CONFIDENTIAL

ORIGINAL

Computer Inventoried

19 - 21 - 38W

AMOCO PRODUCTION COMPANY

RECEIVED

LEASE : WYATT "E"

JUL 20

WELL NO.: 1-19

CONSERVATION DIVISION

TEST NO.: 1

API#15-093-21455

TICKET NO. 70707500
26-JUN-95
LIBERAL

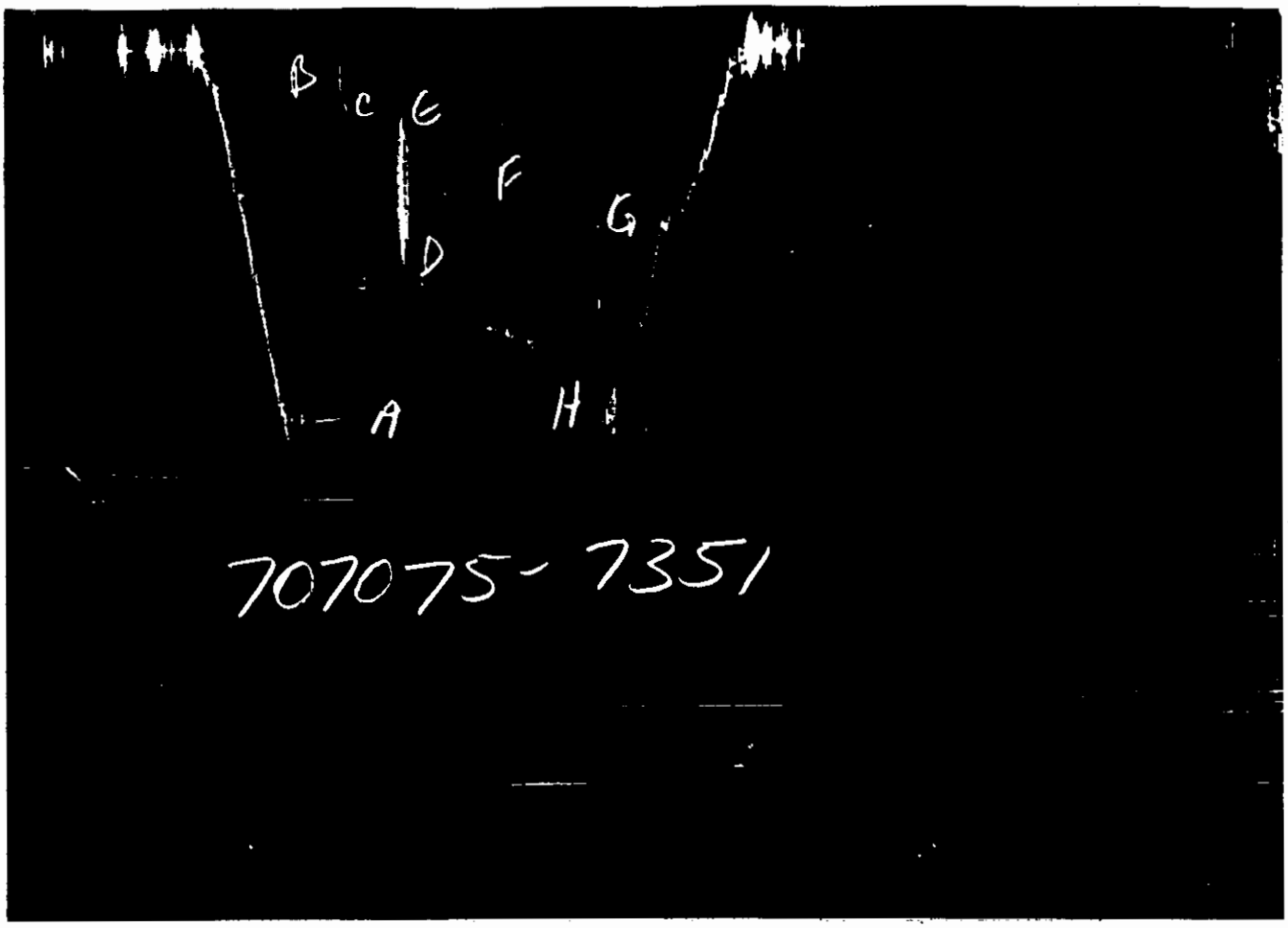
RELEASED

APR 6 1998

FROM CONFIDENTIAL

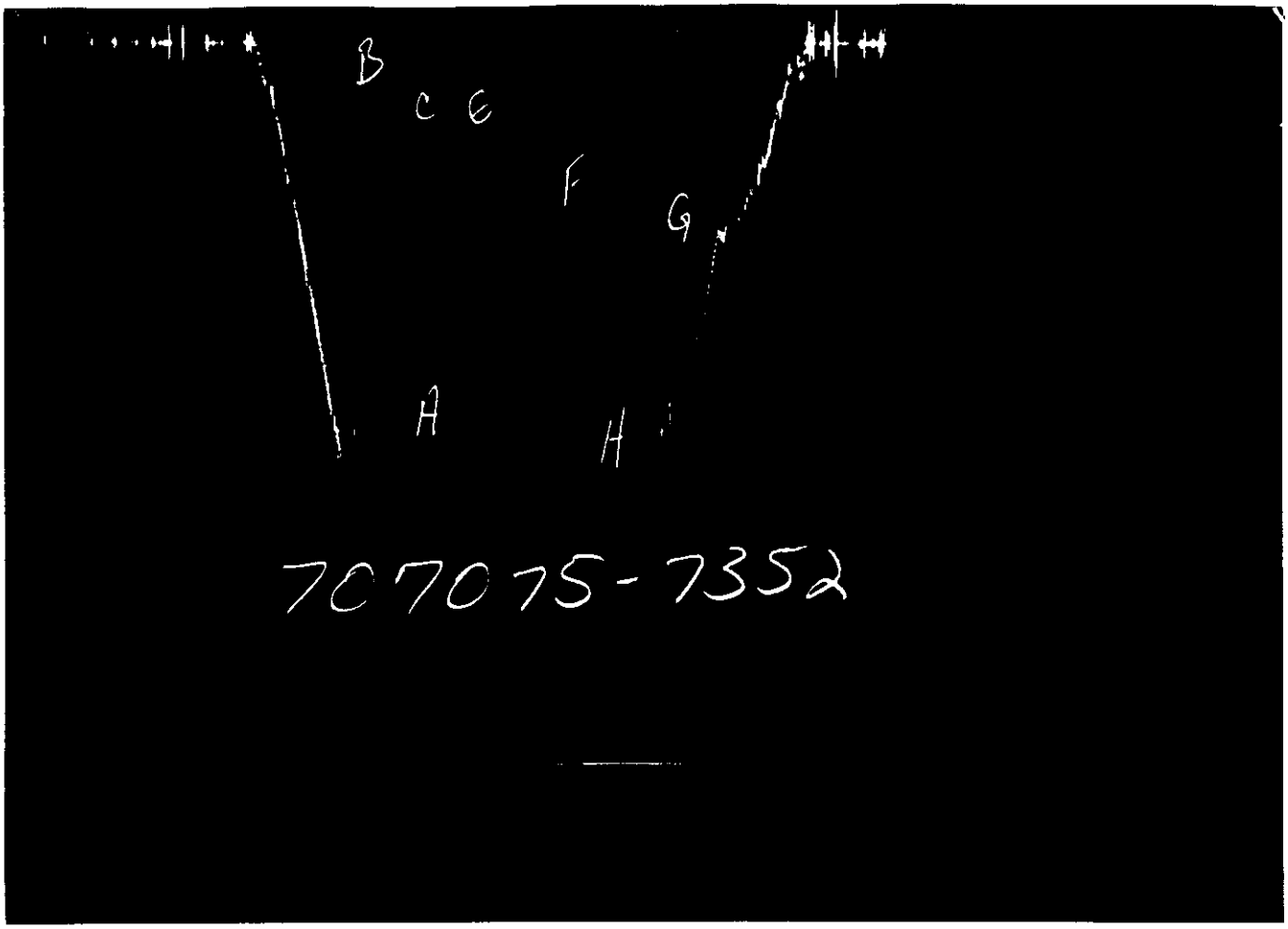
| | | | | |
|---|---|---|---|---|
| LEASE NAME: WYATT "E" | WELL NO.: 1-19 | TEST NO.: 1 | | |
| LEGAL LOCATION SEC. - TWP. - RNG.: 19 - 21 S - 38 W | FIELD AREA | TESTED INTERVAL: 5136.0 - 5247.0 | | |
| | | COUNTY: KEARNY | STATE: KANSAS | LEASE OWNER/COMPANY NAME: AMOCO PRODUCTION COMPANY |

DST REPORT PRODUCED BY HRS
A DIVISION OF HALLIBURTON COMPANY




GAUGE NO: 7351 DEPTH: 5123.0 BLANKED OFF: NO HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|---|---|---|---|---|---|---|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | 2402 | 2351.9 | | | |
| B | INITIAL FIRST FLOW | | 142.7 | 11.0 | 11.2 | F |
| C | FINAL FIRST FLOW | | 452.0 | | | |
| C | INITIAL FIRST CLOSED-IN | | 452.0 | 61.0 | 60.8 | C |
| D | FINAL FIRST CLOSED-IN | | 1173.5 | | | |
| E | INITIAL SECOND FLOW | | 488.1 | 121.0 | 121.4 | F |
| F | FINAL SECOND FLOW | | 1066.7 | | | |
| F | INITIAL SECOND CLOSED-IN | | 1066.7 | 119.0 | 118.6 | C |
| G | FINAL SECOND CLOSED-IN | | 1150.3 | | | |
| H | FINAL HYDROSTATIC | 2305 | 2376.1 | | | |




GAUGE NO: 7352 DEPTH: 5242.0 BLANKED OFF: YES HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|---|---|---|---|---|---|---|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | 2400 | 2403.1 | | | |
| B | INITIAL FIRST FLOW | 155 | 193.2 | 11.0 | 11.2 | F |
| C | FINAL FIRST FLOW | 528 | 503.0 | | | |
| C | INITIAL FIRST CLOSED-IN | 528 | 503.0 | 61.0 | 60.8 | C |
| D | FINAL FIRST CLOSED-IN | 1245 | 1227.2 | | | |
| E | INITIAL SECOND FLOW | 599 | 543.5 | 121.0 | 121.4 | F |
| F | FINAL SECOND FLOW | 1182 | 1118.7 | | | |
| F | INITIAL SECOND CLOSED-IN | 1182 | 1118.7 | 119.0 | 118.6 | C |
| G | FINAL SECOND CLOSED-IN | 1213 | 1204.4 | | | |
| H | FINAL HYDROSTATIC | 2368 | 2427.3 | | | |



ORIGINAL

CONFIDENTIAL


GAUGE NO: 6773 DEPTH: 5445.0 BLANKED OFF: YES HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|---|---|---|---|---|---|---|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | 2538 | 2501.2 | | | |
| B | INITIAL FIRST FLOW | | | 11.0 | | F |
| C | FINAL FIRST FLOW | | | | | |
| C | INITIAL FIRST CLOSED-IN | | | 61.0 | | C |
| D | FINAL FIRST CLOSED-IN | | | | | |
| E | INITIAL SECOND FLOW | | | 121.0 | | F |
| F | FINAL SECOND FLOW | | | | | |
| F | INITIAL SECOND CLOSED-IN | | | 119.0 | | C |
| G | FINAL SECOND CLOSED-IN | | | | | |
| H | FINAL HYDROSTATIC | 2538 | 2527.5 | | | |

## EQUIPMENT & HOLE DATA

FORMATION TESTED: MORROW
NET PAY (ft): 61.0
GROSS TESTED FOOTAGE: 111.0 PKR. TO PKR.
ALL DEPTHS MEASURED FROM: K.B.
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 7.875
ELEVATION (ft):
TOTAL DEPTH (ft): 5448.0
PACKER DEPTH(S) (ft): 5136, 5247
FINAL SURFACE CHOKE (in): 0.25000 (B. HOSE)
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 9.10
MUD VISCOSITY (sec): 50
ESTIMATED HOLE TEMP. (°F): 125
ACTUAL HOLE TEMP. (°F): ___ @ _____ ft

TICKET NUMBER: 70707500

DATE: 06-21-95 TEST NO: 1

TYPE DST: ON BTM. STRADDLE

FIELD CAMP: LIBERAL

TESTER: ARMSTRONG

WITNESS: BILL CHATHAM

DRILLING CONTRACTOR: CHEYENNE DRILLING RIG #3

## FLUID PROPERTIES FOR RECOVERED MUD & WATER

| SOURCE | RESISTIVITY | CHLORIDES |
|---|---|---|
| PIT | 0.470 @ 80 °F | 8354 ppm |
| TOP | 0.200 @ 80 °F | 18796 ppm |
| MIDDLE | 0.130 @ 80 °F | 33416 ppm |
| BOTTOM | 0.120 @ 80 °F | 37053 ppm |
| | @ °F | ppm |
| | @ °F | ppm |

## SAMPLER DATA

Psig AT SURFACE:
cu.ft. OF GAS:
cc OF OIL:
cc OF WATER:
cc OF MUD:
TOTAL LIQUID cc:

## HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ ___ °F
GAS/OIL RATIO (cu.ft. per bbl):
GAS GRAVITY:

## CUSHION DATA

| TYPE | AMOUNT | WEIGHT |
|---|---|---|
| | | |
| | | |

## RECOVERED:

488 FT OF DRILLING MUD
1962 FT OF SALTWATER
6 FT OF SAND

MEASURED FROM TESTER VALVE

## REMARKS:

| TYPE & SIZE MEASURING DEVICE: _____ | | | | | TICKET NO: 70707500 |
|---|---|---|---|---|---|
| TIME | CHOKE SIZE | SURFACE PRESSURE PSI | GAS RATE MCF | LIQUID RATE BPD | REMARKS |
| 06-20-95 | | | | | |
| 2000 | | | | | CALLED OUT; REQUESTED TO BE ON LOCATION |
| | | | | | AT MIDNIGHT |
| 2322 | | | | | ON LOCATION; RIG PULLING PIPE |
| 2355 | | | | | PIPE AND COLLARS OUT OF THE HOLE |
| 06-21-95 | | | | | |
| 0045 | | | | | PICKED UP TOOLS IN 3 SECTIONS |
| 0300 | | | | | STARTED IN THE HOLE |
| 0500 | | | | | STOPPED 1 JOINT OFF BOTTOM TO WAIT |
| | | | | | ON DAYLIGHT |
| 0558 | | | | | ON BOTTOM |
| 0600 | B.H. | | | | HYDROSPRING OPENED |
| 0602 | B.H. | | | | GOOD BLOW OFF BOTTOM OF BUCKET |
| 0611 | B.H. | | | | CLOSED TOOL; NO GAS AT SURFACE |
| 0712 | B.H. | | | | OPENED TOOL |
| 0714 | B.H. | | | | GOOD BLOW OFF BOTTOM OF BUCKET |
| 0740 | B.H. | | | | BLOW WEAKENED TO 6" IN BUCKET |
| 0750 | B.H. | | | | BLOW 4" IN BUCKET |
| 0805 | B.H. | | | | BLOW 2" IN BUCKET |
| 0820 | B.H. | | | | BLOW 1" IN BUCKET |
| 0835 | B.H. | | | | BLOW 1/2" IN BUCKET |
| 0850 | B.H. | | | | BLOW 1/8" IN BUCKET |
| 0905 | B.H. | | | | VERY WEAK BLOW (PRACTICALLY DEAD) |
| 0913 | B.H. | | | | CLOSED TOOL; NO GAS AT SURFACE |
| 1112 | | | | | PULLED TOOLS OFF BOTTOM |
| 1120 | | | | | STARTED OUT OF THE HOLE |
| 1430 | | | | | TOOLS AT TABLE |
| 1600 | | | | | READ CHARTS; LOADED TOOLS |
| 1700 | | | | | JOB COMPLETED |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| TICKET NO: 70707500 |
|---|
| CLOCK NO: 17524 HOUR: 24 |

| GAUGE NO: 7351 |
|---|
| DEPTH: 5123.0 |

| REF | | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t+\Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|---|
| | | | FIRST FLOW | | | |
| B | 1 | 0.0 | 142.7 | | | |
| | 2 | 1.0 | 248.2 | 105.5 | | |
| | 3 | 2.0 | 289.2 | 41.0 | | |
| | 4 | 3.0 | 310.0 | 20.8 | | |
| | 5 | 4.0 | 326.9 | 16.9 | | |
| | 6 | 5.0 | 347.9 | 21.0 | | |
| | 7 | 6.0 | 366.5 | 18.6 | | |
| | 8 | 7.0 | 383.3 | 16.9 | | |
| | 9 | 8.0 | 400.5 | 17.2 | | |
| | 10 | 9.0 | 416.8 | 16.2 | | |
| | 11 | 10.0 | 434.1 | 17.4 | | |
| C | 12 | 11.2 | 452.0 | 17.8 | | |
| | | | FIRST CLOSED-IN | | | |
| C | 1 | 0.0 | 452.0 | | | |
| | 2 | 1.0 | 953.9 | 501.9 | 0.9 | 1.085 |
| | 3 | 2.0 | 995.4 | 543.5 | 1.7 | 0.824 |
| | 4 | 3.0 | 1023.1 | 571.2 | 2.4 | 0.674 |
| | 5 | 4.0 | 1042.9 | 591.0 | 3.0 | 0.579 |
| | 6 | 5.0 | 1054.1 | 602.2 | 3.4 | 0.511 |
| | 7 | 6.0 | 1067.1 | 615.2 | 3.9 | 0.458 |
| | 8 | 7.0 | 1076.5 | 624.6 | 4.3 | 0.414 |
| | 9 | 8.0 | 1085.2 | 633.2 | 4.7 | 0.378 |
| | 10 | 9.0 | 1090.9 | 639.0 | 5.0 | 0.352 |
| | 11 | 10.0 | 1097.8 | 645.9 | 5.3 | 0.326 |
| | 12 | 12.0 | 1107.4 | 655.5 | 5.8 | 0.286 |
| | 13 | 14.0 | 1115.6 | 663.6 | 6.2 | 0.255 |
| | 14 | 16.0 | 1122.3 | 670.4 | 6.6 | 0.230 |
| | 15 | 18.0 | 1127.8 | 675.8 | 6.9 | 0.209 |
| | 16 | 20.0 | 1131.9 | 680.0 | 7.2 | 0.193 |
| | 17 | 22.0 | 1136.4 | 684.4 | 7.4 | 0.179 |
| | 18 | 24.0 | 1140.6 | 688.6 | 7.6 | 0.166 |
| | 19 | 26.0 | 1143.8 | 691.8 | 7.8 | 0.155 |
| | 20 | 28.0 | 1147.0 | 695.0 | 8.0 | 0.146 |
| | 21 | 30.0 | 1150.2 | 698.2 | 8.1 | 0.137 |
| | 22 | 35.0 | 1155.8 | 703.8 | 8.5 | 0.121 |
| | 23 | 40.0 | 1160.7 | 708.8 | 8.7 | 0.107 |
| | 24 | 45.0 | 1164.6 | 712.6 | 9.0 | 0.096 |
| | 25 | 50.0 | 1167.9 | 716.0 | 9.1 | 0.088 |
| | 26 | 55.0 | 1170.8 | 718.9 | 9.3 | 0.080 |
| D | 27 | 60.8 | 1173.5 | 721.6 | 9.4 | 0.073 |
| | | | SECOND FLOW | | | |
| E | 1 | 0.0 | 488.1 | | | |
| | 2 | 1.0 | 500.5 | 12.4 | | |
| | 3 | 2.0 | 515.8 | 15.3 | | |
| | 4 | 3.0 | 534.0 | 18.2 | | |
| | 5 | 4.0 | 551.2 | 17.2 | | |

| REF | | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t+\Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|---|
| | | | SECOND FLOW - CONTINUED | | | |
| | 6 | 5.0 | 566.8 | 15.6 | | |
| | 7 | 6.0 | 583.6 | 16.7 | | |
| | 8 | 7.0 | 598.6 | 15.0 | | |
| | 9 | 8.0 | 612.3 | 13.7 | | |
| | 10 | 9.0 | 626.5 | 14.2 | | |
| | 11 | 10.0 | 639.6 | 13.1 | | |
| | 12 | 12.0 | 666.7 | 27.1 | | |
| | 13 | 14.0 | 689.7 | 23.0 | | |
| | 14 | 16.0 | 709.9 | 20.3 | | |
| | 15 | 18.0 | 729.6 | 19.6 | | |
| | 16 | 20.0 | 747.0 | 17.4 | | |
| | 17 | 22.0 | 765.3 | 18.4 | | |
| | 18 | 24.0 | 781.6 | 16.3 | | |
| | 19 | 26.0 | 797.6 | 16.0 | | |
| | 20 | 28.0 | 810.2 | 12.6 | | |
| | 21 | 30.0 | 823.6 | 13.4 | | |
| | 22 | 35.0 | 854.8 | 31.2 | | |
| | 23 | 40.0 | 880.5 | 25.7 | | |
| | 24 | 45.0 | 903.7 | 23.2 | | |
| | 25 | 50.0 | 924.5 | 20.8 | | |
| | 26 | 55.0 | 942.1 | 17.6 | | |
| | 27 | 60.0 | 958.9 | 16.8 | | |
| | 28 | 70.0 | 986.1 | 27.2 | | |
| | 29 | 80.0 | 1008.5 | 22.4 | | |
| | 30 | 90.0 | 1026.9 | 18.4 | | |
| | 31 | 100.0 | 1041.0 | 14.1 | | |
| | 32 | 110.0 | 1053.3 | 12.3 | | |
| F | 33 | 121.4 | 1066.7 | 13.4 | | |
| | | | SECOND CLOSED-IN | | | |
| F | 1 | 0.0 | 1066.7 | | | |
| | 2 | 1.0 | 1090.9 | 24.2 | 1.0 | 2.144 |
| | 3 | 2.0 | 1095.1 | 28.3 | 1.9 | 1.833 |
| | 4 | 3.0 | 1097.3 | 30.6 | 2.9 | 1.660 |
| | 5 | 4.0 | 1099.7 | 33.0 | 3.9 | 1.529 |
| | 6 | 5.0 | 1100.5 | 33.8 | 4.8 | 1.439 |
| | 7 | 6.0 | 1102.0 | 35.2 | 5.7 | 1.364 |
| | 8 | 7.0 | 1103.6 | 36.8 | 6.6 | 1.301 |
| | 9 | 8.0 | 1104.7 | 37.9 | 7.5 | 1.246 |
| | 10 | 9.0 | 1105.5 | 38.7 | 8.4 | 1.196 |
| | 11 | 10.0 | 1106.8 | 40.0 | 9.3 | 1.153 |
| | 12 | 12.0 | 1109.2 | 42.4 | 11.0 | 1.081 |
| | 13 | 14.0 | 1110.4 | 43.7 | 12.7 | 1.019 |
| | 14 | 16.0 | 1112.5 | 45.8 | 14.2 | 0.969 |
| | 15 | 18.0 | 1114.0 | 47.2 | 15.9 | 0.922 |
| | 16 | 20.0 | 1114.9 | 48.2 | 17.4 | 0.882 |
| | 17 | 22.0 | 1116.5 | 49.8 | 18.9 | 0.846 |
| | 18 | 24.0 | 1118.0 | 51.2 | 20.3 | 0.815 |
| | 19 | 26.0 | 1118.9 | 52.2 | 21.7 | 0.786 |
| | 20 | 28.0 | 1120.4 | 53.6 | 23.1 | 0.758 |
| | 21 | 30.0 | 1121.2 | 54.4 | 24.5 | 0.734 |
| | 22 | 35.0 | 1123.6 | 56.8 | 27.7 | 0.680 |

REMARKS:

| TICKET NO: 70707500 | GAUGE NO: 7351 |
|---|---|
| CLOCK NO: 17524 HOUR: 24 | DEPTH: 5123.0 |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|---|---|---|---|---|---|
| | SECOND CLOSED-IN - CONTINUED | | | | |
| 23 | 40.0 | 1126.1 | 59.4 | 30.7 | 0.635 |
| 24 | 45.0 | 1128.1 | 61.3 | 33.6 | 0.596 |
| 25 | 50.0 | 1130.1 | 63.4 | 36.3 | 0.562 |
| 26 | 55.0 | 1132.4 | 65.6 | 38.9 | 0.533 |
| 27 | 60.0 | 1134.5 | 67.7 | 41.3 | 0.507 |
| 28 | 70.0 | 1138.0 | 71.3 | 45.8 | 0.462 |
| 29 | 80.0 | 1140.5 | 73.8 | 49.9 | 0.424 |
| 30 | 90.0 | 1143.7 | 77.0 | 53.6 | 0.393 |
| 31 | 100.0 | 1145.8 | 79.1 | 57.0 | 0.367 |
| 32 | 110.0 | 1147.9 | 81.2 | 60.1 | 0.343 |
| G 33 | 118.6 | 1150.3 | 83.6 | 62.6 | 0.326 |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|---|---|---|---|---|---|

REMARKS:

| TICKET NO: 70707500 |
|---|
| CLOCK NO: 17532 HOUR: 24 |

| GAUGE NO: 7352 |
|---|
| DEPTH: 5242.0 |

| REF | | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|---|
| | | | FIRST FLOW | | | |
| B | 1 | 0.0 | 193.2 | | | |
| | 2 | 1.0 | 280.4 | 87.2 | | |
| | 3 | 3.0 | 352.1 | 71.7 | | |
| | 4 | 4.0 | 372.7 | 20.6 | | |
| | 5 | 5.0 | 391.6 | 18.9 | | |
| | 6 | 6.0 | 413.0 | 21.4 | | |
| | 7 | 7.0 | 430.8 | 17.8 | | |
| | 8 | 8.0 | 451.0 | 20.2 | | |
| | 9 | 9.0 | 468.4 | 17.4 | | |
| | 10 | 9.9 | 484.4 | 16.0 | | |
| C | 11 | 11.2 | 503.0 | 18.6 | | |
| | | | FIRST CLOSED-IN | | | |
| C | 1 | 0.0 | 503.0 | | | |
| | 2 | 1.0 | 993.3 | 490.4 | 0.9 | 1.089 |
| | 3 | 2.0 | 1036.8 | 533.8 | 1.7 | 0.828 |
| | 4 | 3.0 | 1069.2 | 566.2 | 2.4 | 0.674 |
| | 5 | 4.0 | 1089.7 | 586.8 | 3.0 | 0.577 |
| | 6 | 5.0 | 1103.1 | 600.2 | 3.4 | 0.512 |
| | 7 | 6.0 | 1115.9 | 612.9 | 3.9 | 0.456 |
| | 8 | 7.0 | 1123.6 | 620.6 | 4.3 | 0.414 |
| | 9 | 8.0 | 1131.2 | 628.2 | 4.7 | 0.381 |
| | 10 | 9.0 | 1138.2 | 635.2 | 5.0 | 0.352 |
| | 11 | 10.0 | 1145.1 | 642.1 | 5.3 | 0.327 |
| | 12 | 12.0 | 1155.7 | 652.7 | 5.8 | 0.286 |
| | 13 | 14.0 | 1164.4 | 661.4 | 6.2 | 0.255 |
| | 14 | 16.0 | 1170.8 | 667.8 | 6.6 | 0.231 |
| | 15 | 18.0 | 1176.2 | 673.3 | 6.9 | 0.210 |
| | 16 | 20.0 | 1181.8 | 678.9 | 7.2 | 0.193 |
| | 17 | 22.0 | 1186.4 | 683.4 | 7.4 | 0.179 |
| | 18 | 24.0 | 1190.4 | 687.5 | 7.6 | 0.166 |
| | 19 | 26.0 | 1193.9 | 690.9 | 7.8 | 0.155 |
| | 20 | 28.0 | 1197.3 | 694.3 | 8.0 | 0.146 |
| | 21 | 30.0 | 1199.9 | 697.0 | 8.1 | 0.138 |
| | 22 | 35.0 | 1206.8 | 703.8 | 8.5 | 0.120 |
| | 23 | 40.0 | 1211.6 | 708.7 | 8.7 | 0.107 |
| | 24 | 45.0 | 1216.8 | 713.8 | 9.0 | 0.096 |
| | 25 | 50.0 | 1220.8 | 717.9 | 9.1 | 0.088 |
| | 26 | 55.0 | 1223.9 | 721.0 | 9.3 | 0.080 |
| D | 27 | 60.8 | 1227.2 | 724.2 | 9.4 | 0.073 |
| | | | SECOND FLOW | | | |
| E | 1 | 0.0 | 543.5 | | | |
| | 2 | 1.0 | 547.6 | 4.0 | | |
| | 3 | 2.0 | 560.6 | 13.0 | | |
| | 4 | 3.0 | 579.2 | 18.6 | | |
| | 5 | 4.0 | 596.6 | 17.4 | | |
| | 6 | 5.0 | 611.2 | 14.6 | | |

| REF | | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|---|
| | | SECOND FLOW - CONTINUED | | | | |
| | 7 | 6.0 | 627.6 | 16.3 | | |
| | 8 | 7.0 | 643.1 | 15.5 | | |
| | 9 | 8.0 | 657.7 | 14.6 | | |
| | 10 | 9.0 | 670.9 | 13.2 | | |
| | 11 | 10.0 | 684.3 | 13.4 | | |
| | 12 | 12.0 | 708.2 | 23.9 | | |
| | 13 | 14.0 | 731.1 | 22.9 | | |
| | 14 | 16.0 | 753.3 | 22.2 | | |
| | 15 | 18.0 | 773.2 | 19.9 | | |
| | 16 | 20.0 | 793.1 | 19.9 | | |
| | 17 | 22.0 | 811.8 | 18.7 | | |
| | 18 | 24.0 | 828.0 | 16.2 | | |
| | 19 | 26.0 | 844.3 | 16.3 | | |
| | 20 | 28.0 | 858.5 | 14.2 | | |
| | 21 | 30.0 | 870.9 | 12.5 | | |
| | 22 | 35.0 | 901.9 | 31.0 | | |
| | 23 | 40.0 | 929.3 | 27.4 | | |
| | 24 | 45.0 | 952.5 | 23.2 | | |
| | 25 | 50.0 | 972.8 | 20.2 | | |
| | 26 | 55.0 | 991.6 | 18.8 | | |
| | 27 | 60.0 | 1008.0 | 16.4 | | |
| | 28 | 70.0 | 1035.6 | 27.6 | | |
| | 29 | 80.0 | 1057.9 | 22.3 | | |
| | 30 | 90.0 | 1076.6 | 18.7 | | |
| | 31 | 100.0 | 1092.6 | 16.1 | | |
| | 32 | 110.0 | 1106.2 | 13.6 | | |
| F | 33 | 121.4 | 1118.7 | 12.5 | | |
| | | | SECOND CLOSED-IN | | | |
| F | 1 | 0.0 | 1118.7 | | | |
| | 2 | 1.0 | 1140.5 | 21.8 | 1.0 | 2.142 |
| | 3 | 2.0 | 1145.3 | 26.7 | 2.0 | 1.825 |
| | 4 | 3.0 | 1148.9 | 30.3 | 2.9 | 1.654 |
| | 5 | 4.0 | 1150.9 | 32.3 | 3.9 | 1.537 |
| | 6 | 5.0 | 1152.7 | 34.0 | 4.8 | 1.440 |
| | 7 | 6.0 | 1154.4 | 35.7 | 5.7 | 1.367 |
| | 8 | 7.0 | 1156.1 | 37.4 | 6.7 | 1.299 |
| | 9 | 8.0 | 1157.2 | 38.5 | 7.5 | 1.245 |
| | 10 | 9.0 | 1158.4 | 39.8 | 8.4 | 1.196 |
| | 11 | 10.0 | 1159.4 | 40.7 | 9.3 | 1.156 |
| | 12 | 12.0 | 1162.0 | 43.4 | 11.0 | 1.080 |
| | 13 | 14.0 | 1163.9 | 45.2 | 12.6 | 1.021 |
| | 14 | 16.0 | 1165.4 | 46.8 | 14.2 | 0.969 |
| | 15 | 18.0 | 1167.0 | 48.3 | 15.9 | 0.922 |
| | 16 | 20.0 | 1168.1 | 49.4 | 17.4 | 0.882 |
| | 17 | 22.0 | 1170.1 | 51.5 | 18.9 | 0.847 |
| | 18 | 24.0 | 1171.5 | 52.9 | 20.3 | 0.815 |
| | 19 | 26.0 | 1172.8 | 54.1 | 21.7 | 0.786 |
| | 20 | 28.0 | 1174.0 | 55.4 | 23.1 | 0.758 |
| | 21 | 30.0 | 1175.6 | 56.9 | 24.4 | 0.734 |
| | 22 | 35.0 | 1177.6 | 59.0 | 27.7 | 0.680 |
| | 23 | 40.0 | 1179.6 | 61.0 | 30.7 | 0.635 |

REMARKS:

| TICKET NO: 70707500 |
|---|
| CLOCK NO: 17532 HOUR: 24 |

| GAUGE NO: 7352 |
|---|
| DEPTH: 5242.0 |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t+\Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|
| | SECOND CLOSED-IN - CONTINUED | | | | |
| 24 | 45.0 | 1182.4 | 63.8 | 33.6 | 0.596 |
| 25 | 50.0 | 1184.8 | 66.1 | 36.3 | 0.563 |
| 26 | 55.0 | 1186.5 | 67.8 | 38.8 | 0.533 |
| 27 | 60.0 | 1189.0 | 70.3 | 41.3 | 0.507 |
| 28 | 70.0 | 1192.6 | 73.9 | 45.8 | 0.462 |
| 29 | 80.0 | 1194.8 | 76.1 | 49.9 | 0.424 |
| 30 | 90.0 | 1199.1 | 80.5 | 53.6 | 0.393 |
| 31 | 100.0 | 1201.3 | 82.7 | 57.0 | 0.366 |
| 32 | 110.0 | 1202.9 | 84.2 | 60.1 | 0.343 |
| G 33 | 118.6 | 1204.4 | 85.8 | 62.6 | 0.326 |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta t}{t+\Delta t}$ | $\log \frac{t+\Delta t}{\Delta t}$ |
|---|---|---|---|---|---|

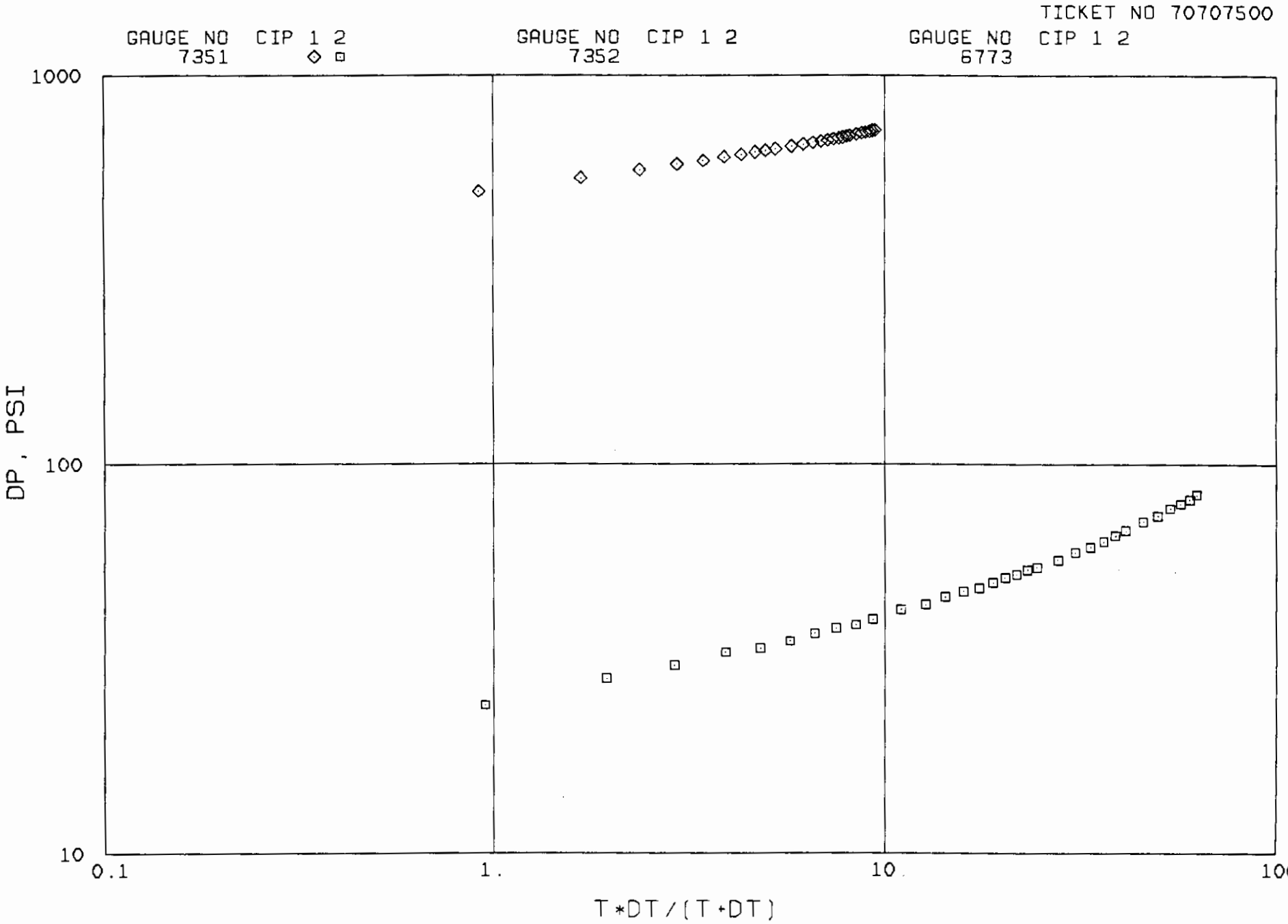
REMARKS:

**TICKET NO.** 70707500

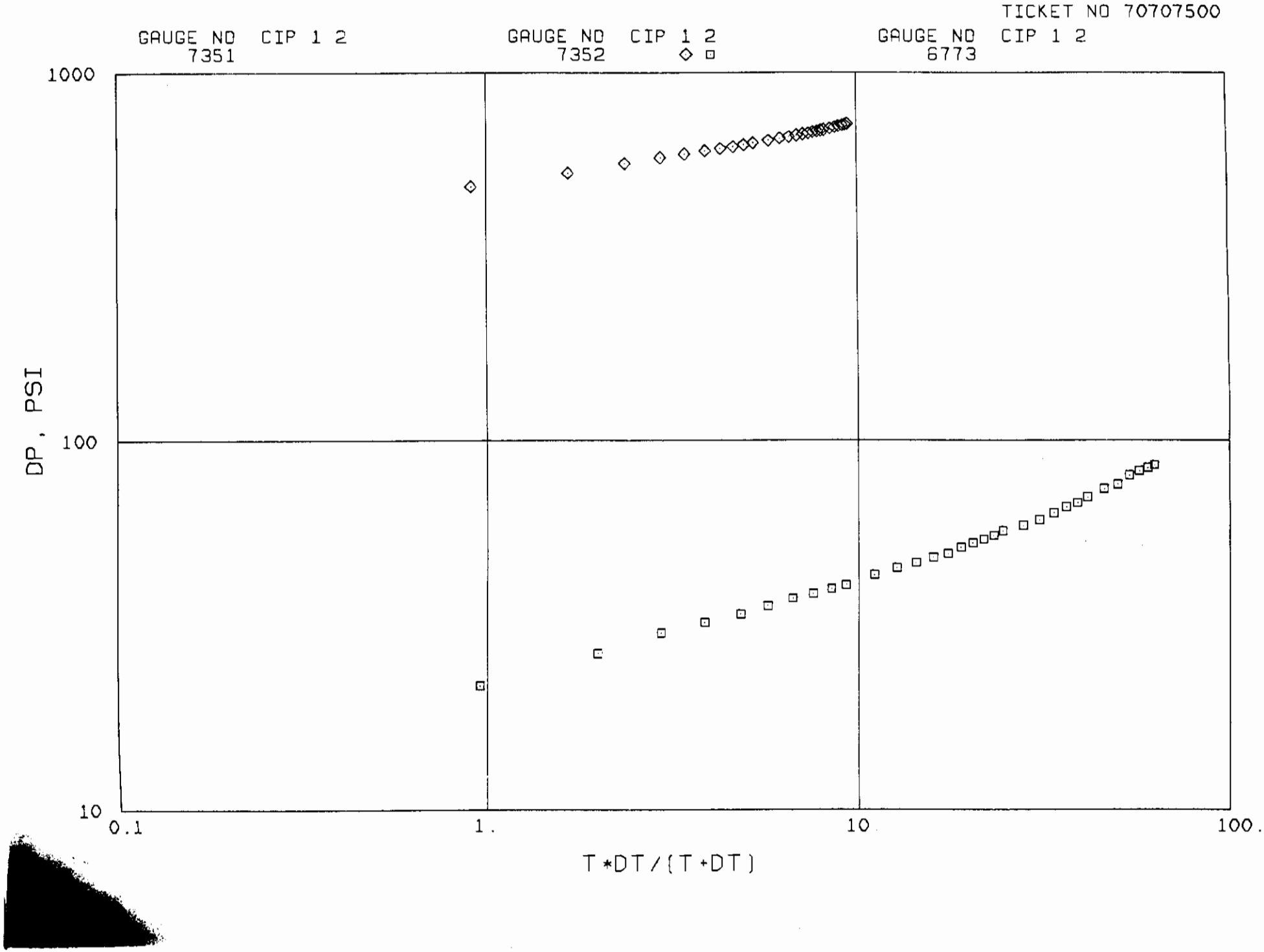
| | | O.D. | I.D. | LENGTH | DEPTH |
|---|---|---|---|---|---|
| 1 | DRILL PIPE | 4.500 | 3.826 | 4643.3 | |
| 3 | DRILL COLLARS | 6.000 | 2.250 | 431.5 | |
| 50 | IMPACT REVERSING SUB | 6.000 | 2.170 | 1.0 | 5075.4 |
| 3 | DRILL COLLARS | 6.000 | 2.250 | 28.1 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 11 | HANDLING SUB & CHOKE ASSEMBLY | 4.500 | 2.430 | 5.0 | |
| 12 | DUAL CIP VALVE | 5.000 | 0.750 | 7.0 | |
| 60 | HYDROSPRING TESTER | 5.000 | 0.750 | 5.0 | 5121.0 |
| 80 | AP RUNNING CASE | 5.000 | 2.250 | 4.0 | 5123.0 |
| 15 | JAR | 5.000 | 1.750 | 5.0 | |
| 17 | PRESSURE EQUALIZING CROSSOVER | 5.000 | 1.000 | 1.0 | |
| 70 | OPEN HOLE PACKER | 6.750 | 1.530 | 6.0 | 5136.0 |
| 20 | FLUSH JOINT ANCHOR | 5.000 | 2.370 | 11.0 | |
| 17 | PRESSURE EQUALIZING CROSSOVER | 5.000 | 1.000 | 1.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 3 | DRILL COLLARS | 6.000 | 2.250 | 88.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 81 | BLANKED-OFF RUNNING CASE | 5.000 | | 4.0 | 5242.0 |
| 70 | OPEN HOLE PACKER | 6.750 | 1.530 | 6.0 | 5247.0 |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 3 | DRILL COLLARS | 6.000 | 2.250 | 178.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 5 | CROSSOVER | 6.000 | 2.370 | 1.0 | |
| 20 | FLUSH JOINT ANCHOR | 5.000 | 2.370 | 11.0 | |
| 81 | BLANKED-OFF RUNNING CASE | 5.000 | | 4.0 | 5445.0 |
| | TOTAL DEPTH | | | | 5448.0 |

# EQUIPMENT DATA

TICKET NO 70707500



TICKET NO 70707500

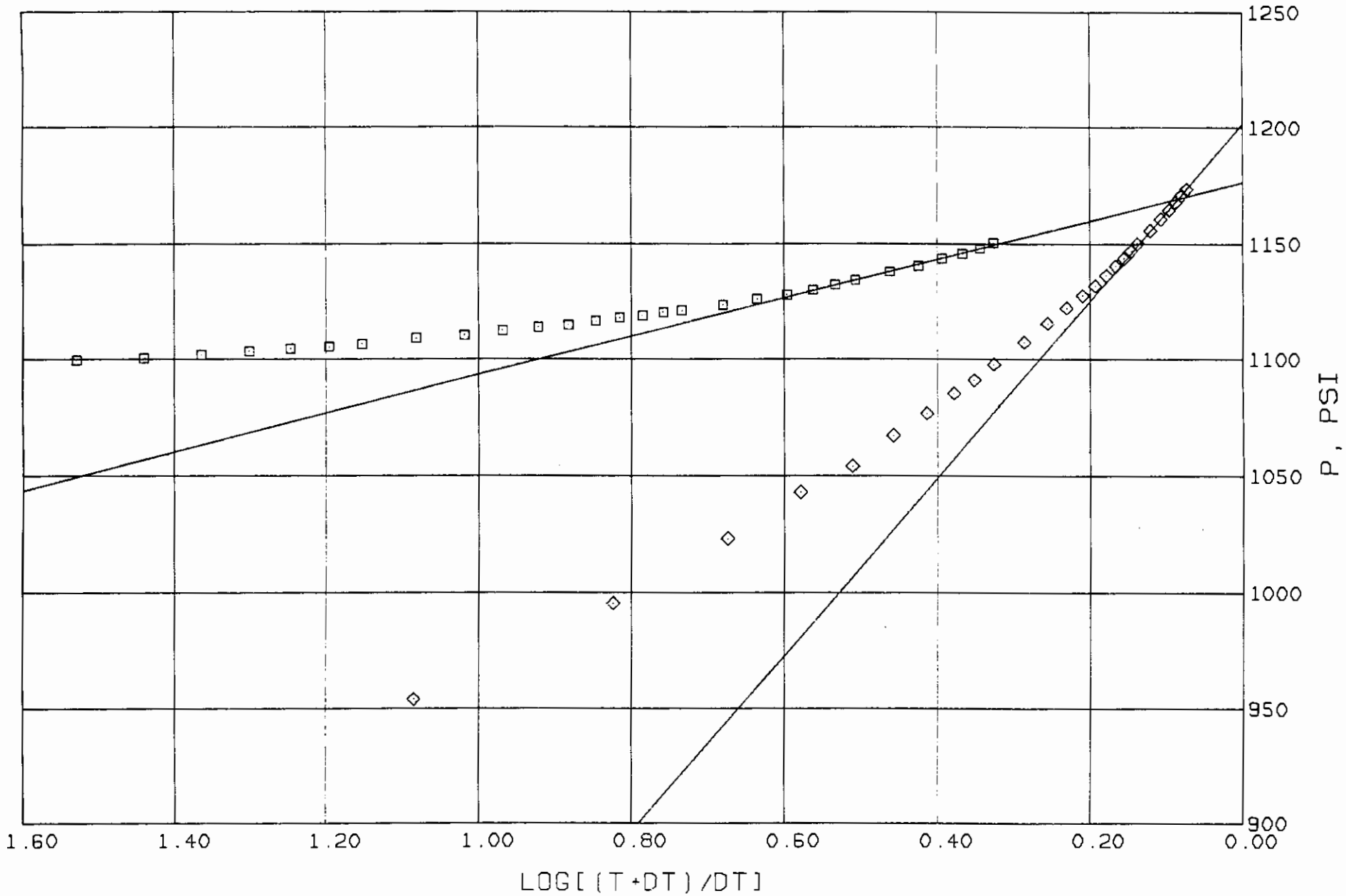


TICKET NO 70707500

GAUGE NO 7351 CIP 1 2 ◇ □

GAUGE NO 7352 CIP 1 2

GAUGE NO 6773 CIP 1 2

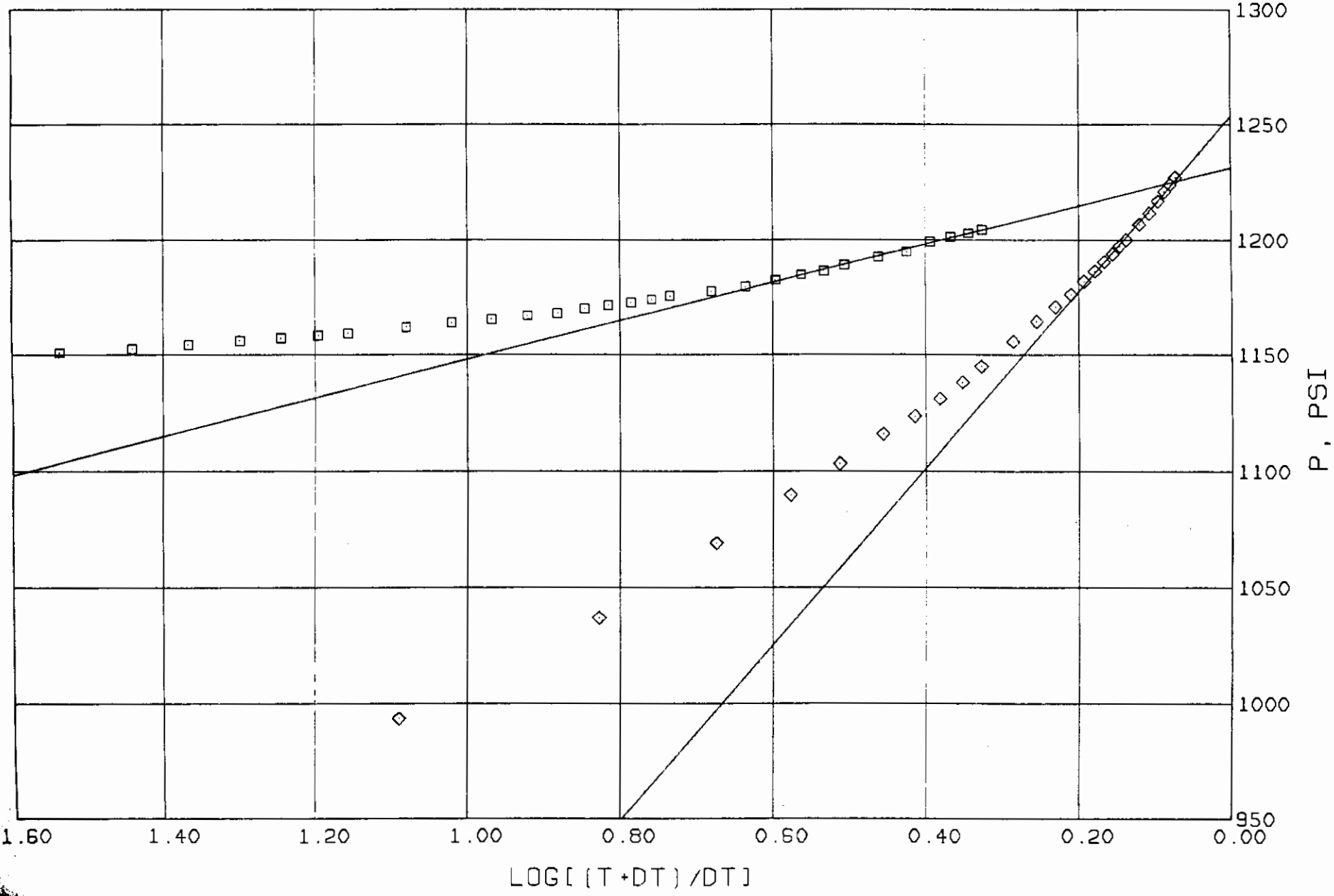


TICKET NO 70707500

GAUGE NO 7351 CIP 1 2

GAUGE NO 7352 CIP 1 2 ◇ □

GAUGE NO 6773 CIP 1 2



TICKET NUMBER 70707500

# SUMMARY OF RESERVOIR PARAMETERS

## USING HORNER METHOD FOR LIQUID WELLS

OIL GRAVITY 0.0 °API@60 °F
GAS GRAVITY 0.700
GAS/OIL RATIO 0.0 SCF/STB
TEMPERATURE 125.0 °F
NET PAY 61.0 ft
POROSITY 10.0 %
PIPE CAPACITY FACTORS 0.00492 0.01422 bbl/ft

WATER SALINITY 3.7 % SALT
FLUID GRADIENT 0.4448 psi/ft
FLUID PROPERTIES AT 1231.3 psig
VISCOSITY 0.573 cp
FMT VOL FACTOR 1.009 Rvol/Svol
SYSTEM COMPRESSIBILITY 7.73 $\times 10^{-6}$ vol/vol/psi

| GAUGE NUMBER | | 7351 | 7351 | 7352 | 7352 | | | |
|---|---|---|---|---|---|---|---|---|
| GAUGE DEPTH | | 5123.0 | 5123.0 | 5242.0 | 5242.0 | | | |
| FLOW AND CIP PERIOD | | 1 | 2 | 1 | 2 | | | UNITS |
| FINAL FLOW PRESSURE | $P_f$ | 452.0 | 1066.7 | 503.0 | 1118.7 | | | psig |
| TOTAL FLOW TIME | t | 11.2 | 132.6 | 11.2 | 132.6 | | | min |
| EXTRAPOLATED PRESSURE | P* | 1201.5 | 1176.6 | 1253.7 | 1231.3 | | | psig |
| ONE CYCLE PRESSURE | | 819.9 | 1093.4 | 872.8 | 1148.2 | | | psig |
| PRODUCTION RATE | Q | 953.4 | 624.4 | 1048.3 | 617.1 | | | BPD |
| TRANSMISSIBILITY | $kh/\mu$ | 410.1 | 1230.9 | 451.6 | 1217.5 | | | $\frac{md-ft}{cp}$ |
| FLOW CAPACITY | kh | 235.002 | 705.390 | 258.800 | 697.740 | | | md-ft |
| PERMEABILITY | k | 3.85250 | 11.5638 | 4.24262 | 11.4384 | | | md |
| SKIN FACTOR | S | -2.3 | -4.8 | -2.3 | -4.8 | | | |
| DAMAGE RATIO | DR | 0.5 | 0.2 | 0.5 | 0.2 | | | |
| POTENTIAL RATE | $Q_i$ | 953.4 | 624.4 | 1048.3 | 617.1 | | | BPD |
| RADIUS OF INVESTIGATION | $r_i$ | 40.7 | 243.0 | 42.7 | 241.7 | | | ft |

REMARKS: ANALYSIS RESULTS SHOWN ABOVE ARE RELATIVE TO SALTWATER. THE NATURE OF THE PLOTS INDICATE THE PRESENCE OF A PERMEABILITY ANOMALY WITHIN THE TESTED INTERVAL (I.E. NATURAL FRACTURES, LAYERED FORMATION, ETC.)