

DERMOT SCHOOL

1

2

6017.4 - 6049.2

AMOCO PRODUCTION COMPANY

LEASE OWNER/COMPANY NAME

TESTED INTERVAL

WELL NO

TEST NO

LEASE NAME

LEGAL LOCATION
SEC - TWP - RANG

31 - 31 S - 39 W

FIELD
AREA

COUNTY

MORTON

STATE

KANSAS

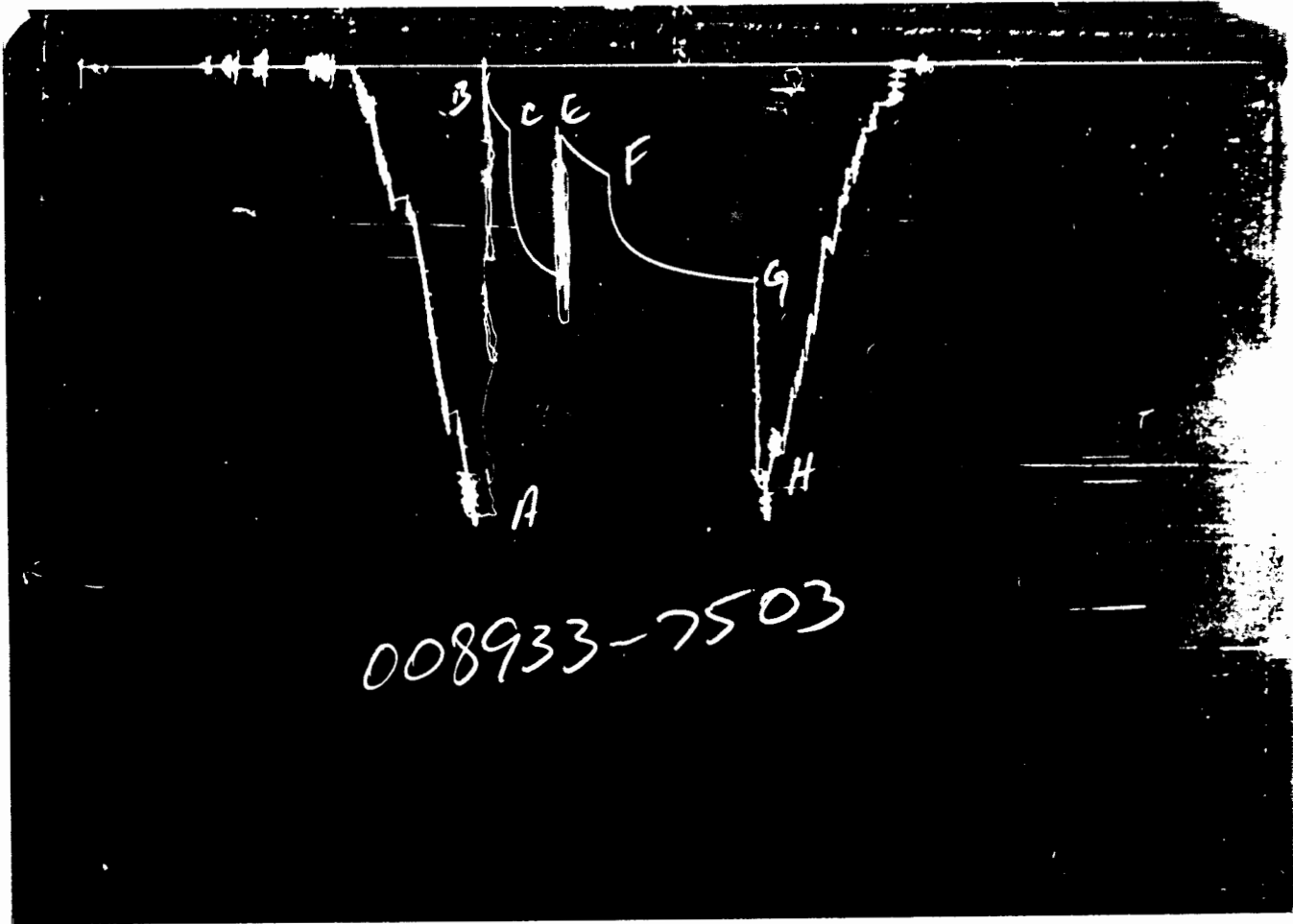
AMOCO PRODUCTION COMPANY

LEASE : DERMOT SCHOOL

WELL NO. : 1

TEST NO. : 2

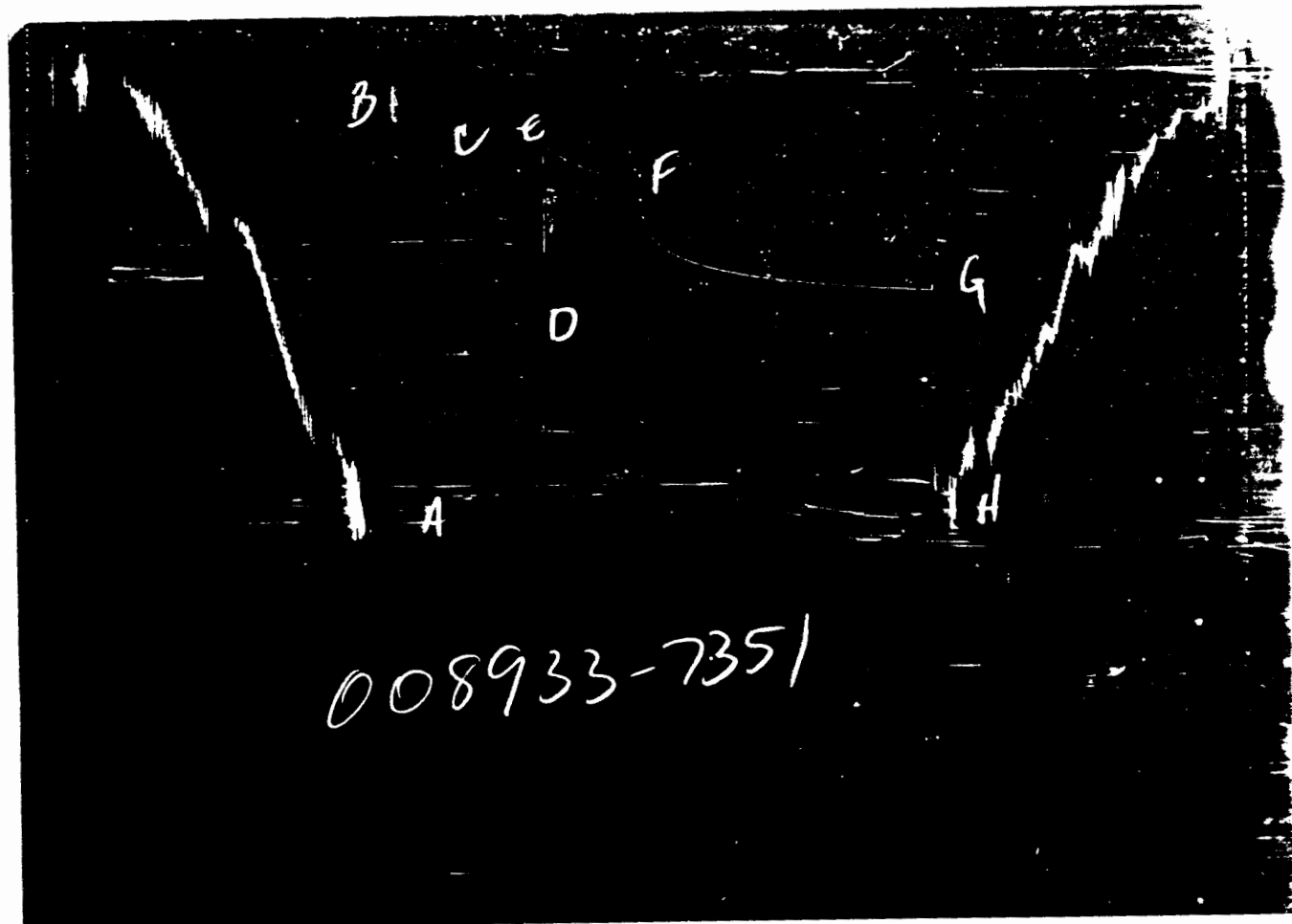
TICKET NO. 00893300
22-MAR-93
LIBERAL



008933-7503

GAUGE NO: 7503 DEPTH: 6001.3 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2950	2942.6			
B	INITIAL FIRST FLOW	69	60.1			
C	FINAL FIRST FLOW	415	421.0	31.0	29.5	F
C	INITIAL FIRST CLOSED-IN	415	421.0			
D	FINAL FIRST CLOSED-IN	1360	1384.8	59.0	60.9	C
E	INITIAL SECOND FLOW	454	453.8			
F	FINAL SECOND FLOW	720	717.8	60.0	58.9	F
F	INITIAL SECOND CLOSED-IN	720	717.8			
G	FINAL SECOND CLOSED-IN	1408	1419.3	174.0	174.6	C
H	FINAL HYDROSTATIC	2950	2774.3			



GAUGE NO: 7351 DEPTH: 6044.1 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2940	2957.7			
B	INITIAL FIRST FLOW	113	98.3			
C	FINAL FIRST FLOW	457	454.1	31.0	29.5	F
C	INITIAL FIRST CLOSED-IN	457	454.1			
D	FINAL FIRST CLOSED-IN	1401	1408.5	59.0	50.9	C
E	INITIAL SECOND FLOW	575	473.0			
F	FINAL SECOND FLOW	741	745.4	60.0	58.9	F
F	INITIAL SECOND CLOSED-IN	741	745.4			
G	FINAL SECOND CLOSED-IN	1427	1442.4	174.0	174.6	C
H	FINAL HYDROSTATIC	2798	2799.0			



008933-7352

GAUGE NO: 7352 DEPTH: 6196.7 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	3024	3021.4			
B	INITIAL FIRST FLOW			31.0		F
C	FINAL FIRST FLOW					
C	INITIAL FIRST CLOSED-IN			59.0		C
D	FINAL FIRST CLOSED-IN					
E	INITIAL SECOND FLOW			60.0		F
F	FINAL SECOND FLOW					
F	INITIAL SECOND CLOSED-IN			174.0		C
G	FINAL SECOND CLOSED-IN					
H	FINAL HYDROSTATIC	2925				

TICKET NO: 00893300

GAUGE NO: 7351

CLOCK NO: 3301 HOUR: 12

DEPTH: 6044.1

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	96.3			
2	3.0	201.1	104.7		
3	6.0	277.6	76.6		
4	9.0	313.8	36.2		
5	12.0	338.4	24.6		
6	15.0	360.6	22.2		
7	18.0	383.1	22.5		
8	21.0	403.2	20.1		
9	24.0	422.8	19.6		
10	27.0	439.7	16.9		
C 11	29.5	454.1	14.4		
FIRST CLOSED-IN					
C 1	0.0	454.1			
2	1.0	858.5	404.4	1.0	1.467
3	2.0	912.8	458.6	1.9	1.198
4	3.0	956.6	502.5	2.7	1.041
5	4.0	994.4	540.2	3.5	0.925
6	5.0	1025.6	571.5	4.2	0.843
7	6.0	1052.8	598.7	5.0	0.775
8	7.0	1074.4	620.3	5.6	0.719
9	8.0	1097.6	643.5	6.3	0.672
10	9.0	1115.1	660.9	6.9	0.632
11	10.0	1132.2	678.1	7.4	0.599
12	12.0	1165.0	710.9	8.5	0.539
13	14.0	1190.2	736.1	9.5	0.493
14	16.0	1212.1	758.0	10.4	0.454
15	18.0	1230.9	776.7	11.2	0.422
16	20.0	1248.2	794.0	11.9	0.394
17	22.0	1263.5	809.4	12.6	0.370
18	24.0	1277.0	822.9	13.2	0.349
19	26.0	1290.0	835.9	13.8	0.330
20	28.0	1301.7	847.6	14.4	0.313
21	30.0	1312.3	858.1	14.9	0.298
22	35.0	1335.5	881.4	16.0	0.266
23	40.0	1354.3	900.1	17.0	0.240
24	45.0	1370.0	915.9	17.8	0.219
25	50.0	1384.2	930.1	18.6	0.202
26	55.0	1396.4	942.3	19.2	0.187
D 27	60.9	1408.5	954.3	19.9	0.172
SECOND FLOW					
E 1	0.0	473.0			
2	5.0	509.3	36.3		
3	10.0	544.3	35.0		
4	15.0	573.2	28.9		
5	20.0	598.0	24.8		
6	25.0	622.1	24.1		

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
7	30.0	642.0	19.8		
8	35.0	661.1	19.2		
9	40.0	680.3	19.2		
10	45.0	698.7	18.4		
11	50.0	715.5	16.8		
12	55.0	732.3	16.8		
F 13	58.9	745.4	13.1		
SECOND CLOSED-IN					
F 1	0.0	745.4			
2	1.0	951.9	206.5	1.0	1.958
3	2.0	986.7	241.2	1.9	1.659
4	3.0	1016.6	271.2	2.9	1.491
5	4.0	1037.4	292.0	3.8	1.369
6	5.0	1056.5	311.1	4.7	1.272
7	6.0	1072.4	326.9	5.6	1.199
8	7.0	1087.6	342.1	6.5	1.136
9	8.0	1100.7	355.3	7.4	1.080
10	9.0	1111.1	365.7	8.2	1.033
11	10.0	1120.6	375.2	9.0	0.995
12	12.0	1139.3	393.9	10.5	0.924
13	14.0	1157.0	411.5	12.1	0.866
14	16.0	1171.9	426.4	13.6	0.814
15	18.0	1184.2	438.8	15.0	0.772
16	20.0	1195.6	450.2	16.3	0.735
17	22.0	1206.3	460.9	17.6	0.702
18	24.0	1215.8	470.4	18.9	0.671
19	26.0	1226.4	480.9	20.1	0.643
20	28.0	1235.0	489.6	21.3	0.619
21	30.0	1242.7	497.3	22.4	0.597
22	35.0	1261.7	516.2	25.1	0.548
23	40.0	1277.7	532.3	27.5	0.507
24	45.0	1292.8	547.3	29.8	0.472
25	50.0	1305.6	560.2	32.0	0.442
26	55.0	1316.2	570.8	33.9	0.416
27	60.0	1327.3	581.8	35.8	0.394
28	70.0	1346.2	600.8	39.1	0.355
29	80.0	1361.9	616.5	42.0	0.323
30	90.0	1374.8	629.3	44.6	0.297
31	100.0	1386.0	640.5	46.9	0.275
32	110.0	1397.2	651.8	49.0	0.256
33	120.0	1406.7	661.2	50.9	0.240
34	135.0	1417.9	672.5	53.4	0.219
35	150.0	1428.3	682.9	55.7	0.201
36	165.0	1438.1	692.7	57.6	0.186
G 37	174.6	1442.4	697.0	58.7	0.178

REMARKS:

TICKET NO: 00893300

CLOCK NO: 13833 HOUR: 24

GAUGE NO: 7503

DEPTH: 6001.3

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	60.1		
	2	3.0	161.4	101.2	
	3	6.0	239.4	78.0	
	4	9.0	276.9	37.5	
	5	12.0	300.7	23.7	
	6	15.0	326.3	25.7	
	7	18.0	348.3	22.0	
	8	21.0	369.7	21.3	
	9	24.0	387.5	17.8	
	10	27.0	406.2	18.8	
C	11	29.5	421.0	14.8	
FIRST CLOSED-IN					
C	1	0.0	421.0		
	2	1.0	796.0	375.0	0.9 1.495
	3	2.0	864.1	443.1	1.8 1.208
	4	3.0	910.2	489.1	2.7 1.033
	5	4.0	946.7	525.7	3.5 0.927
	6	5.0	981.3	560.2	4.3 0.837
	7	6.0	1007.9	586.9	5.0 0.771
	8	7.0	1033.1	612.1	5.6 0.719
	9	8.0	1054.3	633.3	6.3 0.673
	10	9.0	1079.3	658.3	6.9 0.631
	11	10.0	1096.0	675.0	7.5 0.598
	12	12.0	1128.9	707.9	8.6 0.538
	13	14.0	1155.6	734.6	9.5 0.492
	14	16.0	1178.7	757.7	10.4 0.455
	15	18.0	1198.9	777.9	11.2 0.422
	16	20.0	1216.4	795.4	11.9 0.394
	17	22.0	1233.3	812.3	12.6 0.369
	18	24.0	1248.2	827.2	13.2 0.349
	19	26.0	1261.4	840.3	13.8 0.330
	20	28.0	1273.4	852.4	14.4 0.313
	21	30.0	1283.2	862.2	14.9 0.298
	22	35.0	1307.7	886.7	16.0 0.266
	23	40.0	1328.8	907.8	17.0 0.240
	24	45.0	1345.0	924.0	17.8 0.219
	25	50.0	1359.3	938.3	18.6 0.202
	26	55.0	1372.3	951.3	19.2 0.187
D	27	60.9	1384.8	963.8	19.9 0.172
SECOND FLOW					
E	1	0.0	453.8		
	2	5.0	475.8	22.0	
	3	10.0	510.9	35.0	
	4	15.0	540.6	29.7	
	5	20.0	566.3	25.7	
	6	25.0	591.4	25.1	

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
	7	30.0	612.6	21.2	
	8	35.0	633.0	20.4	
	9	40.0	652.2	19.3	
	10	45.0	669.9	17.7	
	11	50.0	687.4	17.5	
	12	55.0	704.6	17.2	
F	13	58.9	717.8	13.2	
SECOND CLOSED-IN					
F	1	0.0	717.8		
	2	1.0	916.9	199.1	1.0 1.963
	3	2.0	952.8	235.1	2.0 1.648
	4	3.0	976.0	258.2	2.9 1.491
	5	4.0	997.7	279.9	3.8 1.366
	6	5.0	1018.4	300.6	4.8 1.268
	7	6.0	1035.4	317.7	5.6 1.196
	8	7.0	1049.1	331.3	6.5 1.135
	9	8.0	1062.0	344.2	7.3 1.083
	10	9.0	1075.5	357.7	8.1 1.036
	11	10.0	1088.3	370.5	9.0 0.992
	12	12.0	1107.9	390.1	10.5 0.924
	13	14.0	1124.1	406.4	12.1 0.865
	14	16.0	1140.7	422.9	13.5 0.815
	15	18.0	1155.3	437.5	15.0 0.771
	16	20.0	1167.7	449.9	16.3 0.735
	17	22.0	1179.3	461.5	17.6 0.701
	18	24.0	1190.0	472.2	18.9 0.671
	19	26.0	1200.0	482.2	20.1 0.644
	20	28.0	1208.5	490.7	21.3 0.619
	21	30.0	1217.0	499.2	22.4 0.597
	22	35.0	1237.0	519.2	25.1 0.547
	23	40.0	1254.0	536.2	27.5 0.507
	24	45.0	1268.4	550.7	29.8 0.472
	25	50.0	1281.3	563.5	31.9 0.442
	26	55.0	1292.9	575.1	33.9 0.416
	27	60.0	1304.0	586.2	35.7 0.394
	28	70.0	1322.9	605.1	39.1 0.355
	29	80.0	1338.4	620.6	42.0 0.323
	30	90.0	1352.0	634.2	44.6 0.297
	31	100.0	1363.6	645.8	47.0 0.275
	32	110.0	1374.4	656.6	49.0 0.256
	33	120.0	1384.0	666.2	50.9 0.240
	34	135.0	1395.4	677.6	53.5 0.219
	35	150.0	1406.0	688.2	55.7 0.201
	36	165.0	1414.8	697.0	57.6 0.186
G	37	174.6	1419.3	701.5	58.7 0.178

REMARKS:

EQUIPMENT & HOLE DATA

FORMATION TESTED: SAINT LOUIS
 NET PAY (ft): _____
 GROSS TESTED FOOTAGE: 31.8 PKR. TO PKR.
 ALL DEPTHS MEASURED FROM: K.B.
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 3266.0 AT KELLY BUSHING
 TOTAL DEPTH (ft): 6200.0
 PACKER DEPTH(S) (ft): 6017. 6049
 FINAL SURFACE CHOKE (in): _____
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 9.10
 MUD VISCOSITY (sec): 54
 ESTIMATED HOLE TEMP. (°F): _____
 ACTUAL HOLE TEMP. (°F): 135 @ 6195.1 ft

TICKET NUMBER: 00893300

DATE: 03-13-93 TEST NO: 2

TYPE DST: ON BTM. STRADDLE

FIELD CAMP:

LIBERAL

TESTER: JEFF CLARK

WITNESS: SAM CARMACK

DRILLING CONTRACTOR:

CHEYENNE DRILLING RIG #2

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
<u>PIT</u>	<u>1.050</u> @ <u>64</u> °F	<u>3440</u> ppm
<u>SAMPLER</u>	<u>0.120</u> @ <u>64</u> °F	<u>42153</u> ppm
<u>TOP</u>	<u>0.380</u> @ <u>64</u> °F	<u>10322</u> ppm
<u>MIDDLE</u>	<u>0.120</u> @ <u>64</u> °F	<u>46693</u> ppm
<u>BOTTOM</u>	<u>0.120</u> @ <u>64</u> °F	<u>38829</u> ppm
_____	_____ @ _____ °F	_____ ppm

SAMPLER DATA

P_{sig} AT SURFACE: 715.0
 cu.ft. OF GAS: _____
 cc OF OIL: _____
 cc OF WATER: 2240.0
 cc OF MUD: _____
 TOTAL LIQUID cc: 2240.0

HYDROCARBON PROPERTIES

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

CUSHION DATA





























TYPE AMOUNT WEIGHT

RECOVERED:

1700 FT. OF SALTWATER

MEASURED FROM
TESTER VALVE

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	5429.3	
3		DRILL COLLARS.....	6.250	2.250	493.1	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.3	5923.0
3		DRILL COLLARS.....	6.250	2.250	59.6	
5		CROSSOVER.....	6.000	2.250	1.0	
11		HANDLING SUB & CHOKE ASSEMBLY...	4.500	3.500	4.7	
13		DUAL CIP SAMPLER.....	5.000	0.750	6.6	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	5999.5
80		AP RUNNING CASE.....	5.000	2.250	4.1	6001.3
15		JAR.....	5.000	1.750	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
17		PRESSURE EQUALIZING CROSSDVER...	5.000	2.620	1.0	
70		OPEN HOLE PACKER.....	6.750	1.530	5.8	6017.4
20		FLUSH JOINT ANCHOR.....	5.000	2.370	18.0	
17		PRESSURE EQUALIZING CROSSDVER...	5.000	0.750	1.0	
22		BLANK ANCHOR.....	5.000	3.750	4.1	
17		PRESSURE EQUALIZING CROSSDVER...	5.000	0.620	1.0	
80		AP RUNNING CASE.....	5.000	2.250	4.1	6044.1
70		OPEN HOLE PACKER.....	6.750	1.530	5.8	6049.2
5		CROSSDVER.....	5.000	2.250	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	6.0	
5		CROSSDVER.....	6.000	2.250	1.0	
3		DRILL COLLARS.....	6.250	2.250	120.2	
5		CROSSDVER.....	6.000	2.250	1.0	
5		CROSSDVER.....	6.000	2.250	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	11.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.5	6195.1
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	6196.7
		TOTAL DEPTH				6200.0

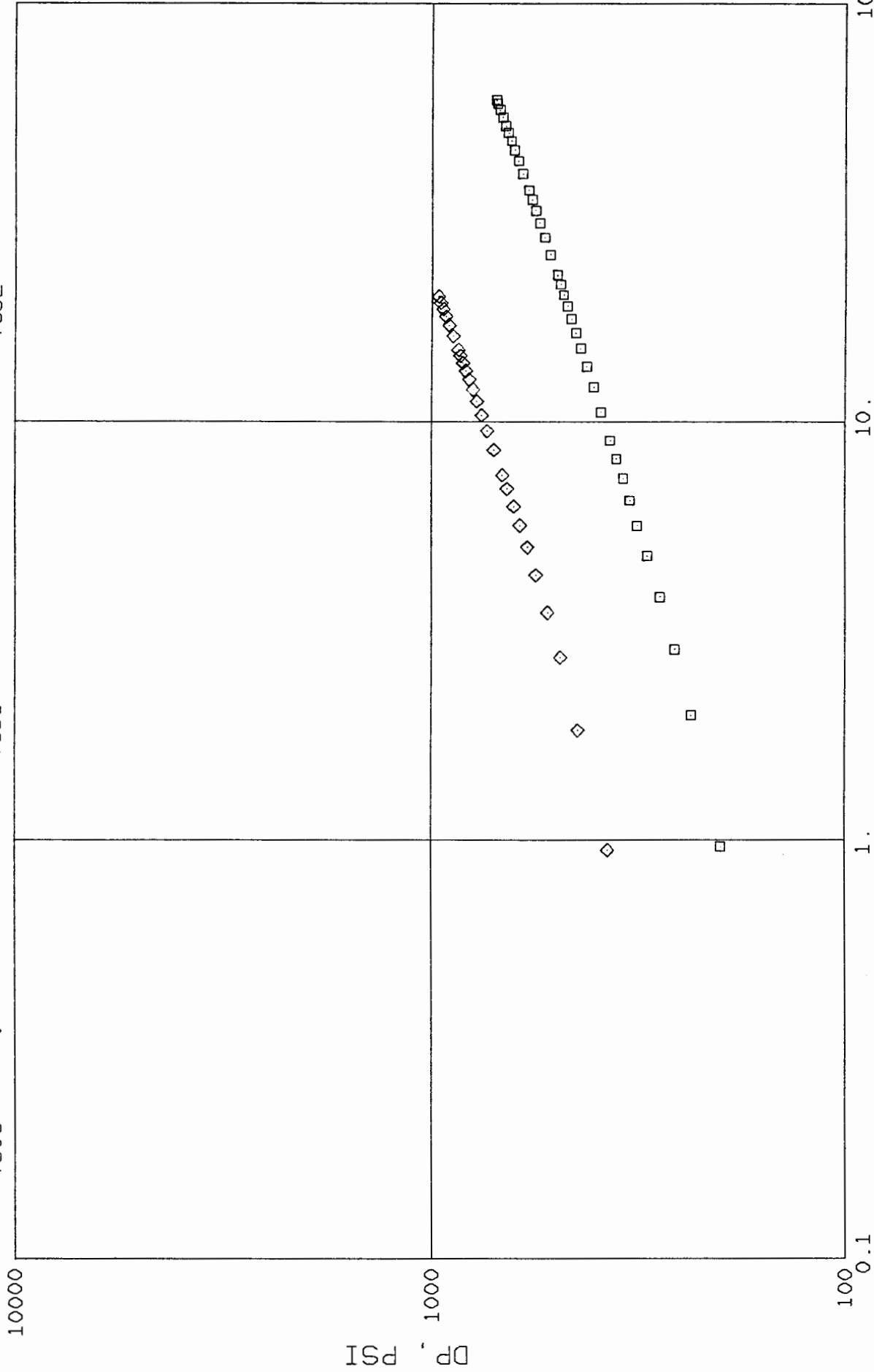
EQUIPMENT DATA

TICKET NO 00893300
CIP 1 2

GAUGE NO
7352

GAUGE NO CIP 1 2
7351

GAUGE NO CIP 1 2
7503



$T*DT/(T+DT)$

1.

10.

100.

10000

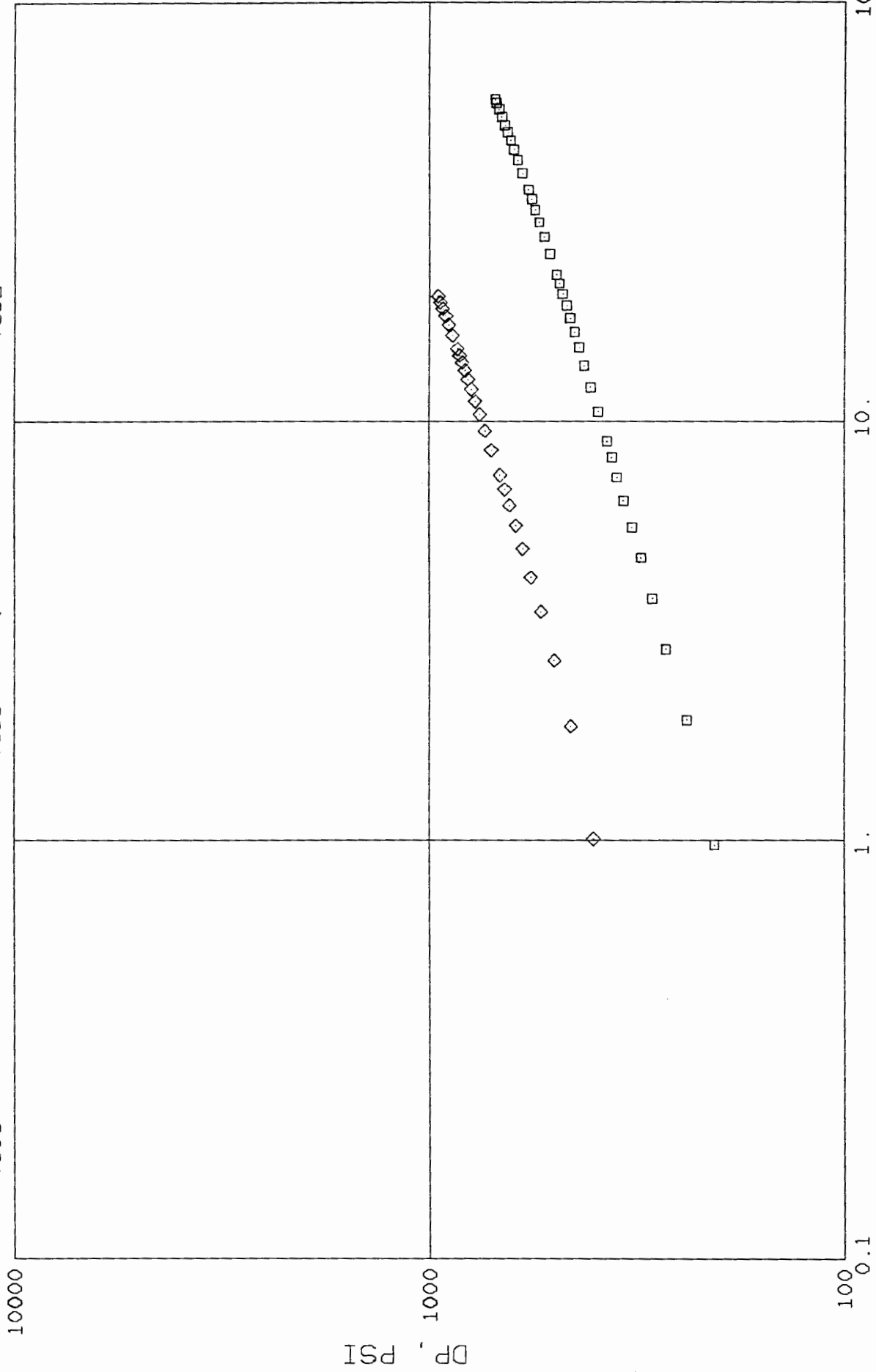
DP, PSI

TICKET NO 00893300
CIP 1 2

GAUGE NO
7352

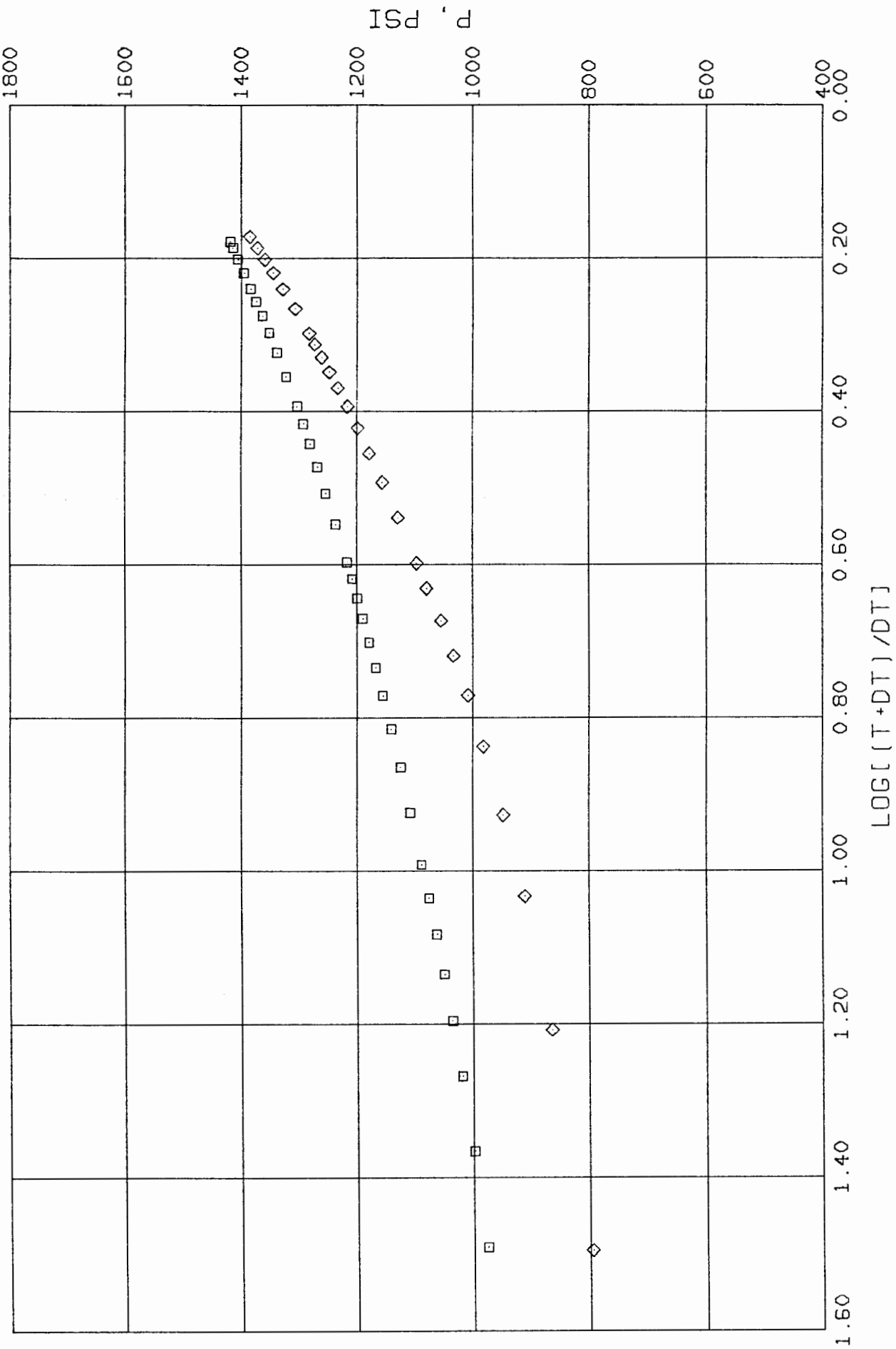
GAUGE NO CIP 1 2
7351

GAUGE NO CIP 1 2
7503



$T*DT/(T+DT)$

TICKET NO 00893300
 GAUGE NO CIP 1 2 7352
 GAUGE NO CIP 1 2 7351
 GAUGE NO CIP 1 2 7503

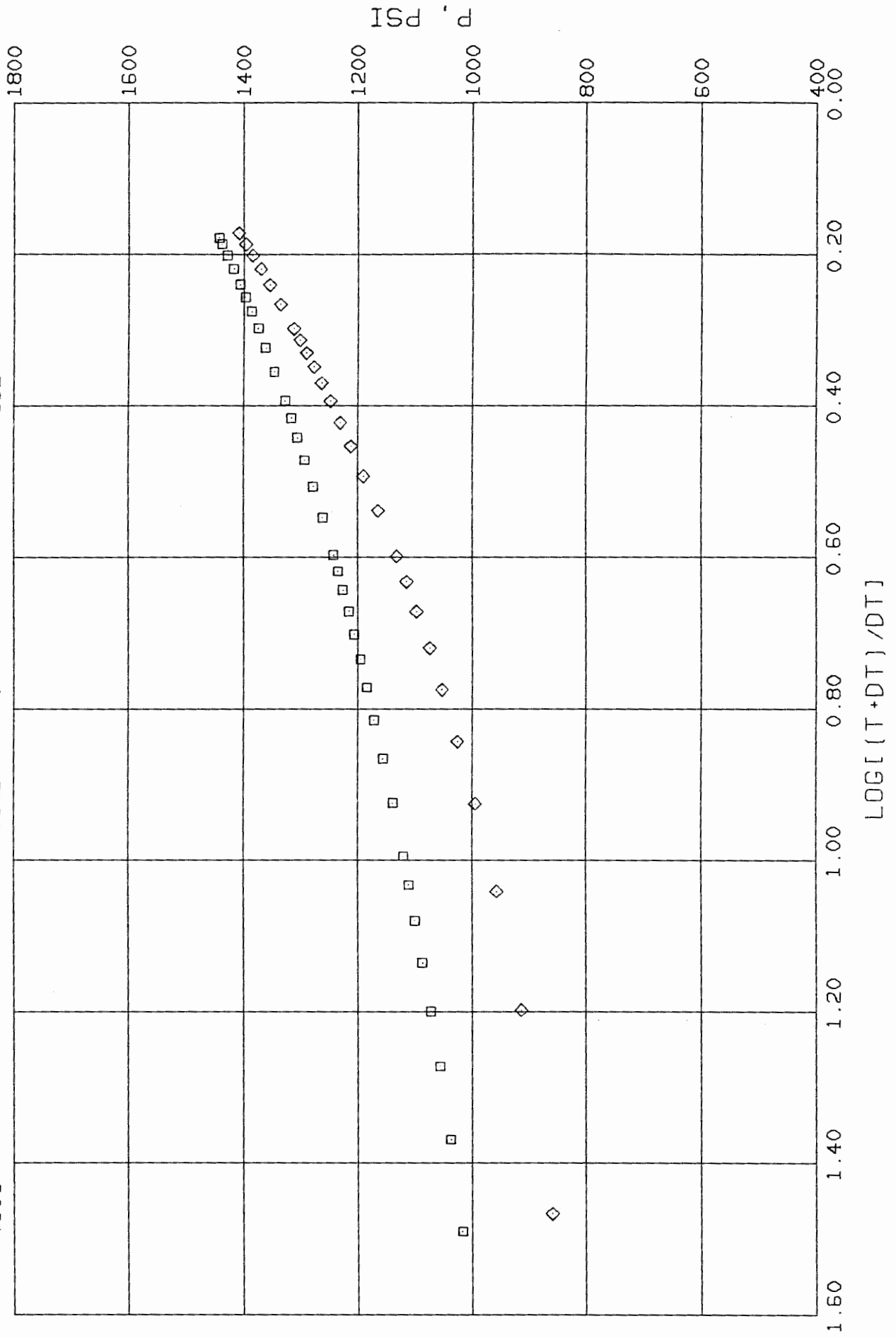


TICKET NO 00893300

GAUGE NO CIP 1 2
7352

GAUGE NO CIP 1 2
7351

GAUGE NO CIP 1 2
7503



EQUATIONS FOR DST LIQUID WELL ANALYSIS

TEMPERATURE RECORDER CHART



10° each circle

Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[\frac{m(P^*) - m(P_i)}{m} - \text{LOG} \left(\frac{k (t/60)}{\phi \mu c_i r_w^2} \right) + 3.23 \right]$	
Damage Ratio	$DR = \frac{m(P^*) - m(P_i)}{m(P^*) - m(P_i) - 0.87 mS}$	
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_i)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_i)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k (t/60)}{\phi \mu c_i}}$	ft

Because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, HRS is unable to guarantee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by HRS. HRS personnel will use their best efforts in gathering such information and their best judgment in interpreting it but customer agrees that HRS shall not be responsible for any damages arising from the use of such information except where due to HRS gross negligence or willful misconduct in the preparation of furnishing of information.