins.
C First Final Flow Pressure	<u>89</u> P.S.I.	<u>45</u> Mins.	<u>45</u> Mins.
D Initial Closed-in Pressure	<u>1095</u> P.S.I.	<u>60</u> Mins.	<u>60</u> Mins.
E Second Initial Flow Pressure	<u>108</u> P.S.I.	<u>45</u> Mins.	<u>45</u> Mins.
F Second Final Flow Pressure	<u>164</u> P.S.I.		
G Final Closed-in Pressure	<u>1026</u> P.S.I.		
H Final Hydrostatic Mud	<u>1790</u> P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>41</u>	<u>0</u>	<u>89</u>	<u>0</u>	<u>108</u>	<u>0</u>	<u>164</u>
P 2 <u>5</u>	<u>41</u>	<u>3</u>	<u>416</u>	<u>5</u>	<u>112</u>	<u>3</u>	<u>341</u>
P 3 <u>10</u>	<u>50</u>	<u>6</u>	<u>695</u>	<u>10</u>	<u>116</u>	<u>6</u>	<u>628</u>
P 4 <u>15</u>	<u>60</u>	<u>9</u>	<u>873</u>	<u>15</u>	<u>120</u>	<u>9</u>	<u>790</u>
P 5 <u>20</u>	<u>70</u>	<u>12</u>	<u>954</u>	<u>20</u>	<u>129</u>	<u>12</u>	<u>860</u>
P 6 <u>25</u>	<u>81</u>	<u>15</u>	<u>995</u>	<u>25</u>	<u>135</u>	<u>15</u>	<u>904</u>
P 7 <u>30</u>	<u>89</u>	<u>18</u>	<u>1022</u>	<u>30</u>	<u>139</u>	<u>18</u>	<u>929</u>
P 8 _____		<u>21</u>	<u>1041</u>	<u>35</u>	<u>143</u>	<u>21</u>	<u>946</u>
P 9 _____		<u>24</u>	<u>1051</u>	<u>40</u>	<u>147</u>	<u>24</u>	<u>960</u>
P 10 _____		<u>27</u>	<u>1060</u>	<u>45</u>	<u>152</u>	<u>27</u>	<u>970</u>
P 11 _____		<u>30</u>	<u>1068</u>	<u>50</u>	<u>156</u>	<u>30</u>	<u>981</u>
P 12 _____		<u>33</u>	<u>1074</u>	<u>55</u>	<u>160</u>	<u>33</u>	<u>991</u>
P 13 _____		<u>36</u>	<u>1080</u>	<u>60</u>	<u>164</u>	<u>36</u>	<u>1000</u>
P 14 _____		<u>39</u>	<u>1087</u>			<u>39</u>	<u>1012</u>
P 15 _____		<u>42</u>	<u>1091</u>			<u>42</u>	<u>1018</u>
P 16 _____		<u>45</u>	<u>1095</u>			<u>45</u>	<u>1026</u>
P 17 _____							
P 18 _____							
P 19 _____							
P 20 _____							

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

COMPANY ABERCROMBIE DRILLING CO. LEASE & WELL NO. #2 OLIVERIUS SEC. 25 TWP. 18S RGE. 18W TEST NO. 1 DATE 2/25/93

DST REPORT

GENERAL INFORMATION

DATE : 2/25/93
CUSTOMER : ABERCROMBIE DRILLING CO.
WELL : #2 TEST: 1
ELEVATION: 2005 KB
SECTION : 25
RANGE : 18W COUNTY: RUSH
GAUGE SN#: 10270 RANGE : 4150

TICKET : 18969
LEASE : OLIVERIUS
GEOLOGIST: FRANKAMP
FORMATION: ARBUCKLE
TOWNSHIP : 18S
STATE : KS
CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM: 3695.00 ft TO: 3756.00 ft TVD: 3756.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: OIL
DEPTH OF RECORDERS: 3694.0 ft 3697.0 ft
TEMPERATURE: 112.0

DRILL COLLAR LENGTH:	0.0 ft	I.D.:	0.000 in
WEIGHT PIPE LENGTH :	340.0 ft	I.D.:	2.700 in
DRILL PIPE LENGTH :	3335.0 ft	I.D.:	3.800 in
TEST TOOL LENGTH :	20.0 ft	TOOL SIZE :	5.500 in
ANCHOR LENGTH :	61.0 ft	ANCHOR SIZE:	5.500 in
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:	0.750 in
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :	4.5XH
PACKER DEPTH:	3690.0 ft	SIZE:	6.630 in
PACKER DEPTH:	3695.0 ft	SIZE:	6.630 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in
PACKER DEPTH:	0.0 ft	SIZE:	0.000 in

MUD INFORMATION

DRILLING CON. : ABERCROMBIE RIG 8
MUD TYPE : CHEMICAL
WEIGHT : 9.100 ppg
CHLORIDES : 11000 ppm
JARS-MAKE :
DID WELL FLOW?: NO

VISCOSITY : 42.00 cp
WATER LOSS: 14.400 cc

SERIAL NUMBER:
REVERSED OUT?: NO

COMMENTS

Comment

INITIAL FLOW PERIOD WEAK BLOW BUILDING TO 5 INCHES
DECREASED TO 2 INCHES.
FINAL FLOW PERIOD WEAK BLOW THROUGHOUT - 1 TO

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

2 1/2 INCH BLOW.

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
10.0	100.0	0.0	0.0	0.0	CLEAN OIL GRAVITY 41
110.0	63.0	3.0	2.0	32.0	MUDDY OIL
120.0	88.0	0.0	2.0	10.0	MUDDY OIL
60.0	66.0	0.0	2.0	32.0	MUDDY OIL
60.0	37.0	10.0	0.0	53.0	HEAVY OIL & GAS CUT MUD
60.0	27.0	20.0	0.0	53.0	HEAVY OIL & GAS CUT MUD
0.0	0.0	0.0	0.0	0.0	60 FT GAS ABOVE FLUID
0.0	0.0	0.0	0.0	0.0	

RATE INFORMATION

OIL VOLUME:	2.2374 STB	TOTAL FLOW TIME:	90.0000 min.
GAS VOLUME:	0.9288 SCF	AVERAGE OIL RATE:	52.7225 STB/D
MUD VOLUME:	1.0761 STB	AVERAGE WATER RATE:	1.1062 STB/D
WATER VOLUME:	0.0508 STB		
TOTAL FLUID :	3.3643 STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1786.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	31.00	72.00
INITIAL SHUT-IN	45.00		1080.00
FINAL FLOW	60.00	104.00	166.00
FINAL SHUT-IN	45.00		1008.00

FINAL HYDROSTATIC PRESSURE: 1786.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1790.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	41.00	89.00
INITIAL SHUT-IN	45.00		1095.00
FINAL FLOW	60.00	108.00	164.00
FINAL SHUT-IN	45.00		1026.00

FINAL HYDROSTATIC PRESSURE: 1790.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE : 2/25/93	TICKET : 18969
CUSTOMER : ABERCROMBIE DRILLING CO.	LEASE : OLIVERIUS
WELL : #2	GEOLOGIST: FRANKAMP
ELEVATION: 2005 KB	FORMATION: ARBUCKLE
SECTION : 25	TOWNSHIP : 18S
RANGE : 18W	STATE : KS
GAUGE SN#: 10270	CLOCK : 12
COUNTY: RUSH	
RANGE : 4150	

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	41.00	41.00
5.00	41.00	0.00
10.00	50.00	9.00
15.00	60.00	10.00
20.00	70.00	10.00
25.00	81.00	11.00
30.00	89.00	8.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	416.00	416.00	0.00
6.00	695.00	279.00	0.00
9.00	873.00	178.00	0.00
12.00	954.00	81.00	0.00
15.00	995.00	41.00	0.00
18.00	1022.00	27.00	0.00
21.00	1041.00	19.00	0.00
24.00	1051.00	10.00	0.00
27.00	1060.00	9.00	0.00
30.00	1068.00	8.00	0.00
33.00	1074.00	6.00	0.00
36.00	1080.00	6.00	0.00
39.00	1087.00	7.00	0.00
42.00	1091.00	4.00	0.00
45.00	1095.00	4.00	0.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW

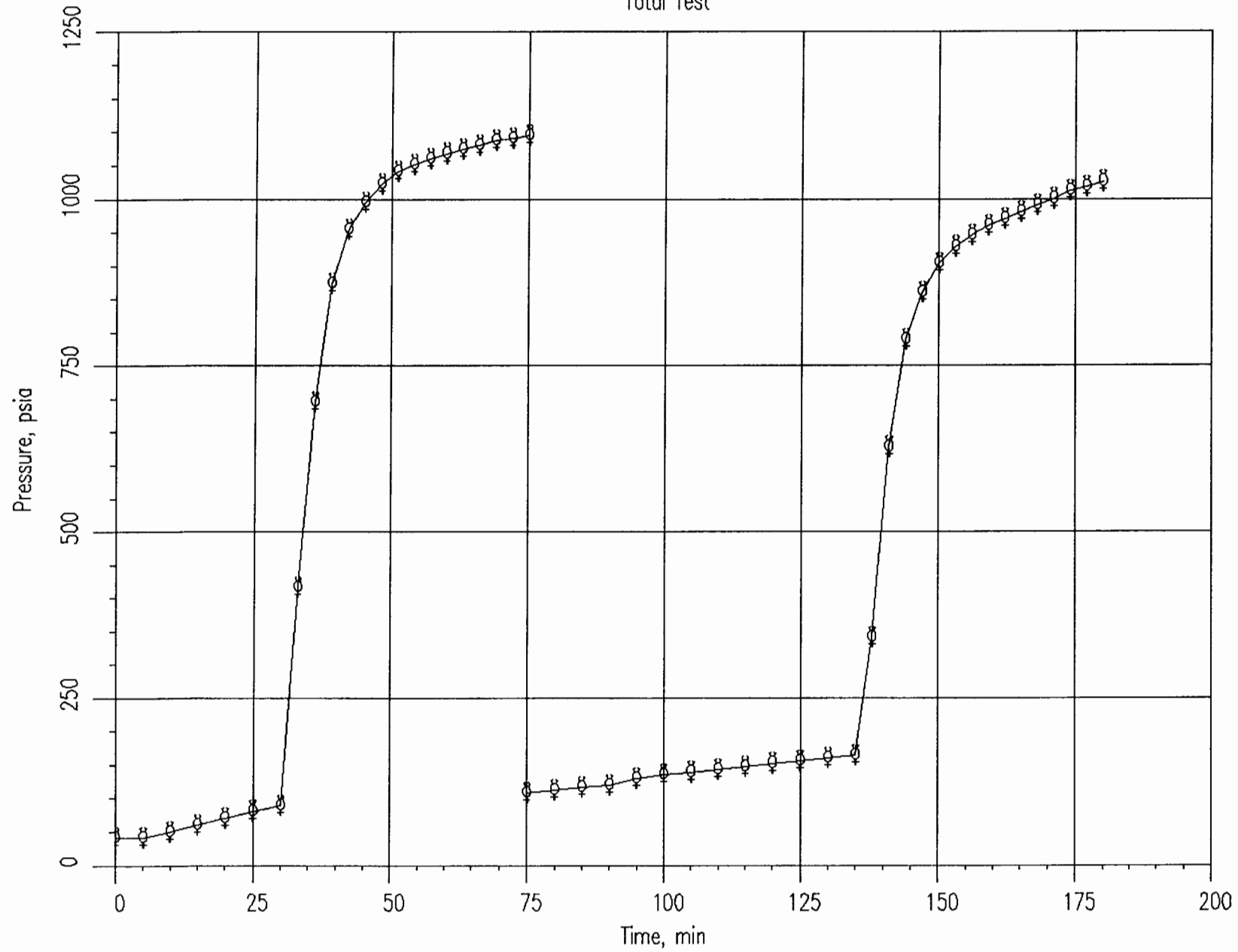
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	108.00	108.00
5.00	112.00	4.00
10.00	116.00	4.00
15.00	120.00	4.00
20.00	129.00	9.00
25.00	135.00	6.00
30.00	139.00	4.00
35.00	143.00	4.00
40.00	147.00	4.00
45.00	152.00	5.00
50.00	156.00	4.00
55.00	160.00	4.00
60.00	164.00	4.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	341.00	341.00	0.00
6.00	628.00	287.00	0.00
9.00	790.00	162.00	0.00
12.00	860.00	70.00	0.00
15.00	904.00	44.00	0.00
18.00	929.00	25.00	0.00
21.00	946.00	17.00	0.00
24.00	960.00	14.00	0.00
27.00	970.00	10.00	0.00
30.00	981.00	11.00	0.00
33.00	991.00	10.00	0.00
36.00	1000.00	9.00	0.00
39.00	1012.00	12.00	0.00
42.00	1018.00	6.00	0.00
45.00	1026.00	8.00	0.00

Profile Plot

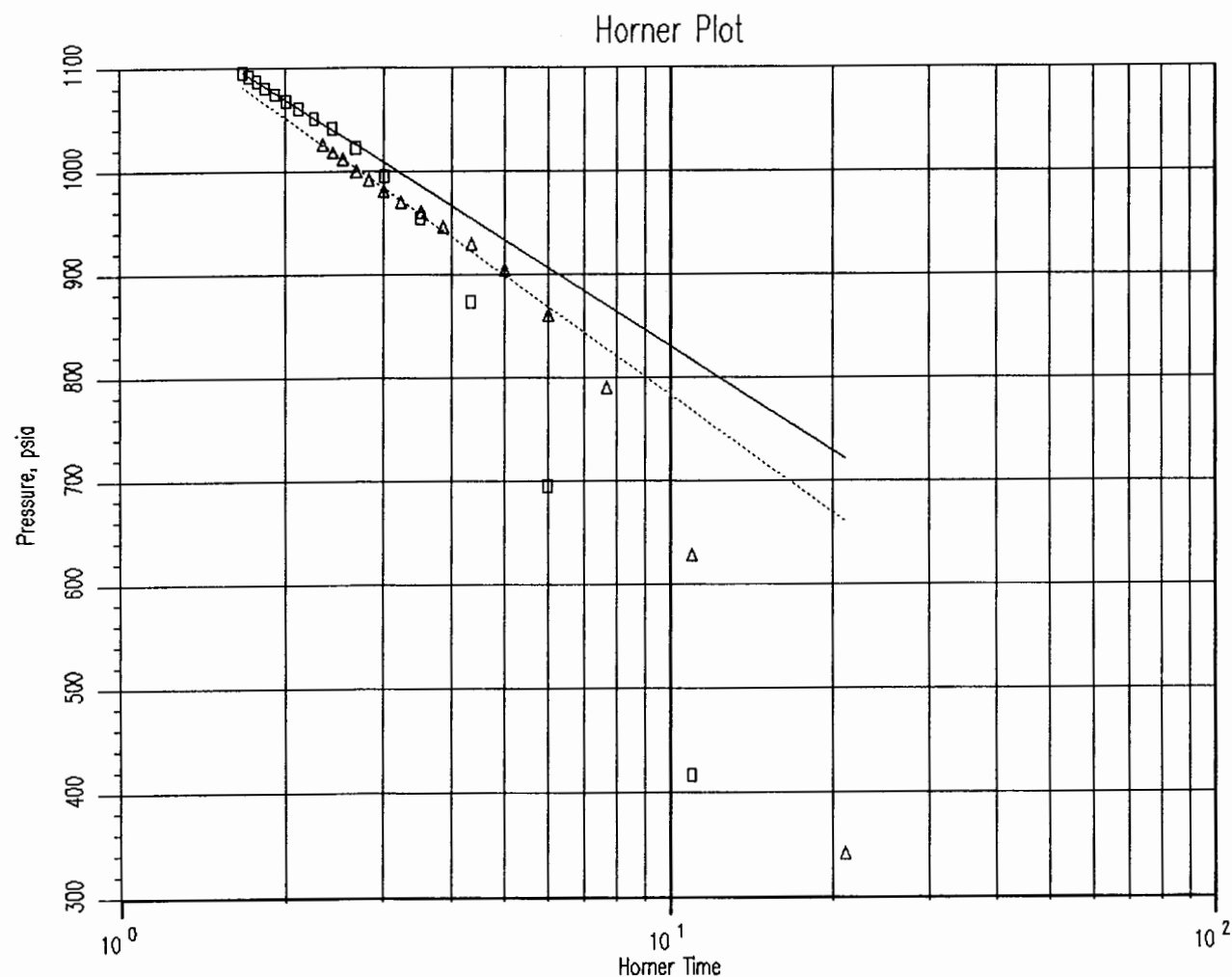
Total Test



DATE 2/25/93
 CUSTOMER ABERCROMBIE DRILLING CO.
 WELL #2
 ELEVATION 2005 KB
 SECTION 25
 RANGE 18W
 GAUGE SN# 10270

TEST 1
 COUNTY RUSH
 RANGE 4150

TICKET 18969
 LEASE OLIVERIUS
 GEOLOGIST FRANKAMP
 FORMATION ARBUCKLE
 TOWNSHIP 18S
 STATE KS
 CLOCK 12



Result

	#1	#2
tp, hrs	0.50	1.00
Slope	-340.25	-381.74
Pstar, psig	1170.40	1164.78
P1hr, psig	1110.49	1049.86
Skin	0.68	-0.25
k, md	5.80	5.17
kh/u, md-ft/cp	28.52	25.42
ri, ft	8.63	11.52
DR, %	1.04	0.82
Drawdown Factor, %		6.301
Drawdown P*, %		0.481

— BUILD 1

..... BUILD 2

HORNER ANALYSIS REPORT

GENERAL INFORMATION

DATE : 2/25/93	TICKET : 18969
CUSTOMER : ABERCROMBIE DRILLING CO.	LEASE : OLIVERIUS
WELL : #2 TEST: 1	GEOLOGIST: FRANKAMP
ELEVATION: 2005 KB	FORMATION: ARBUCKLE
SECTION : 25	TOWNSHIP : 18S
RANGE : 18W COUNTY: RUSH	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

Input Data

Porosity 0.150 Rw: 0.328 ft h: 4.000 ft
 qo 52.7 STB GOR 285.3 SCF/STB

Pvt Data
 Evalutation Pressure : 1095.0
 Evalutation Temperature: 112.0

Oil Grav 41.00 API	Gas Grav 0.65 API	Pb 1095.00 PSIA
Bo 1.132 RBL/STB	Vis 1.000 cp	Ct 3.3669E-004 1/PSI

Horner Results

	Initial Shut-In	Final Shut-In
pseudo pressure time	0.50 hrs	1.00 hrs
slope	-340.25	-381.74
pstar	1170.40 psig	1164.78 psig
plhr	1110.49 psig	1049.86 psig
skin	0.68	-0.25
permeability	5.80 md	5.17 md
transmisability	28.52 md-ft/cp	25.42 md-ft/cp
radius of investigation	8.63 ft	11.52 ft
Damage-Ratio	1 percent	0.82 percent
Drawdown Factor		6.301 percent
Drawdown P*		0.481 percent

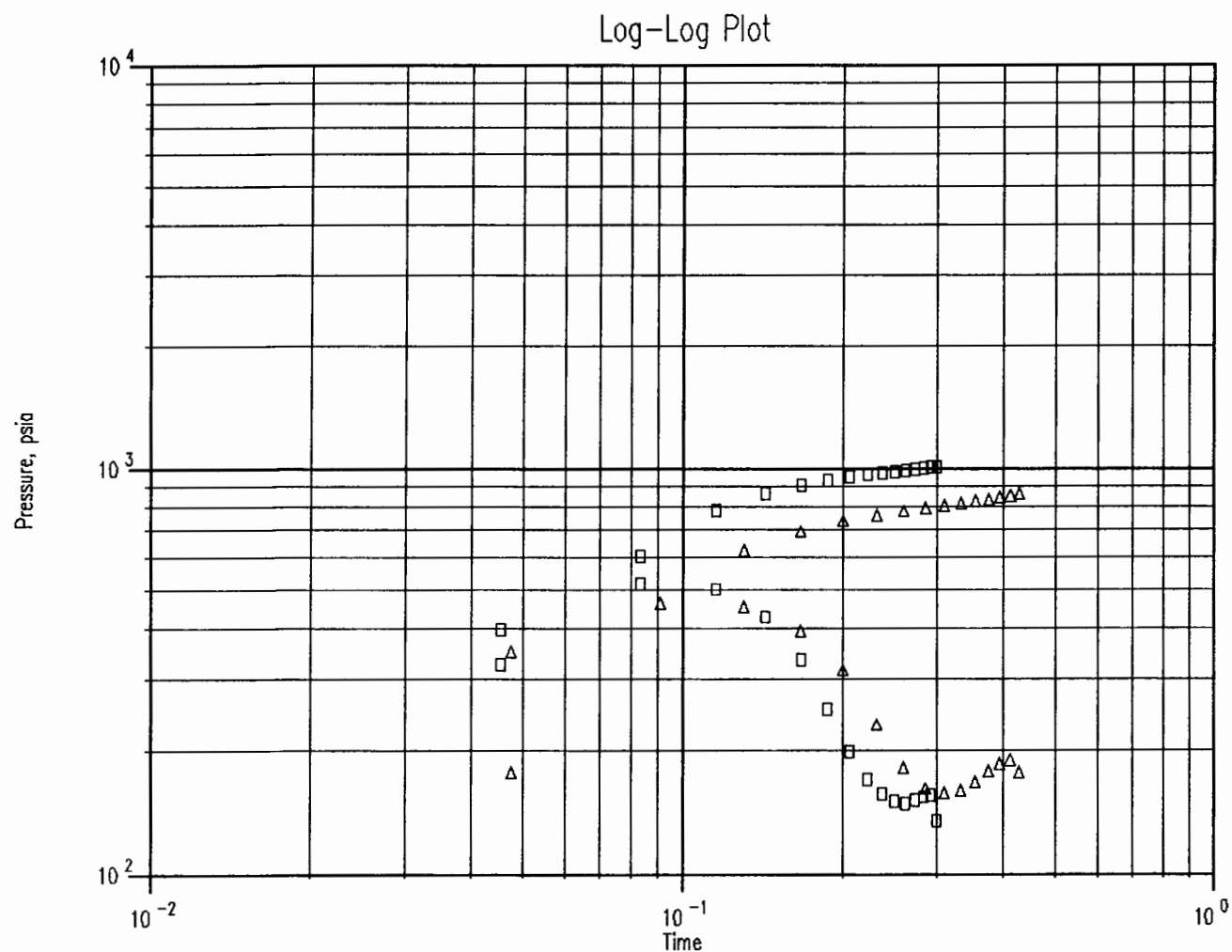
DATE 2/25/93
CUSTOMER ABERCROMBIE DRILLING CO.
WELL #2
ELEVATION 2005 KB
SECTION 25
RANGE 18W
GAUGE SN# 10270

TEST 1

COUNTY RUSH
RANGE 4150

TICKET
LEASE
GEOLOGIST
FORMATION
TOWNSHIP
STATE
CLOCK

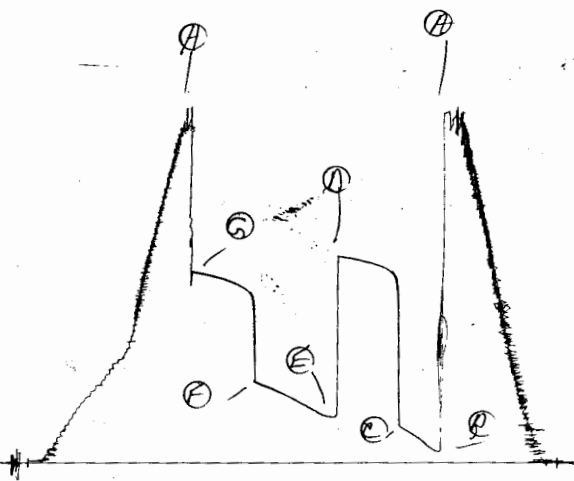
18969
OLIVERIUS
FRANKAMP
ARBUCKLE
18S
KS
12



KT 18970

I

OST #2
10270



KT 18970

O

OST #2
13550





WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET No 18970

P. O. BOX 1599 PHONE (316) 262-5861
WICHITA, KANSAS 67201

Elevation 2005 Formation Arb. Eff. Pay — Ft.

District GT. Bend Date 2-25-93 Customer Order No. —

COMPANY NAME Abercrombie Drilling Co.

ADDRESS 150 N. Main Suite 801 Wichita, Ks. 67202

LEASE AND WELL NO. Oliverius #2 COUNTY Rush STATE Ks Sec. 25 Twp. 18 Rge. 18

Mail Invoice To SAME Co. Name Address No. Copies Requested Reg

Mail Charts To SAME Address No. Copies Requested Reg

Formation Test No. 2 Interval Tested From 3753 ft. to 3760 ft. Total Depth 3760 ft.

Packer Depth 3748 ft. Size 6 3/8 in. Packer Depth — ft. Size — in.

Packer Depth 3753 ft. Size 6 3/8 in. Packer Depth — ft. Size — in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3742 ft. Recorder Number 10270 Cap. 4150

Bottom Recorder Depth (Outside) 3757 ft. Recorder Number 13550 Cap. 4175

Below Straddle Recorder Depth — ft. Recorder Number — Cap. —

Drilling Contractor Abercrombie rig 8 Drill Collar Length — I. D. — in.

Mud Type Chemical Viscosity 51 Weight Pipe Length 370 I. D. 2.7 in.

Weight 9.3 Water Loss 12 cc. Drill Pipe Length 3358 I. D. 3.8 in.

Chlorides 11000 P.P.M. Test Tool Length 25 ft. Tool Size 5 1/2 in.

Jars: Make — Serial Number — Anchor Length 7 ft. Size 5 1/2 in.

Did Well Flow? — Reversed Out — Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 x 1 1/4 in.

Blow: IF - Strong Blow in 4 min.

FF - Strong Blow in 1 min.

Recovered 290 ft. of GAS in Pipe

Recovered 1050 ft. of CLEAN OIL GRAVITY 43

Recovered 40 ft. of OIL + GAS cut mud 10% oil 10% GAS 5% WATER 75% mud

Recovered 60 ft. of OIL cut mud 10% oil 5% WATER 85% mud

Recovered — ft. of

Chlorides — P.P.M. Sample Jars used 4 Remarks:

Time On Location 4:15 A.M. Time Pick Up Tool 4:20 A.M. Time Off Location — A.M.

Time Set Packer(s) 5:50 A.M. Time Started Off Bottom 8:50 A.M. Maximum Temperature 118°

Initial Hydrostatic Pressure (A) 1817 P.S.I.

Initial Flow Period Minutes 30 (B) 41 P.S.I. to (C) 187 P.S.I.

Initial Closed In Period Minutes 45 (D) 1112 P.S.I.

Final Flow Period MAR 01 1993 Minutes 60 (E) 229 P.S.I. to (F) 427 P.S.I.

Final Closed In Period Minutes 45 (G) 1018 P.S.I.

Final Hydrostatic Pressure (H) 1807 P.S.I.

COMPANY TERMS

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All charges subject to 12% interest after 60 days from date of invoice. Any expense incurred for collection will be added to the original amount.

Test Approved By Dave Frankay Signature of Customer or his authorized representative

Western Representative Ray Schwager Thank you

FIELD INVOICE

Open Hole Test \$
Misrun \$
Straddle Test \$
Jars \$
Selective Zone \$
Safety Joint \$
Standby \$
Evaluation \$
Extra Packer \$
Circ. Sub. \$
Mileage \$
Fluid Sampler \$
Extra Charts \$
Insurance \$
Telecopier \$
TOTAL \$

WESTERN TESTING CO., INC.

Pressure Data

Date 2-25-93 Test Ticket No. 18970
 Recorder No. 10270 Capacity 4150 Location 3760 Ft.
 Clock No. — Elevation 2005 Well Temperature 118 °F

Point	Pressure		Time Given	Time Computed
A Initial Hydrostatic Mud	1884 1890	P.S.I.		M
B First Initial Flow Pressure	52	P.S.I.	30 Mins.	30 Mins.
C First Final Flow Pressure	189	P.S.I.	45 Mins.	45 Mins.
D Initial Closed-in Pressure	1116	P.S.I.	60 Mins.	65 Mins.
E Second Initial Flow Pressure	241	P.S.I.	75 Mins.	45 Mins.
F Second Final Flow Pressure	431	P.S.I.		
G Final Closed-in Pressure	1031	P.S.I.		
H Final Hydrostatic Mud	1809	P.S.I.		

PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.		Breakdown: _____ Inc.	
of <u>5</u> mins. and a		of <u>3</u> mins. and a		of <u>5</u> mins. and a		of <u>3</u> mins. and a	
final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.		final inc. of <u>0</u> Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 <u>0</u>	<u>52</u>	<u>0</u>	<u>189</u>	<u>0</u>	241 <u>241</u>	<u>0</u>	<u>431</u>
P 2 <u>5</u>	<u>60</u>	<u>3</u>	<u>809</u>	<u>5</u>	<u>241</u>	<u>3</u>	<u>871</u>
P 3 <u>10</u>	<u>87</u>	<u>6</u>	<u>1014</u>	<u>10</u>	<u>245</u>	<u>6</u>	<u>927</u>
P 4 <u>15</u>	<u>120</u>	<u>9</u>	1045 <u>1045</u>	<u>15</u>	<u>256</u>	<u>9</u>	<u>944</u>
P 5 <u>20</u>	<u>143</u>	<u>12</u>	<u>1049</u>	<u>20</u>	<u>279</u>	<u>12</u>	<u>954</u>
P 6 <u>25</u>	<u>166</u>	<u>15</u>	<u>1060</u>	<u>25</u>	<u>295</u>	<u>15</u>	<u>966</u>
P 7 <u>30</u>	<u>189</u>	<u>18</u>	<u>1066</u>	<u>30</u>	<u>316</u>	<u>18</u>	<u>975</u>
P 8 _____		<u>21</u>	<u>1074</u>	<u>35</u>	<u>335</u>	<u>21</u>	<u>983</u>
P 9 _____		<u>24</u>	<u>1080</u>	<u>40</u>	<u>354</u>	<u>24</u>	<u>991</u>
P10 _____		<u>27</u>	<u>1085</u>	<u>45</u>	<u>370</u>	<u>27</u>	<u>1000</u>
P11 _____		<u>30</u>	<u>1091</u>	<u>50</u>	<u>389</u>	<u>30</u>	<u>1004</u>
P12 _____		<u>33</u>	<u>1095</u>	<u>55</u>	<u>402</u>	<u>33</u>	<u>1010</u>
P13 _____		<u>36</u>	<u>1101</u>	<u>60</u>	<u>418</u>	<u>36</u>	<u>1014</u>
P14 _____		<u>39</u>	<u>1103</u>	<u>65</u>	<u>431</u>	<u>39</u>	<u>1020</u>
P15 _____		<u>42</u>	<u>1109</u>			<u>42</u>	<u>1024</u>
P16 _____		<u>45</u>	<u>1116</u>			<u>45</u>	<u>1031</u>
P17 _____							
P18 _____							
P19 _____							
P20 _____							



Home Office: Wichita, Kansas 67201
P.O. Box 1599 (316) 262-5861
(FAX # 1-316-262-7096)

THIS IS A FAX FROM WESTERN TESTING CO., INC.

ATTENTION: Jerrey Langrehe,

DRILL STEM TEST # 2

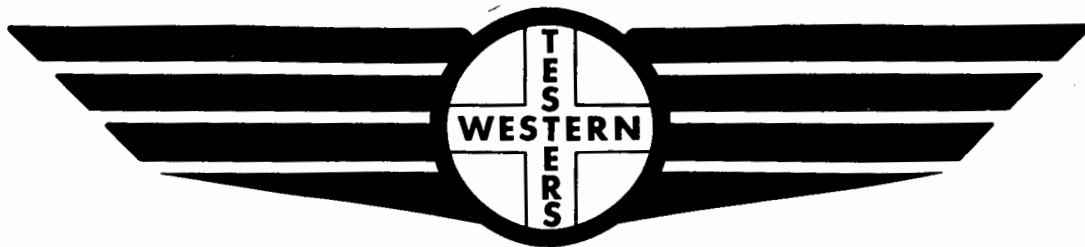
DATE SENT 2-26-92

LEASE & WELL NUMBER Oliverius #2

COVER SHEET & 9 PAGES

IF YOU DO NOT RECEIVE THIS FAX OR DO NOT GET IT CLEARLY,
PLEASE CALL US AT 1-316-262-5861 AND WE WILL RESEND IT.

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

COMPANY ABERCROMBIE DRILLING CO. LEASE & WELL NO. #2 OLIVERIUS SEC. 25 TWP. 18S RGE. 18W TEST NO. 2 DATE 2/25/93

DST REPORT

GENERAL INFORMATION

DATE	: 2/25/93	TICKET	: 18970
CUSTOMER	: ABERCROMBIE DRILLING CO.	LEASE	: OLIVERIUS
WELL	: #2	TEST: 2	GEOLOGIST: FRANKAMP
ELEVATION	: 2005 KB	FORMATION	: ARBUCKLE
SECTION	: 25	TOWNSHIP	: 18S
RANGE	: 18W	COUNTY: RUSH	STATE : KS
GAUGE SN#	: 10270	RANGE : 4150	CLOCK : 12

WELL INFORMATION

PERFORATION INTERVAL FROM:	3753.00 ft	TO:	3760.00 ft	TVD:	3760.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	3742.0 ft		3757.0 ft		
TEMPERATURE:	118.0				
DRILL COLLAR LENGTH:	0.0 ft	I.D.:		0.000 in	
WEIGHT PIPE LENGTH :	370.0 ft	I.D.:		2.700 in	
DRILL PIPE LENGTH :	3358.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	25.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	7.0 ft	ANCHOR SIZE:		5.500 in	
SURFACE CHOKE SIZE :	0.750 in	BOTTOM CHOKE SIZE:		0.750 in	
MAIN HOLE SIZE :	7.875 in	TOOL JOINT SIZE :		4.5XH	
PACKER DEPTH:	3748.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	3753.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON. :	ABERCROMBIE RIG 8	VISCOSITY :	51.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	12.000 cc
WEIGHT :	9.300 ppg	SERIAL NUMBER:	
CHLORIDES :	11000 ppm	REVERSED OUT?:	NO
JARS-MAKE :			
DID WELL FLOW?:	NO		

COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW IN 4 MINUTES.
FINAL FLOW PERIOD STRONG BLOW IN 1 MINUTE.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
1050.0	100.0	0.0	0.0	0.0	CLEAN OIL GRAVITY 43
40.0	10.0	10.0	5.0	75.0	OIL & GAS CUT MUD
60.0	10.0	0.0	5.0	85.0	OIL CUT MUD
0.0	0.0	0.0	0.0	0.0	290 FT GAS ABOVE FLUID

RATE INFORMATION

OIL VOLUME: 12.9233 STB
 GAS VOLUME: 0.1590 SCF
 MUD VOLUME: 0.5736 STB
 WATER VOLUME: 0.0354 STB
 TOTAL FLUID : 13.5323 STB

TOTAL FLOW TIME: 95.0000 min.
 AVERAGE OIL RATE: 201.6859 STB/D
 AVERAGE WATER RATE: 3.4347 STB/D

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1817.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	41.00	187.00
INITIAL SHUT-IN	45.00		1112.00
FINAL FLOW	60.00	229.00	427.00
FINAL SHUT-IN	45.00		1018.00

FINAL HYDROSTATIC PRESSURE: 1807.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1890.00

Description	Duration	p1	p End
INITIAL FLOW	30.00	52.00	189.00
INITIAL SHUT-IN	45.00		1116.00
FINAL FLOW	65.00	241.00	431.00
FINAL SHUT-IN	45.00		1031.00

FINAL HYDROSTATIC PRESSURE: 1809.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 2/25/93	TICKET	: 18970
CUSTOMER	: ABERCROMBIE DRILLING CO.	LEASE	: OLIVERIUS
WELL	: #2	TEST: 2	GEOLOGIST: FRANKAMP
ELEVATION:	2005 KB	FORMATION:	ARBUCKLE
SECTION	: 25	TOWNSHIP	: 18S
RANGE	: 18W	COUNTY:	RUSH
GAUGE SN#:	10270	RANGE	: 4150
		STATE	: KS
		CLOCK	: 12

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	52.00	52.00
5.00	60.00	8.00
10.00	87.00	27.00
15.00	120.00	33.00
20.00	143.00	23.00
25.00	166.00	23.00
30.00	189.00	23.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	809.00	809.00	11.00
6.00	1014.00	205.00	6.00
9.00	1045.00	31.00	4.33
12.00	1049.00	4.00	3.50
15.00	1060.00	11.00	3.00
18.00	1066.00	6.00	2.67
21.00	1074.00	8.00	2.43
24.00	1080.00	6.00	2.25
27.00	1085.00	5.00	2.11
30.00	1091.00	6.00	2.00
33.00	1095.00	4.00	1.91
36.00	1101.00	6.00	1.83
39.00	1103.00	2.00	1.77
42.00	1109.00	6.00	1.71
45.00	1116.00	7.00	1.67

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW

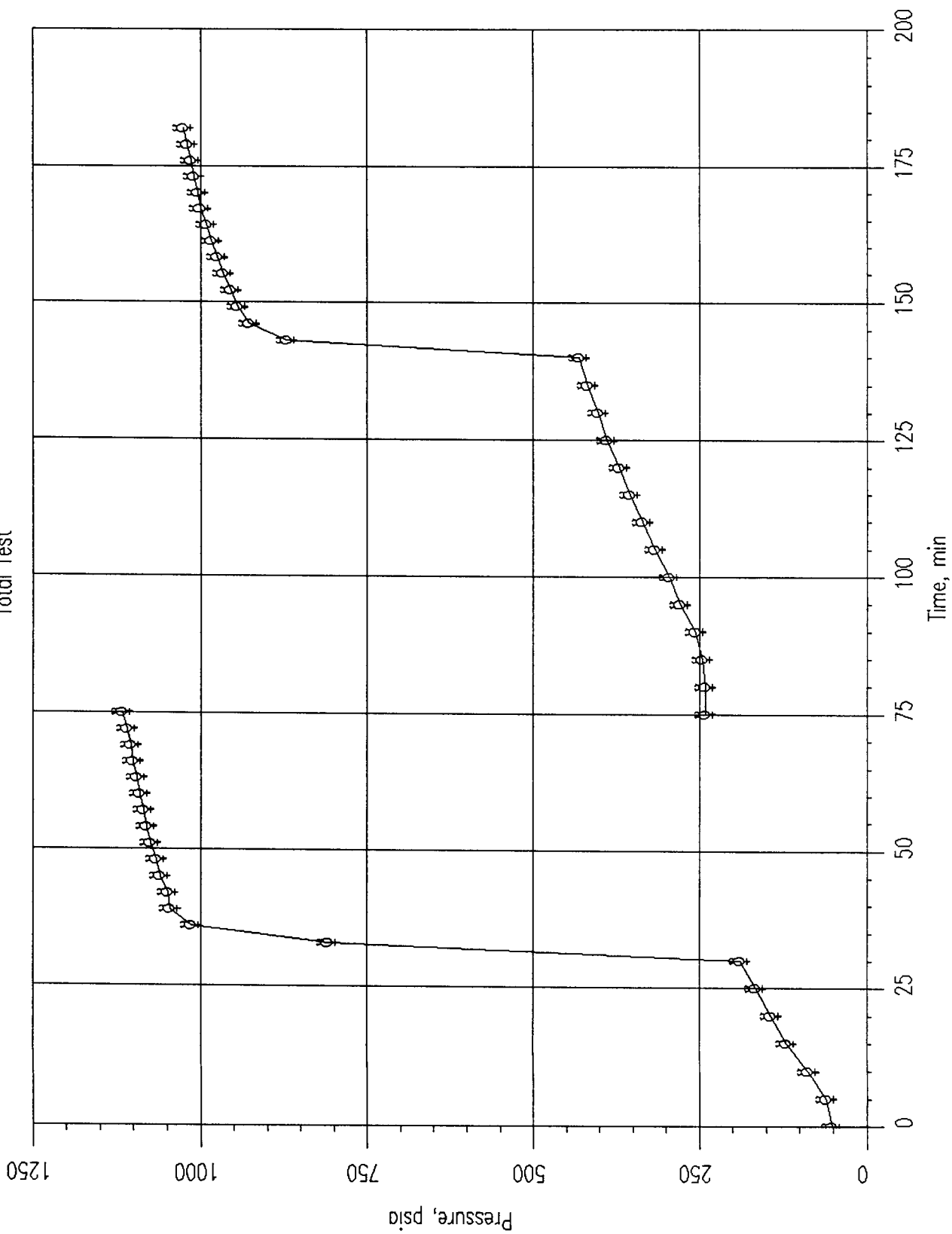
<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>
0.00	241.00	241.00
5.00	241.00	0.00
10.00	245.00	4.00
15.00	256.00	11.00
20.00	279.00	23.00
25.00	295.00	16.00
30.00	316.00	21.00
35.00	335.00	19.00
40.00	354.00	19.00
45.00	370.00	16.00
50.00	389.00	19.00
55.00	402.00	13.00
60.00	418.00	16.00
65.00	431.00	13.00

FINAL SHUT IN

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
3.00	871.00	871.00	21.00
6.00	927.00	56.00	11.00
9.00	944.00	17.00	7.67
12.00	954.00	10.00	6.00
15.00	966.00	12.00	5.00
18.00	975.00	9.00	4.33
21.00	983.00	8.00	3.86
24.00	991.00	8.00	3.50
27.00	1000.00	9.00	3.22
30.00	1004.00	4.00	3.00
33.00	1010.00	6.00	2.82
36.00	1014.00	4.00	2.67
39.00	1020.00	6.00	2.54
42.00	1025.00	5.00	2.43
45.00	1031.00	6.00	2.33

Profile Plot

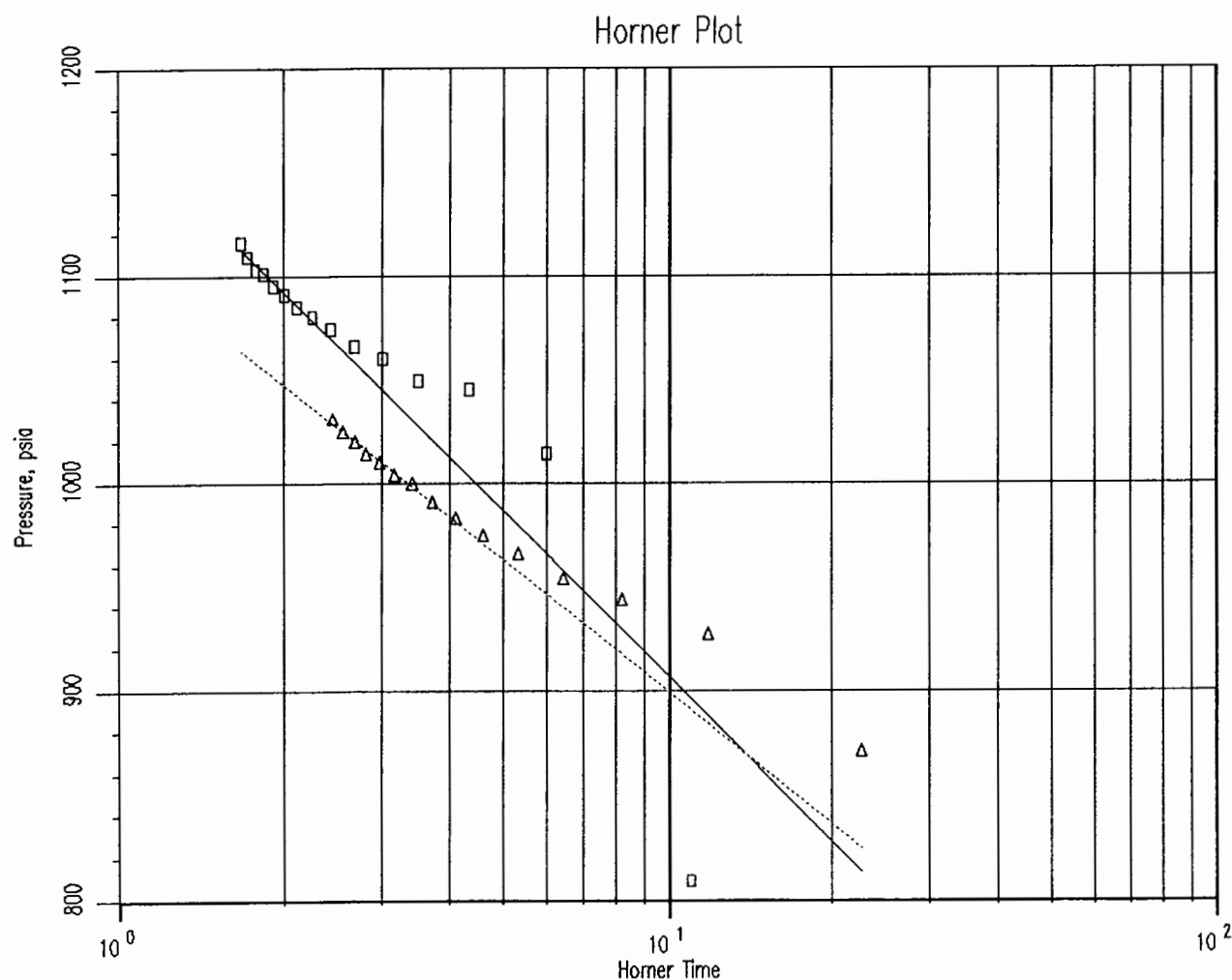
Total Test



DATE 2/25/93
 CUSTOMER ABERCROMBIE DRILLING CO.
 WELL #2
 ELEVATION 2005 KB
 SECTION 25
 RANGE 18W
 GAUGE SN# 10270

TEST 2
 COUNTY RUSH
 RANGE 4150

TICKET 18970
 LEASE OLIVERIUS
 GEOLOGIST FRANKAMP
 FORMATION ARBUCKLE
 TOWNSHIP 18S
 STATE KS
 CLOCK 12



Result

	#1	#2
tp, hrs	0.50	1.08
Slope	-263.44	-210.70
Pstar, psig	1170.79	1110.46
P1hr, psig	1124.40	1043.30
Skin	0.81	-0.26
k, md	13.72	17.15
kh/u, md-ft/cp	142.31	177.94
ri, ft	14.21	23.39
DR, %	1.07	0.85
Drawdown Factor, %		7.616
Drawdown P*, %		5.153

— BUILD 1

- - - BUILD 2

HORNER ANALYSIS REPORT

GENERAL INFORMATION

DATE : 2/25/93	TICKET : 18970
CUSTOMER : ABERCROMBIE DRILLING CO.	LEASE : OLIVERIUS
WELL : #2 TEST: 2	GEOLOGIST: FRANKAMP
ELEVATION: 2005 KB	FORMATION: ARBUCKLE
SECTION : 25	TOWNSHIP : 18S
RANGE : 18W COUNTY: RUSH	STATE : KS
GAUGE SN#: 10270 RANGE : 4150	CLOCK : 12

Input Data

Porosity 0.150 Rw: 0.328 ft h: 7.000 ft
 qo 201.7 STB GOR 301.2 SCF/STB

Pvt Data
 Evalutation Pressure : 1095.0
 Evalutation Temperature: 118.0

Oil Grav 43.00 API	Gas Grav 0.65 API	Pb 1095.00 PSIA
Bo 1.143 RBL/STB	Vis 1.000 cp	Ct 3.5411E-004 1/PSI

Horner Results

	Inital Shut-In	Final Shut-In
pseudo pressure time	0.50 hrs	1.08 hrs
slope	-263.44	-210.70
pstar	1170.79 psig	1110.46 psig
plhr	1124.40 psig	1043.30 psig
skin	0.81	-0.26
permeability	13.72 md	17.15 md
transmisability	142.31 md-ft/cp	177.94 md-ft/cp
radius of investigation	14.21 ft	23.39 ft
Damage-Ratio	1.1 percent	0.85 percent
Drawdown Factor		7.616 percent
Drawdown P*		5.153 percent

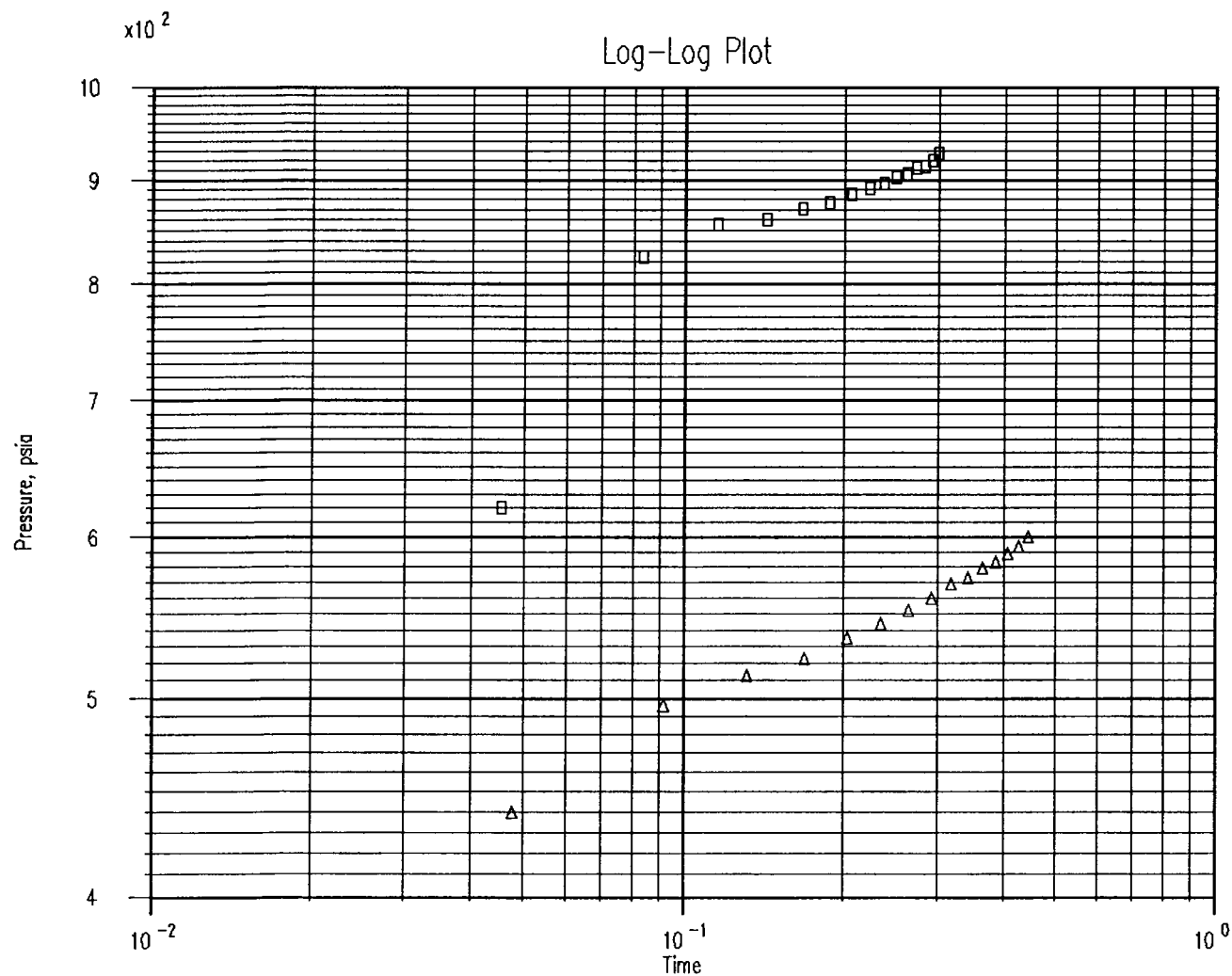
DATE 2/25/93
CUSTOMER ABERCROMBIE DRILLING CO.
WELL #2
ELEVATION 2005 KB
SECTION 25
RANGE 18W
GAUGE SN# 10270

TEST 2

COUNTY RUSH
RANGE 4150

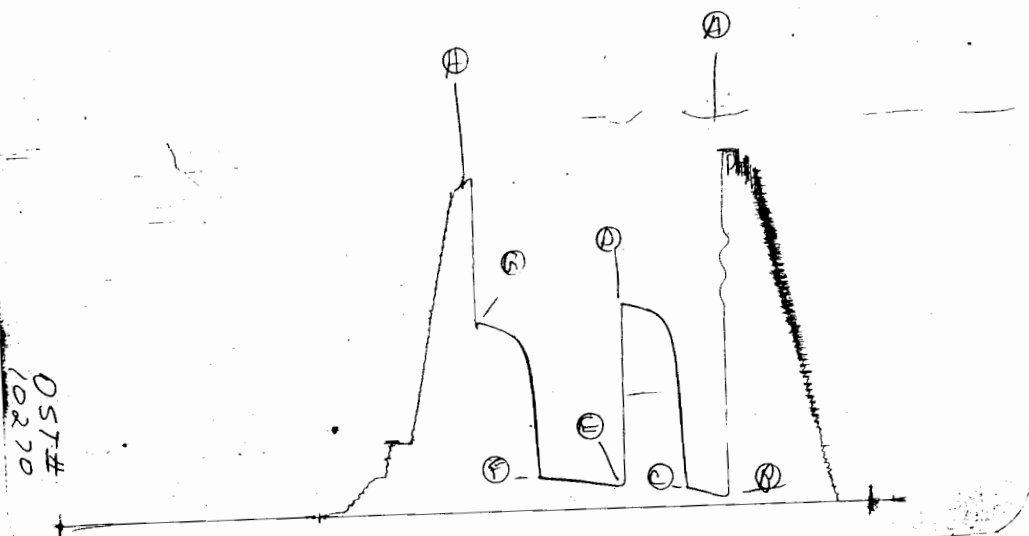
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TOWNSHIP
STATE
CLOCK

18970
OLIVERIUS
FRANKAMP
ARBUCKLE
18S
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JKT 18969

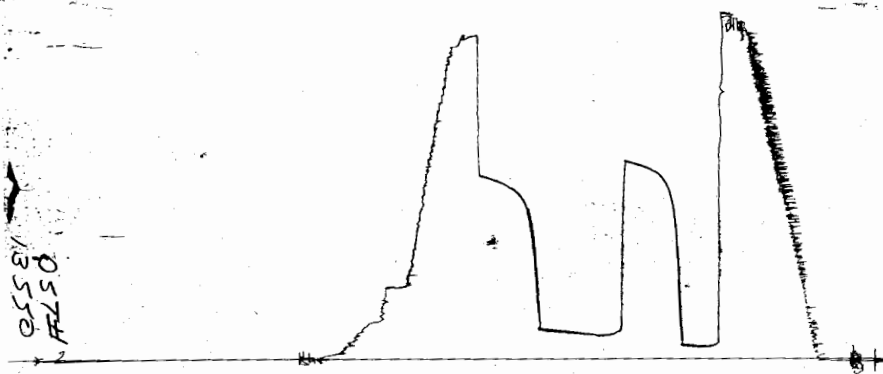
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