



WESTERN TESTING CO., INC.
FORMATION TESTING

TICKET

No. 19001

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

Elevation KB 2883' Formation St. Louis C Eff. Pay 10 Ft.
9% Porosity

District Garden City Date 3-5-93 Customer Order No. _____

COMPANY NAME North American Resources Co.

ADDRESS 16 E. Granite Butte MT. 59701 H25-1 OPSTAD

LEASE AND WELL NO. OPSTAD 35-1 COUNTY Finney STATE Ks Sec. 35 Twp. 22 Rge. 31W

Mail Invoice To NARC 490 N. 31st Street Suite 201 Billings MT 59107-7007 No. Copies Requested Reg

Co. Name Same Address Same No. Copies Requested Reg

Mail Charts To _____ Address _____ No. Copies Requested _____

Formation Test No. 1 Interval Tested From 4840 ft. to 4866 ft. Total Depth 5000 ft.

Packer Depth 4835 ft. Size 6 5/8 in. Packer Depth 4866 ft. Size 6 5/8 in.

Packer Depth 4840 ft. Size 6 5/8 in. Packer Depth _____ ft. Size _____ in.

Depth of Selective Zone Set _____

Top Recorder Depth (Inside) 4847 ft. Recorder Number 1562 Cap. 3900

Bottom Recorder Depth (Outside) 4850 ft. Recorder Number 10242 Cap. 4100

Below Straddle Recorder Depth 4877 ft. Recorder Number 13630 Cap. 4625

Drilling Contractor Murphy 20 Drill Collar Length 410' I. D. 2 1/4 in.

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

Weight 9.2 Water Loss 9.6 cc. Drill Pipe Length 4398 I. D. 3.8 in.

Chlorides 2,000 P.P.M. Test Tool Length 32' ft. Tool Size 5 1/2 in.

Jars: Make 405 Serial Number LTC Anchor Length 26' ft. Size 5 1/2 in.

Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.

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

Blow: Weak 3/4" Blow F/ 5 min I.F.P.

Weak 2" Blow F/ 60 min F.F.P.

Recovered 80' ft. of Slightly oil, cut mud. 1% oil 99% mud

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Recovered _____ ft. of _____

Chlorides _____ P.P.M. Sample Jars used _____ Remarks (Tail Pipe = 134') (115' collars, 19' 5 1/2 Perf)

(Total Fluid 80')

Time On Location 12:30 A.M. Time Pick Up Tool 2:30 A.M. Time Off Location _____ A.M.

Time Set Packer(s) 4:37 A.M. Time Started Off Bottom 8:42 A.M. Maximum Temperature 122° F

Initial Hydrostatic Pressure _____ (A) 2399 P.S.I.

Initial Flow Period _____ Minutes 5 (B) 40 P.S.I. to (C) 40 P.S.I.

Initial Closed In Period _____ Minutes 60 (D) 857 P.S.I.

Final Flow Period _____ Minutes 60 (E) 40 P.S.I. to (F) 60 P.S.I.

Final Closed In Period _____ Minutes 120 (G) 857 P.S.I.

Final Hydrostatic Pressure _____ (H) 2389 P.S.I.

_____ (1562)

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 Wesley Hansen
Signature of Customer or his authorized representative

Western Representative Brad Borg Thank you.

(Bill murfin)

FIELD INVOICE

Open Hole Test ☒ \$ 600.00
Misrun ☐ \$ _____
Straddle Test ☒ \$ 250.00
Jars ☒ \$ 225.00
Selective Zone ☐ \$ _____
Safety Joint ☒ \$ 25.00
Standby ☐ \$ _____
Evaluation ☒ \$ 50.00
Extra Packer ☒ \$ 150.00
Circ. Sub. ☒ \$ 35.00
Mileage ☐ \$ _____
Fluid Sampler ☒ \$ 200.00
Extra Charts ☐ \$ _____
Insurance ☐ \$ _____
Telecopier ☐ \$ _____
TOTAL \$ 1500.00



Fluid Sample Report

Date 3-5-93 Ticket No. 19001
Company North American Resources, Co.
Well Name & No. Opstad 35-1 DST No. 1
County Finney State Ks
Sampler No. 201 Test Interval 4840 - 4866

Pressure in Sampler 0 PSIG BHT 122° F OF

Total Volume of Sampler 2500 cc.

Total Volume of Sample: 1600 cc.

Oil: _____ cc.

Water: _____ cc.

Mud: (1600 slightly oil cut) cc.

Gas: _____ cu. ft.

Other: _____

Resistivity

Water: _____ @ _____ of Chloride Content _____ ppm.

Mud Pit Sample 2.2 @ 55° of Chloride Content 3,300 ppm.

Gas/Oil Ratio _____ Gravity _____ °API @ _____ OF

Where was sample drained On Location

Remarks: _____

M76E L
WESTERN TESTING CO., INC.
Pressure Data

Fr. Pay.
Per.

Date 3-5-93

Test Ticket No. 19001

Recorder No. 1562 Capacity 3900 Location 4847 Ft.

Clock No. 001001 Elevation KB 2883 Well Temperature 122°F °F

Point	Pressure	Open Tool	Time Given	Time Computed
A Initial Hydrostatic Mud <u>(2430)</u>	<u>2409</u> P.S.I.		<u>245</u> M	<u>250</u>
B First Initial Flow Pressure	<u>38</u> P.S.I.	First Flow Pressure	<u>5</u> Mins.	<u>5</u> Mins.
C First Final Flow Pressure	<u>38</u> P.S.I.	Initial Closed-in Pressure	<u>60</u> Mins.	<u>60</u> Mins.
D Initial Closed-in Pressure	<u>857</u> P.S.I.	Second Flow Pressure	<u>60</u> Mins.	<u>65</u> Mins.
E Second Initial Flow Pressure	<u>40</u> P.S.I.	Final Closed-in Pressure	<u>120</u> Mins.	<u>120</u> Mins.
F Second Final Flow Pressure	<u>62</u> P.S.I.			
G Final Closed-in Pressure	<u>859</u> P.S.I.			
H Final Hydrostatic Mud <u>(2420)</u>	<u>2399</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 _____ mins. and a		of _____ mins. and a		of _____ mins. and a		of _____ mins. and a	
final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.		final inc. of _____ Min.	
Point Mins.	Press.	Point Minutes	Press.	Point Minutes	Press.	Point Minutes	Press.
P 1 105		63		105		63 <u>860</u>	<u>857</u>
P 2 110		66		110		66 <u>860</u>	<u>857</u>
P 3 115		69		115		69 <u>860</u>	<u>857</u>
P 4 120		72		120		72 <u>860</u>	<u>857</u>
P 5 125		75		125		75 <u>860</u>	<u>857</u>
P 6 130		78		130		78 <u>860</u>	<u>857</u>
P 7 135		81		135		81 <u>860</u>	<u>857</u>
P 8 140		84		140		84 <u>860</u>	<u>857</u>
P 9 145		87		145		87 <u>860</u>	<u>857</u>
P10 150		90		150		90 <u>860</u>	<u>857</u>
P11 155		93		155		93 <u>860</u>	<u>857</u>
P12 160		96		160		96 <u>862</u>	<u>859</u>
P13 165		99		165		99 <u>862</u>	<u>859</u>
P14 170		102		170		102 <u>862</u>	<u>859</u>
P15 175		105		175		105 <u>862</u>	<u>859</u>
P16 180		108		180		108 <u>862</u>	<u>859</u>
P17 185		111		185		111 <u>862</u>	<u>859</u>
P18 190		114		190		114 <u>862</u>	<u>859</u>
P19 195		117		195		117 <u>862</u>	<u>859</u>
P20 200		120		200		120 <u>862</u>	<u>859</u>

Page 1
WESTERN TESTING CO., INC.
Pressure Data

Fat. Pay
Per:

3-5-93

Test Ticket No. 19001

Order No. 1562

Capacity 3900

Location 4847

Job No. 001001

Elevation KB 2883

Well Temperature 122°F

Initial Pressure
Initial Hydrostatic Modulus (2430) 2409 P.S.I.
First Initial Flow Pressure 38 P.S.I.
First Final Flow Pressure 38 P.S.I.
Initial Closed-In Pressure 857 P.S.I.
Second Initial Flow Pressure 40 P.S.I.
Second Final Flow Pressure 62 P.S.I.
Final Closed-In Pressure 859 P.S.I.
Final Hydrostatic Modulus (2420) 2399 P.S.I.

Open Tool
Time Given 245
Time Computed 250
First Flow Pressure 5 Min
Initial Closed-In Pressure 60 Min
Second Flow Pressure 60 Min
Final Closed-In Pressure 120 Min

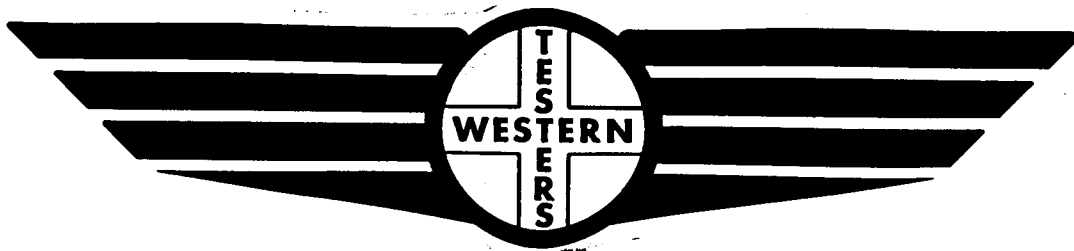
PRESSURE BREAKDOWN

First Flow Pressure		Initial Shut-In		Second Flow Pressure		Final Shut-In	
Breakdown: _____ loc		Breakdown: _____ loc		Breakdown: _____ loc		Breakdown: _____ loc	
of 5 min and a		of 3 min and a		of 5 min and a		of 3 min and a	
final loc of 0 Min		final loc of 0 Min		final loc of 0 Min		final loc of 0 Min	
Point Min	Press	Point Minutes	Press	Point Minutes	Press	Point Minutes	Press
P 1 0.38	38	0 38	38	0 40	40	0 62	62
P 2 5.38	38	3 342	342	5 40	40	3 360	360
P 3 10		6 796	793	10 40	40	6 744	742
P 4 15		9 820	817	15 40	40	9 812	809
P 5 20		12 840	837	20 42	42	12 825	821
P 6 25		15 845	843	25 42	42	15 835	833
P 7 30		18 848	845	30 42	42	18 840	837
P 8 35		21 854	851	35 46	46	21 844	841
P 9 40		24 855	853	40 48	48	24 846	843
P 10 45		27 858	855	45 50	50	27 850	847
P 11 50		30 858	855	50 52	52	30 850	847
P 12 55		33 860	857	55 56	56	33 854	851
P 13 60		36 860	857	60 60	60	36 856	853
P 14 65		39 860	857	65 62	62	39 856	853
P 15 70		42 860	857	70		42 858	855
P 16 75		45 860	857	75		45 858	855
P 17 80		48 860	857	80		48 858	855
P 18 85		51 860	857	85		51 858	855
P 19 90		54 860	857	90		54 858	855
P 20 95		57 860	857	95		57 858	855
100		60 860	857	100		60 860	857

15-055-21163

35-22s-31w

FORMATION TEST REPORT



Home Office:

Wichita, Kansas 67201

P.O. Box 1599

Phone 1 - 800-688-7021

DST REPORT

GENERAL INFORMATION

DATE	: 3-5-93	TICKET	: 19001
CUSTOMER	: NORTH AMERICAN RESOURCES	LEASE	: OPSTAD
WELL	: 35-1	TEST:	1
ELEVATION	: 2883 K.B.	GEOLOGIST	: WESLEY HANSEN
SECTION	: 35	FORMATION	: ST. LOUIS C
RANGE	: 31W	TOWNSHIP	: 22S
GAUGE SN#	: 1562	STATE	: KS
	COUNTY: FINNEY	CLOCK	: 12
	RANGE : 5000		

WELL INFORMATION

PERFORATION INTERVAL FROM:	4840.00 ft	TO:	4866.00 ft	TVD:	5000.0 ft
DEPTH OF SELECTIVE ZONE:				TEST TYPE:	OIL
DEPTH OF RECORDERS:	4847.0 ft		4850.0 ft		
TEMPERATURE:	122.0				
DRILL COLLAR LENGTH:	410.0 ft	I.D.:		2.250 in	
WEIGHT PIPE LENGTH :	0.0 ft	I.D.:		0.000 in	
DRILL PIPE LENGTH :	4398.0 ft	I.D.:		3.800 in	
TEST TOOL LENGTH :	32.0 ft	TOOL SIZE :		5.500 in	
ANCHOR LENGTH :	26.0 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:	4835.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4840.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	4866.0 ft	SIZE:		6.630 in	
PACKER DEPTH:	0.0 ft	SIZE:		0.000 in	

MUD INFORMATION

DRILLING CON. :	MURFIN #20	VISCOSITY :	51.00 cp
MUD TYPE :	CHEMICAL	WATER LOSS:	9.600 cc
WEIGHT :	9.200 ppg		
CHLORIDES :	2000 ppm	SERIAL NUMBER:	WTC
JARS-MAKE :	400	REVERSED OUT?:	NO
DID WELL FLOW?:	NO		

COMMENTS

Comment

WEAK 3/4' BLOW FOR 5 MIN. ON INITIAL FLOW PERIOD.
WEAK 2" BLOW FOR 60 MIN. ON FINAL FLOW PERIOD.
TAIL PIPE = 134' 115' COLLARS 19' 5.5 PERF.

DST REPORT (CONTINUED)

COMMENTS (CONTINUED)

Comment _____

FLUID RECOVERY

Feet of Fluid	% Oil	% Gas	% Water	% Mud	Comments
80.0	1.0	0.0	0.0	99.0	SLI. OIL CUT MUD

RATE INFORMATION

OIL VOLUME:	0.0039	STB		
GAS VOLUME:	0.0000	SCF	TOTAL FLOW TIME:	70.0000 min.
MUD VOLUME:	0.3895	STB	AVERAGE OIL RATE:	8.0928 STB/D
WATER VOLUME:	0.0000	STB	AVERAGE WATER RATE:	0.0000 STB/D
TOTAL FLUID :	0.3934	STB		

FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2399.00

Description	Duration	p1	p End
INITIAL FLOW	5.00	40.00	40.00
INITIAL SHUT-IN	60.00		857.00
FINAL FLOW	60.00	40.00	60.00
FINAL SHUT-IN	120.00		857.00

FINAL HYDROSTATIC PRESSURE: 2389.00

DST REPORT (CONTINUED)

OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 2409.00

Description	Duration	p1	p End
INITIAL FLOW	5.00	38.00	38.00
INITIAL SHUT-IN	60.00		857.00
FINAL FLOW	65.00	40.00	62.00
FINAL SHUT-IN	120.00		859.00

FINAL HYDROSTATIC PRESSURE: 2399.00

PRESSURE TRANSIENT REPORT

GENERAL INFORMATION

DATE	: 3-5-93	TICKET	: 19001
CUSTOMER	: NORTH AMERICAN RESOURCES	LEASE	: OPSTAD
WELL	: 35-1	TEST:	1
ELEVATION:	2883 K.B.	GEOLOGIST:	WESLEY HANSEN
SECTION	: 35	FORMATION:	ST. LOUIS C
RANGE	: 31W	TOWNSHIP	: 22S
GAUGE SN#:	1562	STATE	: KS
	COUNTY: FINNEY	CLOCK	: 12
	RANGE : 500C		

INITIAL FLOW

Time (min)	Pressure	Delta P
0.00	38.00	38.00
5.00	38.00	0.00

INITIAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	342.00	342.00	0.00
6.00	793.00	451.00	0.00
9.00	817.00	24.00	0.00
12.00	837.00	20.00	0.00
15.00	843.00	6.00	0.00
18.00	845.00	2.00	0.00
21.00	851.00	6.00	0.00
24.00	853.00	2.00	0.00
27.00	855.00	2.00	0.00
30.00	856.00	1.00	0.00
33.00	857.00	1.00	0.00
36.00	857.00	0.00	0.00
39.00	857.00	0.00	0.00
42.00	857.00	0.00	0.00
45.00	857.00	0.00	0.00
48.00	857.00	0.00	0.00
51.00	857.00	0.00	0.00
54.00	857.00	0.00	0.00
57.00	857.00	0.00	0.00
60.00	857.00	0.00	0.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL FLOW

Time (min)	Pressure	Delta P
0.00	40.00	40.00
5.00	40.00	0.00
10.00	41.00	1.00
15.00	41.00	0.00
20.00	42.00	1.00
25.00	42.00	0.00
30.00	43.00	1.00
35.00	46.00	3.00
40.00	48.00	2.00
45.00	50.00	2.00
50.00	52.00	2.00
55.00	56.00	4.00
60.00	60.00	4.00
65.00	62.00	2.00

FINAL SHUT IN

Time (min)	Pressure	Delta P	Horner T
3.00	360.00	360.00	0.00
6.00	742.00	382.00	0.00
9.00	809.00	67.00	0.00
12.00	821.00	12.00	0.00
15.00	833.00	12.00	0.00
18.00	837.00	4.00	0.00
21.00	841.00	4.00	0.00
24.00	843.00	2.00	0.00
27.00	845.00	2.00	0.00
30.00	847.00	2.00	0.00
33.00	851.00	4.00	0.00
36.00	853.00	2.00	0.00
39.00	854.00	1.00	0.00
42.00	855.00	1.00	0.00
45.00	856.00	1.00	0.00
48.00	856.00	0.00	0.00
51.00	856.00	0.00	0.00
54.00	856.00	0.00	0.00
57.00	856.00	0.00	0.00
60.00	856.00	0.00	0.00
63.00	857.00	1.00	0.00
66.00	857.00	0.00	0.00
69.00	857.00	0.00	0.00
72.00	857.00	0.00	0.00

PRESSURE TRANSIENT REPORT (CONTINUED)

FINAL SHUT IN (CONTINUED)

<u>Time (min)</u>	<u>Pressure</u>	<u>Delta P</u>	<u>Horner T</u>
75.00	858.00	1.00	0.00
78.00	858.00	0.00	0.00
81.00	858.00	0.00	0.00
84.00	858.00	0.00	0.00
87.00	858.00	0.00	0.00
90.00	858.00	0.00	0.00
93.00	859.00	1.00	0.00
96.00	859.00	0.00	0.00
99.00	859.00	0.00	0.00
102.00	859.00	0.00	0.00
105.00	859.00	0.00	0.00
108.00	859.00	0.00	0.00
111.00	859.00	0.00	0.00
114.00	859.00	0.00	0.00
117.00	859.00	0.00	0.00
120.00	859.00	0.00	0.00

FLUID SAMPLE REPORT

GENERAL INFORMATION

DATE	: 3-5-93	TICKET	: 19001
CUSTOMER	: NORTH AMERICAN RESOURCES	LEASE	: OPSTAD
WELL	: 35-1	TEST	: 1
ELEVATION	: 2883 K.B.	GEOLOGIST	: WESLEY HANSEN
SECTION	: 35	FORMATION	: ST. LOUIS C
RANGE	: 31W	TOWNSHIP	: 22S
GAUGE SN#	: 1562	STATE	: KS
		CLOCK	: 12
	COUNTY: FINNEY		
	RANGE : 5000		

SAMPLE INFORMATION

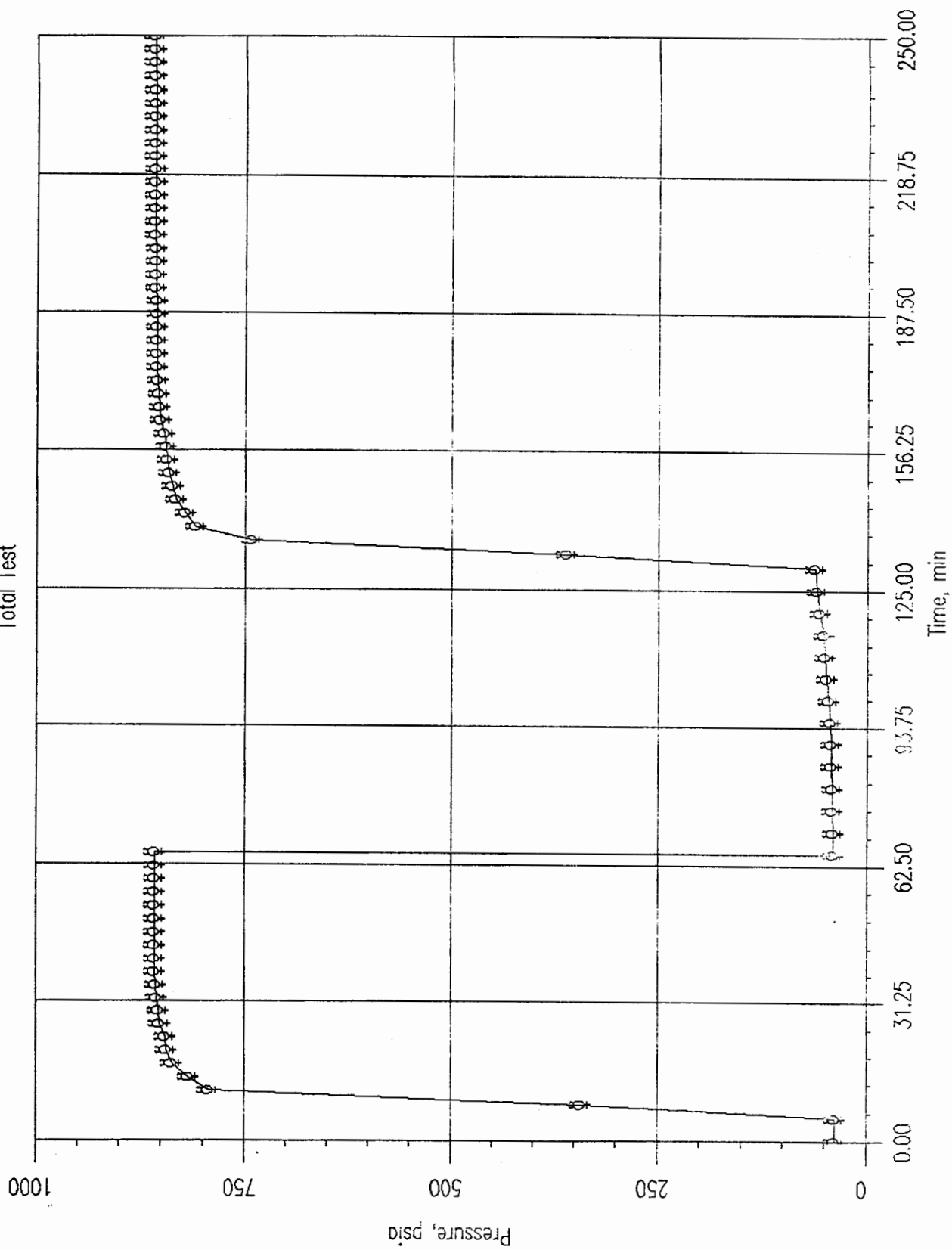
PRESSURE IN SAMPLER:	0.00 PSIG	BHT:	122.0 DEG F
TOTAL VOLUME OF SAMPLER:	2500.00 cc		
TOTAL VOLUME OF SAMPLE:	1600.00 cc		
OIL:	0.00 cc		
WATER:	0.00 cc		
MUD:	1600.00 cc		
GAS:	0.00 cc		
OTHER:	0.00 cc		

RESISTIVITY

DRILLING MUD:	CHLORIDE CONTENT:	0.00 ppm
MUD PIT SAMPLE: 2.2 AT 55 DEGREES F.	CHLORIDE CONTENT:	3300.00 ppm
GAS/OIL RATIO:	GRAVITY:	
WHERE WAS SAMPLE DRAINED: ON LOCATION		
REMARKS:		

Profile Plot

Total Test



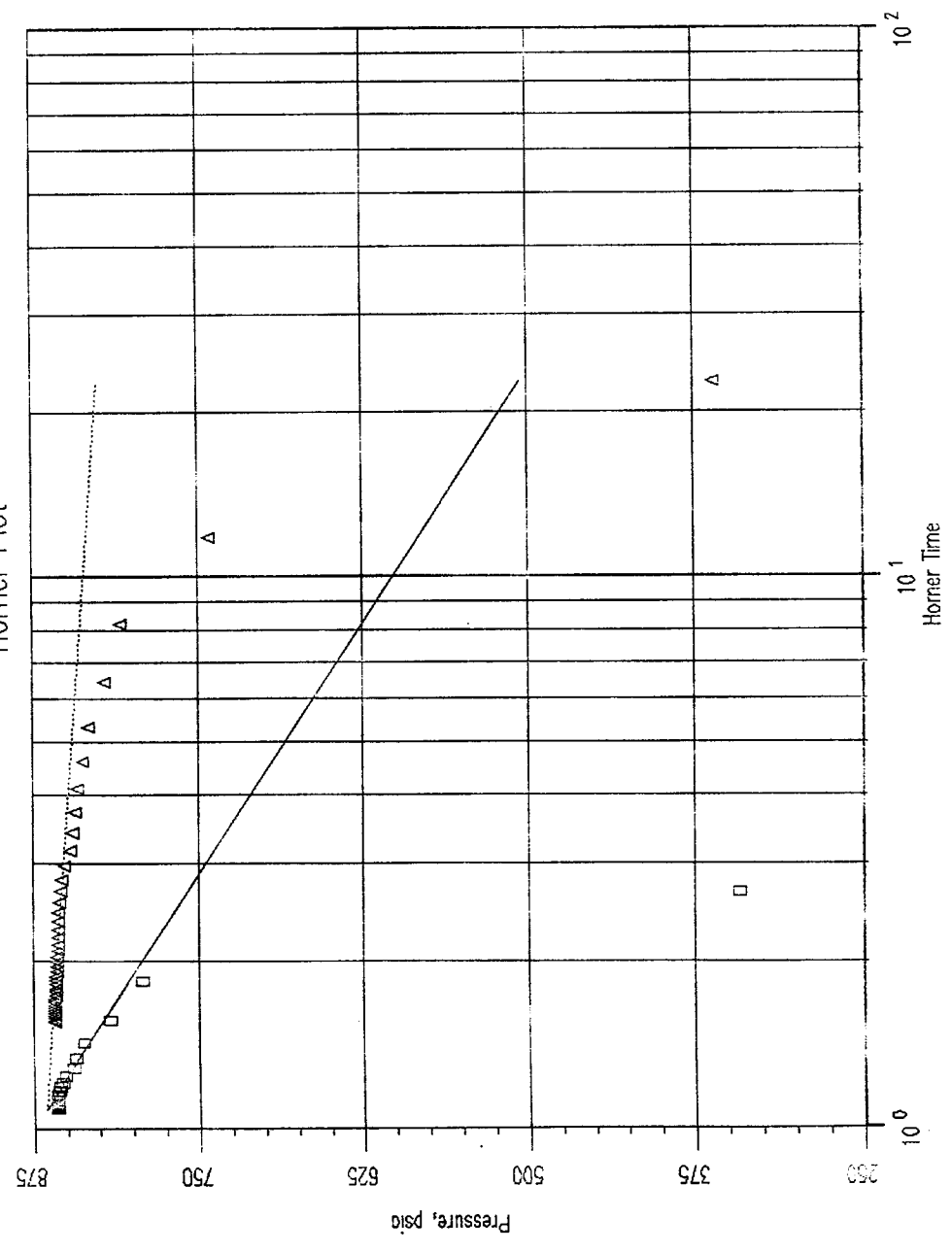
DATE 3-5-93
 CUSTOMER NORTH AMERICAN RESOURCES
 WELL 35-1
 ELEVATION 2883 K.B.
 SECTION 35
 RANGE 31W
 GAUGE SN# 1562

TEST 1

COUNTY FINNEY
 RANGE 5000

TICKET 19001
 LEASE OPSTAD
 GEOLOGIST WESLEY HANSEN
 FORMATION ST. LOUIS C
 TOWNSHIP 22S
 STATE KS
 CLOCK 12

Horner Plot



Result

	#1	#2
tp, hrs	0.08	1.08
Slope	-272.50	-30.06
Pstar, psig	875.01	866.51
P1hr, psig	865.53	856.93
Skin	10.31	35.19
k, md	1.13	10.25
kh/u, md-ft/cp	5.22	47.33
ri, ft	0.00	0.01
DR, %	-0.63	-6.87
Drawdown Factor, %		-0.233
Drawdown P*, %		0.971

— BUILD 1
 BUILD 2

HORNER ANALYSIS REPORT

GENERAL INFORMATION

DATE : 3-5-93	TICKET : 19001
CUSTOMER : NORTH AMERICAN RESOURCES	LEASE : OPSTAD
WELL : 35-1 TEST: 1	GEOLOGIST: WESLEY HANSEN
ELEVATION: 2883 K.B.	FORMATION: ST. LOUIS C
SECTION : 35	TOWNSHIP : 22S
RANGE : 31W COUNTY: FINNEY	STATE : KS
GAUGE SN#: 1562 RANGE : 5000	CLOCK : 12

Input Data

Porosity 0.900 Rw: 0.328 ft h: 10.000 ft

qo 8.1 STB GOR 151.6 SCF/STB

Pvt Data

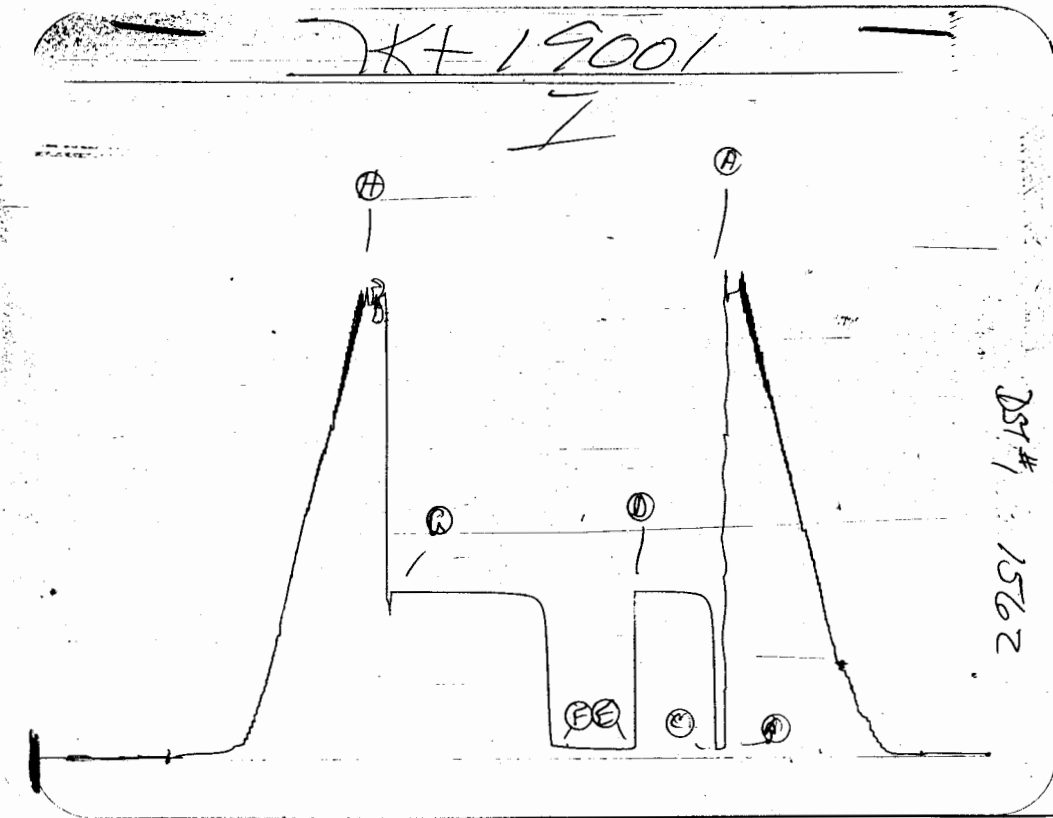
Evalutation Pressure : 857.0

Evalutation Temperature: 122.0

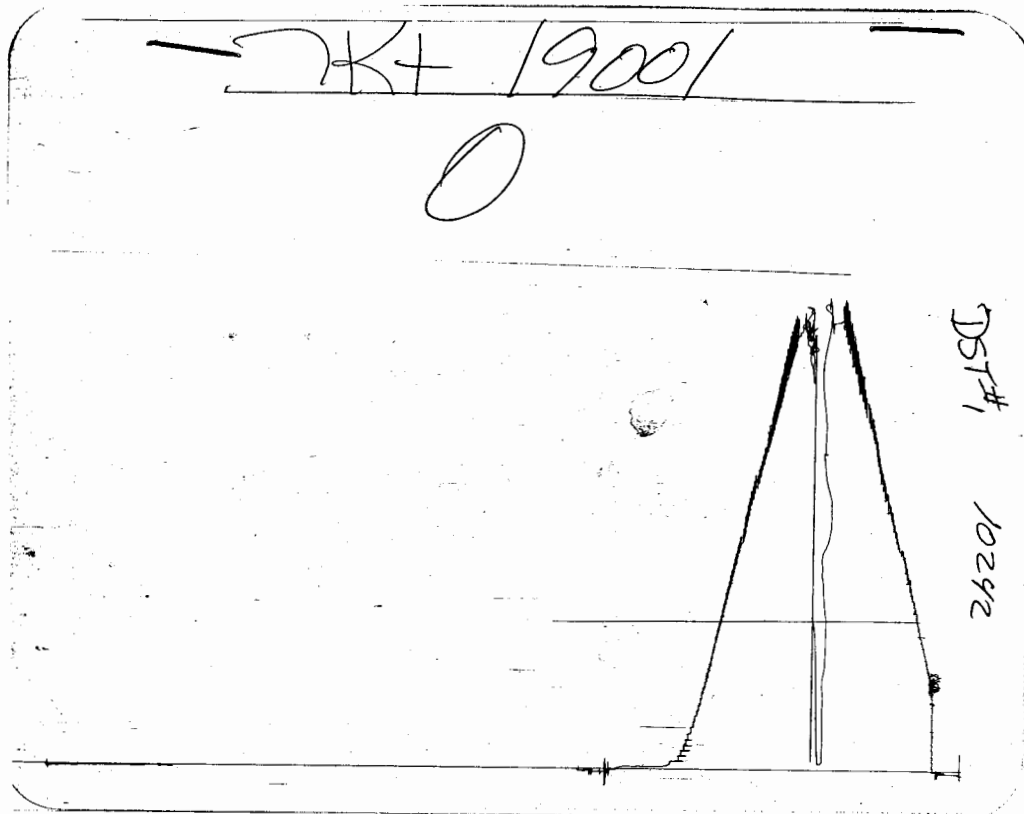
Oil Grav 32.00 API	Gas Grav 0.65 API	Pb 857.00 PSIA
Bo 1.081 RBL/STB	Vis 1.000 cp	Ct 2.0322E+002 1/PSI

Horner Results

	Inital Shut-In	Final Shut-In
pseudo pressure time	0.08 hrs	1.08 hrs
slope	-272.50	-30.06
pstar	875.01 psig	866.51 psig
plhr	865.53 psig	856.93 psig
skin	10.31	35.19
permeability	1.13 md	10.25 md
transmisability	5.22 md-ft/cp	47.33 md-ft/cp
radius of investigation	0.00 ft	0.01 ft
Damage-Ratio	-0.63 percent	-6.9 percent
Drawdown Factor		-0.233 percent
Drawdown P*		0.971 percent



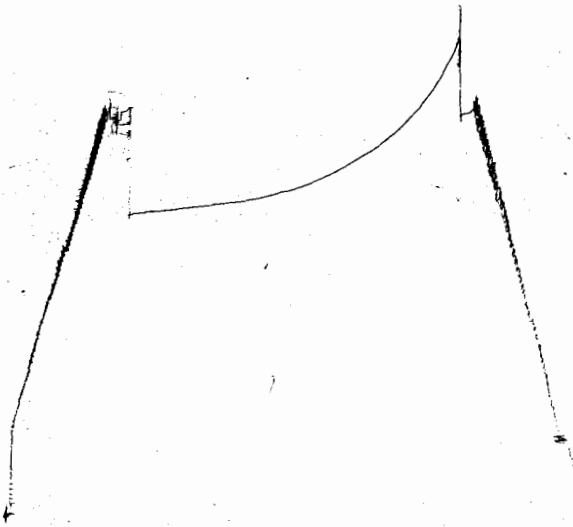
Inside Recorder



Outside Recorder

SKT 19001

Below Straddle



DST 13630