# WESTERN TESTING CO., INC.
## FORMATION TESTING TICKET

**Nº 18684**

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

Elevation 1712 KB Formation Miss Eff. Pay Ft.

District Augusta Date 4-26-93 Customer Order No.

COMPANY NAME Phillips Exploration Co., Inc.

ADDRESS 100 South Main - Suite 510 Wichita Ks, 67202

LEASE AND WELL NO. Jay-Royse #1-20A COUNTY Reno STATE KS Sec. 20 Twp. 25 Rge. 9 W

Mail Invoice To Same Co. Name #1-20A Jay Address Royse No. Copies Requested 1

Mail Charts To Same Address No. Copies Requested 5

Formation Test No. DST #1 Interval Tested From 3862 ft. to 3897 ft. Total Depth 3897 ft.

Packer Depth 3857 ft. Size 6 5/8 in. Packer Depth — ft. Size — in.

Packer Depth 3862 ft. Size 6 5/8 in. Packer Depth — ft. Size — in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3851 ft. Recorder Number 10979 Cap. 4100

Bottom Recorder Depth (Outside) 3894 ft. Recorder Number 3354 Cap. 4200

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

Drilling Contractor Sterling Drilling rig 2

Mud Type Chem Viscosity 55 Drill Collar Length 360 I. D. 2.25 in.

Weight 8.8 Water Loss 8.4 cc. Weight Pipe Length — I. D. — in.

Chlorides 6500 P.P.M. Drill Pipe Length 3480 I. D. 3.8 in.

Jars: Make — Serial Number — Test Tool Length 22 ft. Tool Size 5 1/2 OD in.

Did Well Flow? — Reversed Out — Anchor Length 35 ft. Size 5 1/2 OD in.

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 XH in.

Blow: Strong blow to a Very Strong blow on (IFP) gas to surface after ISI
Very Strong blow on (FFP)

Recovered 85 ft. of Drilling mud with trace of Oil

Recovered 240 ft. of Heavy Oil cut mud 35% gas 10% O.C 55% mud

Recovered 240 ft. of Good Oil 34° gravity, cut 60°

Recovered ft. of

Recovered ft. of

Chlorides 49,000 P.P.M. Sample Jars used 5 Remarks:

APR 28 1993

Time On Location 12:01 A.M. / P.M. Time Pick Up Tool 6:00 A.M. / P.M. Time Off Location A.M. / P.M.

Time Set Packer(s) 7:00 A.M. / P.M. Time Started Off Bottom 11:00 A.M. / P.M. Maximum Temperature 120°F

| | | | | | | |
|---|---|---|---|---|---|---|
| Initial Hydrostatic Pressure | | (A) | 1835 | P.S.I. | | |
| Initial Flow Period | Minutes 30 | (B) | 165 | P.S.I. to (C) | 240 | P.S.I. |
| Initial Closed In Period | Minutes 60 | (D) | 905 | P.S.I. | | |
| Final Flow Period | Minutes 60 | (E) | 175 | P.S.I. to (F) | 210 | P.S.I. |
| Final Closed In Period | Minutes 90 | (G) | 905 | P.S.I. | | |
| Final Hydrostatic Pressure | | (H) | 1825 | P.S.I. | | |

10979

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 of Customer or his authorized representative

Western Representative

**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 | $ |

Phone 316 262-5861

P. O. Box 1599

WICHITA, KANSAS 67201

WESTERN TESTERS

# GAS FLOW REPORT

**Nº 3988**

Date 4-26-93 Ticket Company Phillips Exp Co

Well Name and No. Joyce Royse #1-20A Dst No. Dst #1 Interval Tested 3862-3897

County Reno State Ks Sec. 20 Twp. 25 Rg. 9W

| Time Gauge in Min. | P.S.I. on Merla Orifice Well Tester | Size of Orifice | P.S.I. on Pitot Tester | P.S.I. on Side Static Tester | Description of Flow |
|---|---|---|---|---|---|
| **PRE FLOW** | | | | | |
| | | | | | |
| **SECOND FLOW** | | | | | |
| 30 | | 1-1/2 | 4 | | 98500 |
| 40 | | 1 | 11 | | 85,900 |
| 50 | | | 8.5 | | 75,000 |
| 60 | | | 9 | | 77,000 77500 |
| 70 | | | 12 | | 89,800 |
| 80 | | | 11.5 | | 87,500 |
| 90 | | | 12.0 | | 89,800 |

## GAS BOTTLE

Serial No. Date Bottle Filled Date to be Invoiced

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of $75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1½% per month, equal to 18% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME Phillips Exp Co

Authorized by

FORM WTC 9

# WESTERN TESTING CO., INC.
## Pressure Data

Date 4-26-92 Test Ticket No. 18684

Recorder No. 10929 Capacity Location Ft.

Clock No. Elevation Well Temperature °F

| Point | | Pressure | | Time Given | Time Computed |
|---|---|---|---|---|---|
| A | Initial Hydrostatic Mud | 1856 / 1852 P.S.I. | Open Tool | M | |
| B | First Initial Flow Pressure | P.S.I. | First Flow Pressure | Mins. 30 | Mins. |
| C | First Final Flow Pressure | 272 P.S.I. | Initial Closed-in Pressure | Mins. 60 | Mins. |
| D | Initial Closed-in Pressure | 925 P.S.I. | Second Flow Pressure | Mins. 60 | Mins. |
| E | Second Initial Flow Pressure | 184 P.S.I. | Final Closed-in Pressure | Mins. 96 | Mins. |
| F | Second Final Flow Pressure | 446 P.S.I. | | | |
| G | Final Closed-in Pressure | 909 P.S.I. | | | |
| H | Final Hydrostatic Mud | 1745 P.S.I. | | | |

## PRESSURE BREAKDOWN

**First Flow Pressure**
Breakdown: Inc.
of 5 mins. and a
final inc. of 0 Min.

| Point | Mins. | Press. |
|---|---|---|
| P 1 | 0 | 182 |
| P 2 | 5 | 201 |
| P 3 | 10 | 222 |
| P 4 | 15 | 240 |
| P 5 | 20 | 255 |
| P 6 | 25 | 264 |
| P 7 | 30 | 272 |
| P 8 | 35 | |
| P 9 | 40 | |
| P10 | 45 | |
| P11 | 50 | |
| P12 | 55 | |
| P13 | 60 | |
| P14 | 65 | |
| P15 | 70 | |
| P16 | 75 | |
| P17 | 80 | |
| P18 | 85 | |
| P19 | 90 | |
| P20 | 95 | |
| | 100 | |

**Initial Shut-In**
Breakdown: Inc.
of 3 mins. and a
final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 272 |
| 3 | 407 |
| 6 | 656 |
| 9 | 768 |
| 12 | 810 |
| 15 | 840 |
| 18 | 860 |
| 21 | 875 |
| 24 | 885 |
| 27 | 891 |
| 30 | 899 |
| 33 | 906 |
| 36 | 909 |
| 39 | 911 |
| 42 | 913 |
| 45 | 915 |
| 48 | 917 |
| 51 | 919 |
| 54 | 921 |
| 57 | 923 |
| 60 | 925 |

**Second Flow Pressure**
Breakdown: Inc.
of 5 mins. and a
final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 182 |
| 5 | |
| 10 | 182 |
| 15 | 182 |
| 20 | 192 |
| 25 | 200 |
| 30 | 205 |
| 35 | 209 |
| 40 | 211 |
| 45 | 213 OK |
| 50 | 220 |
| 55 | 222 |
| 60 | 225 |
| 65 | 226 |
| 70 | |
| 75 | |
| 80 | |
| 85 | |
| 90 | |
| 95 | |
| 100 | |

**Final Shut-In**
Breakdown: Inc.
of 3 mins. and a
final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 446 |
| 3 | 550 |
| 6 | 579 |
| 9 | 687 |
| 12 | 756 |
| 15 | 789 |
| 18 | 812 |
| 21 | 830 |
| 24 | 844 |
| 27 | 856 |
| 30 | 862 |
| 33 | 870 |
| 36 | 880 |
| 39 | 882 |
| 42 | 886 |
| 45 | 890 |
| 48 | 893 |
| 51 | 895 |
| 54 | 896 |
| 57 | 897 |
| 60 | 898 |

# WESTERN TESTING CO., INC.
## Pressure Data

Date _____ Test Ticket No. 18684

Recorder No. _____ Capacity _____ Location _____ Ft.

Clock No. _____ Elevation _____ Well Temperature _____ °F

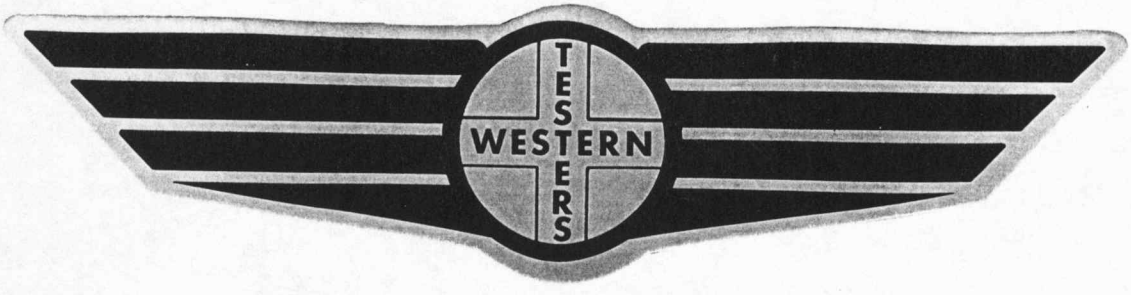
| Point | Pressure | | Time Given | Time Computed |
|---|---|---|---|---|
| A Initial Hydrostatic Mud | P.S.I. | Open Tool | M | |
| B First Initial Flow Pressure | P.S.I. | First Flow Pressure | Mins. | Mins. |
| C First Final Flow Pressure | P.S.I. | Initial Closed-in Pressure | Mins. | Mins. |
| D Initial Closed-in Pressure | P.S.I. | Second Flow Pressure | Mins. | Mins. |
| E Second Initial Flow Pressure | P.S.I. | Final Closed-in Pressure | Mins. | Mins. |
| F Second Final Flow Pressure | P.S.I. | | | |
| G Final Closed-in Pressure | P.S.I. | | | |
| H Final Hydrostatic Mud | 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 | 899 |
| P 2 110 | | 66 | | 110 | | 66 | 900 |
| P 3 115 | | 69 | | 115 | | 69 | 901 |
| P 4 120 | | 72 | | 120 | | 72 | 902 |
| P 5 125 | | 75 | | 125 | | 75 | 903 |
| P 6 130 | | 78 | | 130 | | 78 | 904 |
| P 7 135 | | 81 | | 135 | | 81 | 905 |
| P 8 140 | | 84 | | 140 | | 84 | 906 |
| P 9 145 | | 87 | | 145 | | 87 | 907 |
| P10 150 | | 90 | | 150 | | 90 | 908 |
| P11 155 | | 93 | | 155 | | 93 | 909 |
| P12 160 | | 96 | | 160 | | 96 | 909 |
| P13 165 | | 99 | | 165 | | 99 | |
| P14 170 | | 102 | | 170 | | 102 | |
| P15 175 | | 105 | | 175 | | 105 | |
| P16 180 | | 108 | | 180 | | 108 | |
| P17 185 | | 111 | | 185 | | 111 | |
| P18 190 | | 114 | | 190 | | 114 | |
| P19 195 | | 117 | | 195 | | 117 | |
| P20 200 | | 120 | | 200 | | 120 | |

WTC - 4

# FORMATION TEST REPORT




Home Office:

P.O. Box 1599

Wichita, Kansas 67201

Phone **1 - 800 - 688 - 7021**

COMPANY PHILLIPS EXPLORATION CO LEASE & WELL NO. #1-20A JOY ROYSE SEC. 20 TWP. 25S RGE. 9W TEST NO. 1 DATE 4/26/93

# DST REPORT

## GENERAL INFORMATION

| | | | |
|---|---|---|---|
| DATE | : 4/26/93 | TICKET | : 18684 |
| CUSTOMER | : PHILLIPS EXPLORATION CO. | LEASE | : JOY ROYSE |
| WELL | : #1-20A TEST: 1 | GEOLOGIST | : ? |
| ELEVATION | : 1712 KB | FORMATION | : MISSISSIPPI |
| SECTION | : 20 | TOWNSHIP | : 25S |
| RANGE | : 9W COUNTY: RENO | STATE | : KS |
| GAUGE SN# | : 10979 RANGE : 4100 | CLOCK | : 12 |

## WELL INFORMATION

PERFORATION INTERVAL FROM: 3862.00 ft TO: 3897.00 ft TVD: 3897.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: GAS
DEPTH OF RECORDERS: 3891.0 ft 3894.0 ft
TEMPERATURE: 120.0

| | | | |
|---|---|---|---|
| DRILL COLLAR LENGTH: | 360.0 ft | I.D.: | 2.250 in |
| WEIGHT PIPE LENGTH : | 0.0 ft | I.D.: | 0.000 in |
| DRILL PIPE LENGTH : | 3480.0 ft | I.D.: | 3.800 in |
| TEST TOOL LENGTH : | 22.0 ft | TOOL SIZE : | 5.500 in |
| ANCHOR LENGTH : | 35.0 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: | 3857.0 ft | SIZE: | 6.630 in |
| PACKER DEPTH: | 3862.0 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. | : STERLING RIG 2 | | |
| MUD TYPE | : CHEMICAL | VISCOSITY : | 55.00 cp |
| WEIGHT | : 8.800 ppg | WATER LOSS: | 8.400 cc |
| CHLORIDES | : 6500 ppm | | |
| JARS-MAKE | : | SERIAL NUMBER: | |
| DID WELL FLOW? | : NO | REVERSED OUT? | : NO |

## COMMENTS

Comment

INITIAL FLOW PERIOD STRONG BLOW TO A VERY STRONG BLOW. GAS TO SURFACE AFTER INITIAL SHUT-IN. FINAL FLOW PERIOD VERY STRONG BLOW.

# DST REPORT (CONTINUED)

## FLUID RECOVERY

| Feet of Fluid | % Oil | % Gas | % Water | % Mud | Comments |
|---|---|---|---|---|---|
| 85.0 | 1.0 | 0.0 | 0.0 | 99.0 | DRILLING MUD W/TRACE OIL |
| 240.0 | 10.0 | 35.0 | 0.0 | 55.0 | GASSY OIL CUT MUD |
| 240.0 | 100.0 | 0.0 | 0.0 | 0.0 | FREE OIL |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | GRAVITY 34 @ 60 DEGREES F |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | CHLORIDES 49000 PPM |

## RATE INFORMATION

| | | | |
|---|---|---|---|
| OIL VOLUME: | 1.4194 STB | | |
| GAS VOLUME: | 4.4675 SCF | TOTAL FLOW TIME: | 95.0000 min. |
| MUD VOLUME: | 2.4306 STB | AVERAGE OIL RATE: | 58.3587 STB/D |
| WATER VOLUME: | 0.0000 STB | AVERAGE WATER RATE: | 0.0000 STB/D |
| TOTAL FLUID : | 3.8501 STB | | |

## FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1835.00

| Description | Duration | p1 | p End |
|---|---|---|---|
| INITIAL FLOW | 30.00 | 165.00 | 240.00 |
| INITIAL SHUT-IN | 60.00 | | 905.00 |
| FINAL FLOW | 60.00 | 175.00 | 210.00 |
| FINAL SHUT-IN | 90.00 | | 905.00 |

FINAL HYDROSTATIC PRESSURE: 1825.00

## OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1836.00

| Description | Duration | p1 | p End |
|---|---|---|---|
| INITIAL FLOW | 30.00 | 182.00 | 272.00 |
| INITIAL SHUT-IN | 60.00 | | 925.00 |
| FINAL FLOW | 65.00 | 182.00 | 226.00 |
| FINAL SHUT-IN | 96.00 | | 909.00 |

FINAL HYDROSTATIC PRESSURE: 1742.00

# GAS FLOW REPORT

## GENERAL INFORMATION

DATE : 4/26/93
CUSTOMER : PHILLIPS EXPLORATION CO.
WELL : #1-20A TEST: 1
ELEVATION: 1712 KB
SECTION : 20
RANGE : 9W COUNTY: RENO
GAUGE SN#: 10979 RANGE : 4100

TICKET : 18684
LEASE : JOY ROYSE
GEOLOGIST: ?
FORMATION: MISSISSIPPI
TOWNSHIP : 25S
STATE : KS
CLOCK : 12

## PRE FLOW

| Time Guage (min) | Tester Type | Orifice Size | Pressure | Flow Desc. |
|---|---|---|---|---|

## SECOND FLOW

| Time Guage (min) | Tester Type | Orifice Size | Pressure | Flow Desc. |
|---|---|---|---|---|
| 30 MIN | MERLA | 1.500 | 2" OF WTR | 98500 SCF/D |
| 40 MIN | MERLA | 1.000 | 11" OF WTR | 85900 SCF/D |
| 50 MIN | MERLA | 1.000 | 8.5" OF WTR | 75000 SCF/D |
| 60 MIN | MERLA | 1.000 | 9" OF WTR | 77500 SCF/D |
| 70 MIN | MERLA | 1.000 | 12" OF WTR | 89800 SCF/D |
| 80 MIN | MERLA | 1.000 | 11.5" OF WTR | 87500 SCF/D |
| 90 MIN | MERLA | 1.000 | 12" OF WTR | 89800 SCF/D |

# PRESSURE TRANSIENT REPORT

## GENERAL INFORMATION

| | | | |
|---|---|---|---|
| DATE | : 4/26/93 | TICKET | : 18684 |
| CUSTOMER | : PHILLIPS EXPLORATION CO. | LEASE | : JOY ROYSE |
| WELL | : #1-20A TEST: 1 | GEOLOGIST | : ? |
| ELEVATION | : 1712 KB | FORMATION | : MISSISSIPPI |
| SECTION | : 20 | TOWNSHIP | : 25S |
| RANGE | : 9W COUNTY: RENO | STATE | : KS |
| GAUGE SN# | : 10979 RANGE : 4100 | CLOCK | : 12 |

## INITIAL FLOW

| Time (min) | Pressure | Delta P |
|---|---|---|
| 0.00 | 182.00 | 182.00 |
| 5.00 | 201.00 | 19.00 |
| 10.00 | 222.00 | 21.00 |
| 15.00 | 240.00 | 18.00 |
| 20.00 | 255.00 | 15.00 |
| 25.00 | 264.00 | 9.00 |
| 30.00 | 272.00 | 8.00 |

## INITIAL SHUT IN

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 3.00 | 407.00 | 407.00 | 0.00 |
| 6.00 | 656.00 | 249.00 | 0.00 |
| 9.00 | 768.00 | 112.00 | 0.00 |
| 12.00 | 810.00 | 42.00 | 0.00 |
| 15.00 | 840.00 | 30.00 | 0.00 |
| 18.00 | 860.00 | 20.00 | 0.00 |
| 21.00 | 875.00 | 15.00 | 0.00 |
| 24.00 | 885.00 | 10.00 | 0.00 |
| 27.00 | 891.00 | 6.00 | 0.00 |
| 30.00 | 899.00 | 8.00 | 0.00 |
| 33.00 | 906.00 | 7.00 | 0.00 |
| 36.00 | 909.00 | 3.00 | 0.00 |
| 39.00 | 911.00 | 2.00 | 0.00 |
| 42.00 | 913.00 | 2.00 | 0.00 |
| 45.00 | 915.00 | 2.00 | 0.00 |
| 48.00 | 917.00 | 2.00 | 0.00 |
| 51.00 | 919.00 | 2.00 | 0.00 |
| 54.00 | 921.00 | 2.00 | 0.00 |
| 57.00 | 923.00 | 2.00 | 0.00 |

# PRESSURE TRANSIENT REPORT (CONTINUED)

## INITIAL SHUT IN (CONTINUED)

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 60.00 | 925.00 | 2.00 | 0.00 |

## FINAL FLOW

| Time (min) | Pressure | Delta P |
|---|---|---|
| 0.00 | 182.00 | 182.00 |
| 5.00 | 182.00 | 0.00 |
| 10.00 | 182.00 | 0.00 |
| 15.00 | 183.00 | 1.00 |
| 20.00 | 192.00 | 9.00 |
| 25.00 | 200.00 | 8.00 |
| 30.00 | 205.00 | 5.00 |
| 35.00 | 209.00 | 4.00 |
| 40.00 | 211.00 | 2.00 |
| 45.00 | 213.00 | 2.00 |
| 50.00 | 220.00 | 7.00 |
| 55.00 | 223.00 | 3.00 |
| 60.00 | 225.00 | 2.00 |
| 65.00 | 226.00 | 1.00 |

## FINAL SHUT IN

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 3.00 | 350.00 | 350.00 | 0.00 |
| 6.00 | 579.00 | 229.00 | 0.00 |
| 9.00 | 687.00 | 108.00 | 0.00 |
| 12.00 | 756.00 | 69.00 | 0.00 |
| 15.00 | 789.00 | 33.00 | 0.00 |
| 18.00 | 812.00 | 23.00 | 0.00 |
| 21.00 | 830.00 | 18.00 | 0.00 |
| 24.00 | 844.00 | 14.00 | 0.00 |
| 27.00 | 856.00 | 12.00 | 0.00 |
| 30.00 | 863.00 | 7.00 | 0.00 |
| 33.00 | 870.00 | 7.00 | 0.00 |
| 36.00 | 880.00 | 10.00 | 0.00 |
| 39.00 | 882.00 | 2.00 | 0.00 |
| 42.00 | 886.00 | 4.00 | 0.00 |
| 45.00 | 890.00 | 4.00 | 0.00 |

# PRESSURE TRANSIENT REPORT (CONTINUED)

## FINAL SHUT IN (CONTINUED)

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 48.00 | 893.00 | 3.00 | 0.00 |
| 51.00 | 895.00 | 2.00 | 0.00 |
| 54.00 | 896.00 | 1.00 | 0.00 |
| 57.00 | 897.00 | 1.00 | 0.00 |
| 60.00 | 898.00 | 1.00 | 0.00 |
| 63.00 | 899.00 | 1.00 | 0.00 |
| 66.00 | 900.00 | 1.00 | 0.00 |
| 69.00 | 901.00 | 1.00 | 0.00 |
| 72.00 | 902.00 | 1.00 | 0.00 |
| 75.00 | 903.00 | 1.00 | 0.00 |
| 78.00 | 904.00 | 1.00 | 0.00 |
| 81.00 | 905.00 | 1.00 | 0.00 |
| 84.00 | 906.00 | 1.00 | 0.00 |
| 87.00 | 907.00 | 1.00 | 0.00 |
| 90.00 | 908.00 | 1.00 | 0.00 |
| 93.00 | 909.00 | 1.00 | 0.00 |
| 96.00 | 909.00 | 0.00 | 0.00 |

DKT 18684

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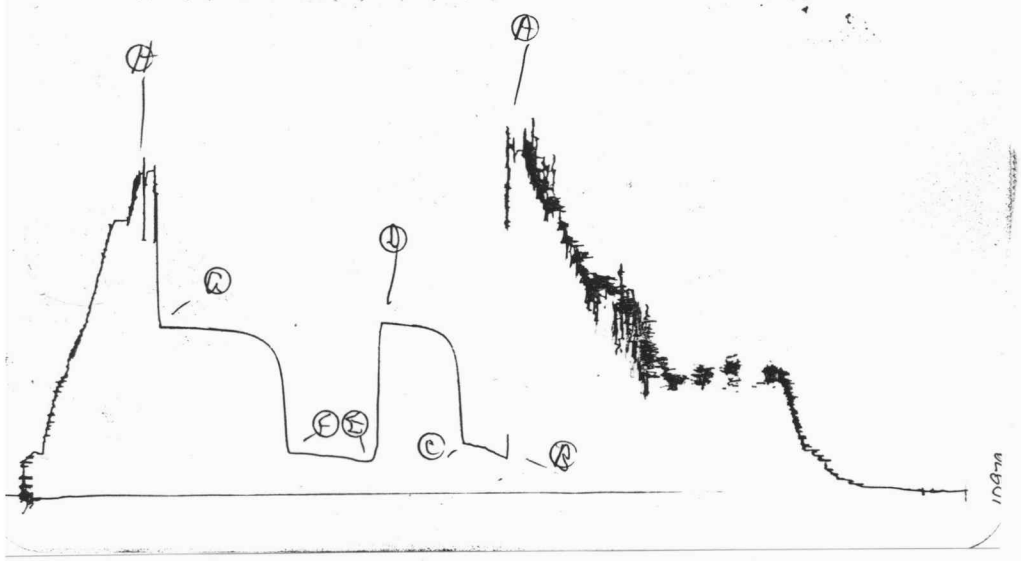


DKT 18684

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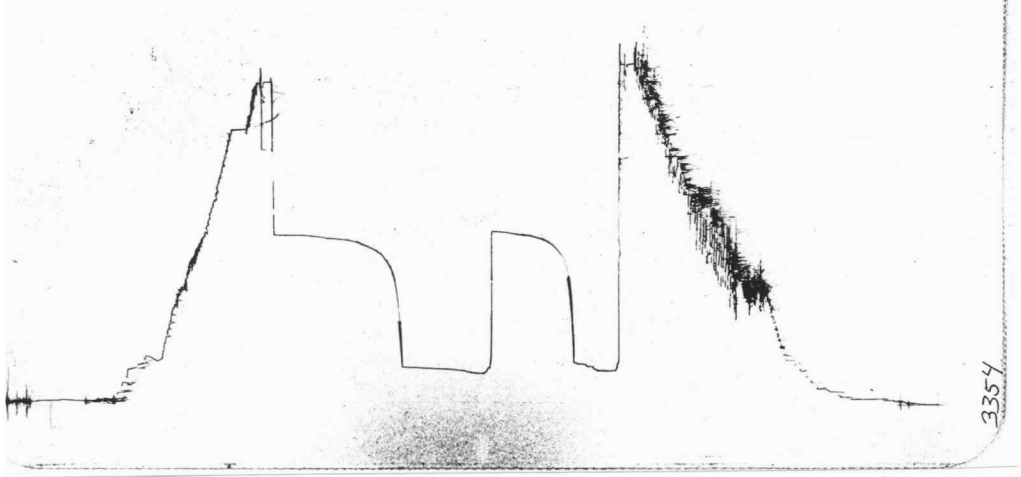


# WESTERN TESTING CO., INC.
## FORMATION TESTING TICKET

**Nº 18685**

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

Elevation 1712 KB Formation Miss Eff. Pay Ft.

District Augusta Date 4-28-93 Customer Order No.

COMPANY NAME Phillips Exploration Co., Inc.

ADDRESS 100 South Main - Suite 510 Wichita Ks 67202

LEASE AND WELL NO. Jay Royse #1-20 COUNTY Reno STATE Ks Sec 20 Twp 25S Rge. 9W

Mail Invoice To Same Co. Name No. Copies Requested 1

Mail Charts To Same #1-20A Jay Royse Address No. Copies Requested 5

Formation Test No. DST #2 Interval Tested From 3898 ft. to 3910 ft. Total Depth 3910 ft.

Packer Depth 3893 ft. Size 6 7/8 in. Packer Depth — ft. Size — in.

Packer Depth 3898 ft. Size 6 7/8 in. Packer Depth — ft. Size — in.

Depth of Selective Zone Set

Top Recorder Depth (Inside) 3904 ft. Recorder Number 10979 Cap. 4100

Bottom Recorder Depth (Outside) 3907 ft. Recorder Number 3354 Cap. 4200

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

Drilling Contractor Sterling Rig 2 Drill Collar Length 420 I. D. 2.25 in.

Mud Type Chem Viscosity 68 Weight Pipe Length — I. D. — in.

Weight 8.7 Water Loss 7.6 cc. Drill Pipe Length 3456 I. D. 3.8 in.

Chlorides 6500 P.P.M. Test Tool Length 22 ft. Tool Size 5 7/8 OD in.

Jars: Make — Serial Number — Anchor Length 12 ft. Size 5 7/8 OD 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 XH in.

Blow: Very Strong blow bottom of bucket in 1 min gas to surface in 25 min on (IFP)

Recovered 3683 ft. of GCM in pipe

Recovered 40 ft. of Sulphur Oil 36 gravity at 60°

Recovered 215 ft. of Gassy Oil cut mud 25% gas 10% O.C. 65% mud

Recovered ft. of

Recovered ft. of

Chlorides P.P.M. Sample Jars used Remarks: See gas flow report

APR 28 1993

Time On Location Stand-by A.M./P.M. Time Pick Up Tool 12:01 A.M./P.M. Time Off Location A.M./P.M.

Time Set Packer(s) 1:00 A.M./P.M. Time Started Off Bottom 5:00 A.M./P.M. Maximum Temperature 119°F

| | | | | | |
|---|---|---|---|---|---|
| Initial Hydrostatic Pressure | | (A) 1790 | P.S.I. | | |
| Initial Flow Period | Minutes 30 | (B) 105 | P.S.I. to (C) | 105 | P.S.I. |
| Initial Closed In Period | Minutes 60 | (D) 905 | P.S.I. | | |
| Final Flow Period | Minutes 60 | (E) 95 | P.S.I. to (F) | 85 | P.S.I. |
| Final Closed In Period | Minutes 90 | (G) 915 | P.S.I. | | |
| Final Hydrostatic Pressure | | (H) 1780 | P.S.I. | | |

10979

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 of Customer or his authorized representative

Western Representative

**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 | $ |

Phone 316 262-5861

P. O. Box 1599

WICHITA, KANSAS 67201

**Nº 3989**

# GAS FLOW REPORT

Date 4-28-93 Ticket 18685 Company Phillips Exp Co

Well Name and No. Joy Royse II 1-20A Dst No. Dst #2 Interval Tested 3898 - 3910

County Reno State Ks Sec. 20 Twp. 25 Rg. 9W

| Time Gauge in Min. | P.S.I. on Merla Orifice Well Tester | Size of Orifice | P.S.I. on Pitot Tester | P.S.I. on Side Static Tester | Description of Flow |
|---|---|---|---|---|---|
| | | | PSIG - | **PRE FLOW** | |
| 25 | | 1 | 18 | | 687,000 |
| 30 | | 1 | 10 | | 472,000 |
| | | | PSIG - | **SECOND FLOW** | |
| 30 | | 3/4 | 7 | | 211,000 |
| 40 | | 3/4 | 9.5 | | 251,000 |
| 50 | | 3/4 | 10.5 | | 266,500 |
| 60 | | 3/4 | 4.5 | | 202,000 |
| 70 | | 3/4 | 5.5 | | 185,000 |
| 80 | | 3/4 | 5. | | 175,000 |
| 90 | | 3/4 | 4.5 | | 164,000 |

## GAS BOTTLE

Serial No. Date Bottle Filled Date to be Invoiced

Requisition and Provisions for high pressure stainless steel gas bottles. Western Testing Co., Inc. shall not be liable for damage of any kind to property or personnel of the one whom gas bottle is filled or for any loss suffered or sustained directly or indirectly through the use of these bottles. By signing of this ticket showing receipt of a gas testing bottle, the undersigned agrees for himself and as agent for operator, to return this bottle to Western Testing Co., Inc. within thirty (30) days free of charge, or be invoiced in the amount of $75.00 (total charge). Should valve or seal plug be missing or damaged beyond repair, operator shall be invoiced for repairs at our invoiced price.

All charges subject to 1½% per month, equal to 18% interest per annum after 30 days from date of invoice. Any expense incurred for collection will be added to the original amount.

COMPANY'S NAME

Authorized by

FORM WTC 9

## WESTERN TESTING CO., INC.
### Pressure Data

Date 4-28-82 Test Ticket No. 1865

Recorder No. 10979 Capacity Location Ft.

Clock No. Elevation Well Temperature °F

| Point | | Pressure | | Time Given | Time Computed |
|---|---|---|---|---|---|
| A | Initial Hydrostatic Mud | 1808 P.S.I. | Open Tool | M | |
| B | First Initial Flow Pressure | 75 P.S.I. | First Flow Pressure | Mins. 5 | Mins. |
| C | First Final Flow Pressure | 125 P.S.I. | Initial Closed-in Pressure | Mins. 60 | Mins. |
| D | Initial Closed-in Pressure | 936 P.S.I. | Second Flow Pressure | Mins. 60 | Mins. |
| E | Second Initial Flow Pressure | 111 P.S.I. | Final Closed-in Pressure | Mins. 93 | Mins. |
| F | Second Final Flow Pressure | 100 P.S.I. | | | |
| G | Final Closed-in Pressure | 932 P.S.I. | | | |
| H | Final Hydrostatic Mud | 1783 P.S.I. | | | |

### PRESSURE BREAKDOWN

**First Flow Pressure**

Breakdown: Inc. of 5 mins. and a final inc. of 0 Min.

| Point | Mins. | Press. |
|---|---|---|
| P 1 | 0 | 75 |
| P 2 | 5 | 75 |
| P 3 | 10 | 83 OK |
| P 4 | 15 | 109 |
| P 5 | 20 | 159 |
| P 6 | 25 | 187 |
| P 7 | 30 | 144 |
| P 8 | 35 | 125 |
| P 9 | 40 | |
| P10 | 45 | |
| P11 | 50 | |
| P12 | 55 | |
| P13 | 60 | |
| P14 | 65 | |
| P15 | 70 | |
| P16 | 75 | |
| P17 | 80 | |
| P18 | 85 | |
| P19 | 90 | |
| P20 | 95 | |
| | 100 | |

**Initial Shut-In**

Breakdown: Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 125 |
| 3 | 916 |
| 6 | 902 |
| 9 | 917 |
| 12 | 932 |
| 15 | 936 |
| 18 | 929 |
| 21 | 931 |
| 24 | 933 |
| 27 | 934 |
| 30 | 935 |
| 33 | |
| 36 | |
| 39 | 935 |
| 42 | 936 |
| 45 | 936 |
| 48 | |
| 51 | |
| 54 | |
| 57 | |
| 60 | 936 |

**Second Flow Pressure**

Breakdown: Inc. of 5 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 111 |
| 5 | |
| 10 | |
| 15 | |
| 20 | 111 |
| 25 | 108 |
| 30 | 105 |
| 35 | 103 |
| 40 | 101 |
| 45 | 100 |
| 50 | |
| 55 | |
| 60 | 100 |
| 65 | |
| 70 | |
| 75 | |
| 80 | |
| 85 | |
| 90 | |
| 95 | |
| 100 | |

**Final Shut-In**

Breakdown: Inc. of 3 mins. and a final inc. of 0 Min.

| Point Minutes | Press. |
|---|---|
| 0 | 100 |
| 3 | 1000 |
| 6 | 857 |
| 9 | 907 |
| 12 | 917 |
| 15 | 925 |
| 18 | 925 |
| 21 | 927 |
| 24 | 928 |
| 27 | 928 |
| 30 | 929 |
| 33 | 929 |
| 36 | 930 |
| 39 | 930 |
| 42 | 931 |
| 45 | 931 |
| 48 | |
| 51 | |
| 54 | |
| 57 | |
| 60 | 931 |

# WESTERN TESTING CO., INC.
## Pressure Data

Date _____ Test Ticket No. 18485

Recorder No. _____ Capacity _____ Location _____ Ft.

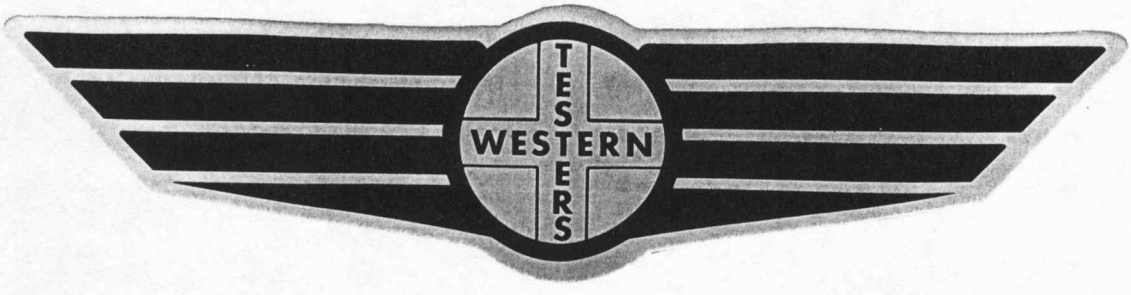
Clock No. _____ Elevation _____ Well Temperature _____ °F

| Point | Pressure | | Time Given | Time Computed |
|---|---|---|---|---|
| A Initial Hydrostatic Mud | P.S.I. | Open Tool | M | |
| B First Initial Flow Pressure | P.S.I. | First Flow Pressure | Mins. | Mins. |
| C First Final Flow Pressure | P.S.I. | Initial Closed-in Pressure | Mins. | Mins. |
| D Initial Closed-in Pressure | P.S.I. | Second Flow Pressure | Mins. | Mins. |
| E Second Initial Flow Pressure | P.S.I. | Final Closed-in Pressure | Mins. | Mins. |
| F Second Final Flow Pressure | P.S.I. | | | |
| G Final Closed-in Pressure | P.S.I. | | | |
| H Final Hydrostatic Mud | 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 | |
| P 2 110 | | 66 | | 110 | | 66 | |
| P 3 115 | | 69 | | 115 | | 69 | |
| P 4 120 | | 72 | | 120 | | 72 | |
| P 5 125 | | 75 | | 125 | | 75 | |
| P 6 130 | | 78 | | 130 | | 78 | |
| P 7 135 | | 81 | | 135 | | 81 | |
| P 8 140 | | 84 | | 140 | | 84 | |
| P 9 145 | | 87 | | 145 | | 87 | |
| P10 150 | | 90 | | 150 | | 90 | |
| P11 155 | | 93 | | 155 | | 93 | |
| P12 160 | | 96 | | 160 | | 96 | |
| P13 165 | | 99 | | 165 | | 99 | |
| P14 170 | | 102 | | 170 | | 102 | |
| P15 175 | | 105 | | 175 | | 105 | |
| P16 180 | | 108 | | 180 | | 108 | |
| P17 185 | | 111 | | 185 | | 111 | |
| P18 190 | | 114 | | 190 | | 114 | |
| P19 195 | | 117 | | 195 | | 117 | |
| P20 200 | | 120 | | 200 | | 120 | |

# FORMATION TEST REPORT




Home Office: Wichita, Kansas 67201

P.O. Box 1599 Phone **1-800-688-7021**

COMPANY PHILLIPS EXPLORATION CO LEASE & WELL NO. #1-20A JOY ROYSE SEC. 20 TWP. 25S RGE. 9W TEST NO. 2 DATE 4/28/93

# DST REPORT

## GENERAL INFORMATION

| | | | |
|---|---|---|---|
| DATE | : 4/28/93 | TICKET | : 18685 |
| CUSTOMER | : PHILLIPS EXPLORATION CO. | LEASE | : JOY ROYSE |
| WELL | : #1-20A TEST: 2 | GEOLOGIST | : ? |
| ELEVATION | : 1712 KB | FORMATION | : MISSISSIPPI |
| SECTION | : 20 | TOWNSHIP | : 25S |
| RANGE | : 9W COUNTY: RENO | STATE | : KS |
| GAUGE SN# | : 10979 RANGE : 4100 | CLOCK | : 12 |

## WELL INFORMATION

PERFORATION INTERVAL FROM: 3898.00 ft TO: 3910.00 ft TVD: 3910.0 ft
DEPTH OF SELECTIVE ZONE: TEST TYPE: GAS
DEPTH OF RECORDERS: 3904.0 ft 3907.0 ft
TEMPERATURE: 119.0

| | | | |
|---|---|---|---|
| DRILL COLLAR LENGTH: | 420.0 ft | I.D.: | 2.250 in |
| WEIGHT PIPE LENGTH : | 0.0 ft | I.D.: | 0.000 in |
| DRILL PIPE LENGTH : | 3456.0 ft | I.D.: | 3.800 in |
| TEST TOOL LENGTH : | 22.0 ft | TOOL SIZE : | 5.500 in |
| ANCHOR LENGTH : | 12.0 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: | 3893.0 ft | SIZE: | 6.630 in |
| PACKER DEPTH: | 3898.0 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. | : STERLING RIG 2 | | |
| MUD TYPE | : CHEMICAL | VISCOSITY : | 68.00 cp |
| WEIGHT | : 8.700 ppg | WATER LOSS: | 7.600 cc |
| CHLORIDES | : 6500 ppm | | |
| JARS-MAKE | : | SERIAL NUMBER: | |
| DID WELL FLOW? | : NO | REVERSED OUT? | : NO |

## COMMENTS

Comment

INITIAL FLOW PERIOD VERY STRONG BLOW - BOTTOM OF BUCKET IN 1 MINUTE. GAS TO SURFACE IN 25 MINUTES ON INITIAL FLOW PERIOD.

# DST REPORT (CONTINUED)

## FLUID RECOVERY

| Feet of Fluid | % Oil | % Gas | % Water | % Mud | Comments |
|---|---|---|---|---|---|
| 40.0 | 100.0 | 0.0 | 0.0 | 0.0 | FREE OIL |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 26 GRAVITY @ 60 DEGREES |
| 215.0 | 10.0 | 25.0 | 0.0 | 65.0 | GASSY OIL CUT MUD |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3683 FT GAS ABOVE FLUID |

## RATE INFORMATION

| | | | |
|---|---|---|---|
| OIL VOLUME: | 0.3024 STB | | |
| GAS VOLUME: | 1.4841 SCF | TOTAL FLOW TIME: | 95.0000 min. |
| MUD VOLUME: | 0.6872 STB | AVERAGE OIL RATE: | 15.0009 STB/D |
| WATER VOLUME: | 0.0000 STB | AVERAGE WATER RATE: | 0.0000 STB/D |
| TOTAL FLUID : | 0.9896 STB | | |

## FIELD TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1790.00

| Description | Duration | p1 | p End |
|---|---|---|---|
| INITIAL FLOW | 30.00 | 65.00 | 105.00 |
| INITIAL SHUT-IN | 60.00 | | 905.00 |
| FINAL FLOW | 60.00 | 95.00 | 95.00 |
| FINAL SHUT-IN | 90.00 | | 915.00 |

FINAL HYDROSTATIC PRESSURE: 1780.00

## OFFICE TIME & PRESSURE INFORMATION

INITIAL HYDROSTATIC PRESSURE: 1808.00

| Description | Duration | p1 | p End |
|---|---|---|---|
| INITIAL FLOW | 35.00 | 75.00 | 125.00 |
| INITIAL SHUT-IN | 60.00 | | 936.00 |
| FINAL FLOW | 60.00 | 111.00 | 100.00 |
| FINAL SHUT-IN | 93.00 | | 933.00 |

FINAL HYDROSTATIC PRESSURE: 1783.00

# GAS FLOW REPORT

## GENERAL INFORMATION

| | | | |
|---|---|---|---|
| DATE | : 4/28/93 | TICKET | : 18685 |
| CUSTOMER | : PHILLIPS EXPLORATION CO. | LEASE | : JOY ROYSE |
| WELL | : #1-20A TEST: 2 | GEOLOGIST | : ? |
| ELEVATION | : 1712 KB | FORMATION | : MISSISSIPPI |
| SECTION | : 20 | TOWNSHIP | : 25S |
| RANGE | : 9W COUNTY: RENO | STATE | : KS |
| GAUGE SN# | : 10979 RANGE : 4100 | CLOCK | : 12 |

## PRE FLOW

| Time Guage (min) | Tester Type | Orifice Size | Pressure | Flow Desc. |
|---|---|---|---|---|
| 25 MIN | MERLA | 1.000 | 18 PSIG | 687000 SCF/D |
| 30 MIN | MERLA | 1.000 | 10 PSIG | 472000 SCF/D |

## SECOND FLOW

| Time Guage (min) | Tester Type | Orifice Size | Pressure | Flow Desc. |
|---|---|---|---|---|
| 30 MIN | MERLA | 0.750 | 7 PSIG | 211000 SCF/D |
| 40 MIN | MERLA | 0.750 | 9.5 PSIG | 251000 SCF/D |
| 50 MIN | MERLA | 0.750 | 10.5 PSIG | 266500 SCF/D |
| 60 MIN | MERLA | 0.750 | 6.5 PSIG | 202000 SCF/D |
| 70 MIN | MERLA | 0.750 | 5.5 PSIG | 185000 SCF/D |
| 80 MIN | MERLA | 0.750 | 5 PSIG | 175000 SCF/D |
| 90 MIN | MERLA | 0.750 | 4.5 PSIG | 166000 SCF/D |

# PRESSURE TRANSIENT REPORT

## GENERAL INFORMATION

| | | | |
|---|---|---|---|
| DATE | : 4/28/93 | TICKET | : 18685 |
| CUSTOMER | : PHILLIPS EXPLORATION CO. | LEASE | : JOY ROYSE |
| WELL | : #1-20A TEST: 2 | GEOLOGIST | : ? |
| ELEVATION | : 1712 KB | FORMATION | : MISSISSIPPI |
| SECTION | : 20 | TOWNSHIP | : 25S |
| RANGE | : 9W COUNTY: RENO | STATE | : KS |
| GAUGE SN# | : 10979 RANGE : 4100 | CLOCK | : 12 |

## INITIAL FLOW

| Time (min) | Pressure | Delta P |
|---|---|---|
| 0.00 | 75.00 | 75.00 |
| 5.00 | 75.00 | 0.00 |
| 10.00 | 83.00 | 8.00 |
| 15.00 | 109.00 | 26.00 |
| 20.00 | 159.00 | 50.00 |
| 25.00 | 187.00 | 28.00 |
| 30.00 | 144.00 | -43.00 |
| 35.00 | 125.00 | -19.00 |

## INITIAL SHUT IN

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 3.00 | 716.00 | 716.00 | 0.00 |
| 6.00 | 902.00 | 186.00 | 0.00 |
| 9.00 | 917.00 | 15.00 | 0.00 |
| 12.00 | 922.00 | 5.00 | 0.00 |
| 15.00 | 926.00 | 4.00 | 0.00 |
| 18.00 | 929.00 | 3.00 | 0.00 |
| 21.00 | 931.00 | 2.00 | 0.00 |
| 24.00 | 933.00 | 2.00 | 0.00 |
| 27.00 | 934.00 | 1.00 | 0.00 |
| 30.00 | 935.00 | 1.00 | 0.00 |
| 33.00 | 935.00 | 0.00 | 0.00 |
| 36.00 | 935.00 | 0.00 | 0.00 |
| 39.00 | 935.00 | 0.00 | 0.00 |
| 42.00 | 936.00 | 1.00 | 0.00 |
| 45.00 | 936.00 | 0.00 | 0.00 |
| 48.00 | 936.00 | 0.00 | 0.00 |
| 51.00 | 936.00 | 0.00 | 0.00 |
| 54.00 | 936.00 | 0.00 | 0.00 |

# PRESSURE TRANSIENT REPORT (CONTINUED)

## INITIAL SHUT IN (CONTINUED)

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 57.00 | 936.00 | 0.00 | 0.00 |
| 60.00 | 936.00 | 0.00 | 0.00 |

## FINAL FLOW

| Time (min) | Pressure | Delta P |
|---|---|---|
| 0.00 | 111.00 | 111.00 |
| 5.00 | 111.00 | 0.00 |
| 10.00 | 111.00 | 0.00 |
| 15.00 | 111.00 | 0.00 |
| 20.00 | 111.00 | 0.00 |
| 25.00 | 108.00 | -3.00 |
| 30.00 | 105.00 | -3.00 |
| 35.00 | 103.00 | -2.00 |
| 40.00 | 101.00 | -2.00 |
| 45.00 | 100.00 | -1.00 |
| 50.00 | 100.00 | 0.00 |
| 55.00 | 100.00 | 0.00 |
| 60.00 | 100.00 | 0.00 |

## FINAL SHUT IN

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 3.00 | 660.00 | 660.00 | 0.00 |
| 6.00 | 857.00 | 197.00 | 0.00 |
| 9.00 | 907.00 | 50.00 | 0.00 |
| 12.00 | 917.00 | 10.00 | 0.00 |
| 15.00 | 922.00 | 5.00 | 0.00 |
| 18.00 | 925.00 | 3.00 | 0.00 |
| 21.00 | 927.00 | 2.00 | 0.00 |
| 24.00 | 928.00 | 1.00 | 0.00 |
| 27.00 | 928.00 | 0.00 | 0.00 |
| 30.00 | 929.00 | 1.00 | 0.00 |
| 33.00 | 929.00 | 0.00 | 0.00 |
| 36.00 | 930.00 | 1.00 | 0.00 |
| 39.00 | 930.00 | 0.00 | 0.00 |
| 42.00 | 931.00 | 1.00 | 0.00 |
| 45.00 | 931.00 | 0.00 | 0.00 |

# PRESSURE TRANSIENT REPORT (CONTINUED)

## FINAL SHUT IN (CONTINUED)

| Time (min) | Pressure | Delta P | Horner T |
|---|---|---|---|
| 48.00 | 931.00 | 0.00 | 0.00 |
| 51.00 | 931.00 | 0.00 | 0.00 |
| 54.00 | 931.00 | 0.00 | 0.00 |
| 57.00 | 931.00 | 0.00 | 0.00 |
| 60.00 | 931.00 | 0.00 | 0.00 |
| 63.00 | 931.00 | 0.00 | 0.00 |
| 66.00 | 931.00 | 0.00 | 0.00 |
| 69.00 | 931.00 | 0.00 | 0.00 |
| 72.00 | 931.00 | 0.00 | 0.00 |
| 75.00 | 931.00 | 0.00 | 0.00 |
| 78.00 | 932.00 | 1.00 | 0.00 |
| 81.00 | 932.00 | 0.00 | 0.00 |
| 84.00 | 932.00 | 0.00 | 0.00 |
| 87.00 | 933.00 | 1.00 | 0.00 |
| 90.00 | 933.00 | 0.00 | 0.00 |
| 93.00 | 933.00 | 0.00 | 0.00 |

JKt 18685

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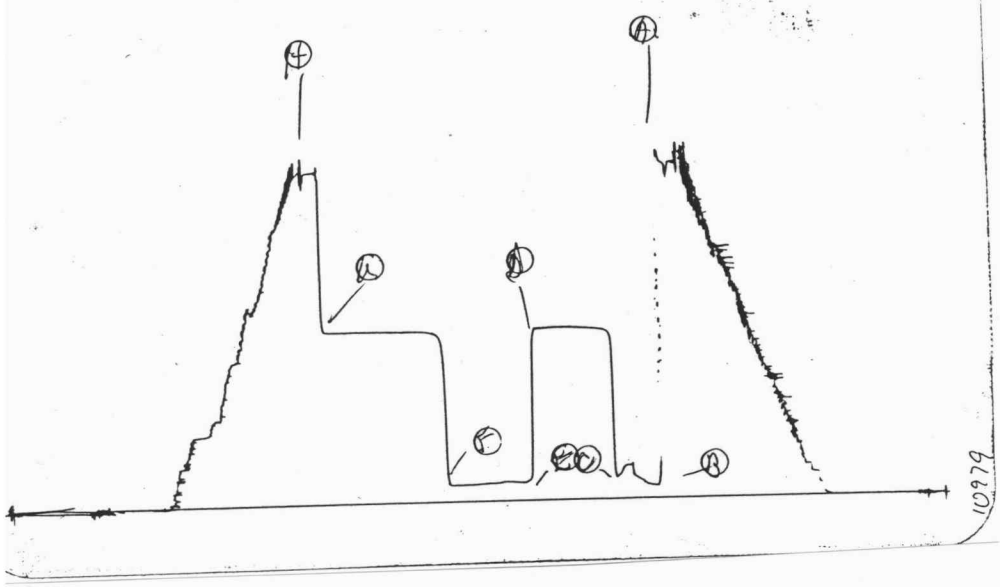


JKt 18685.

O