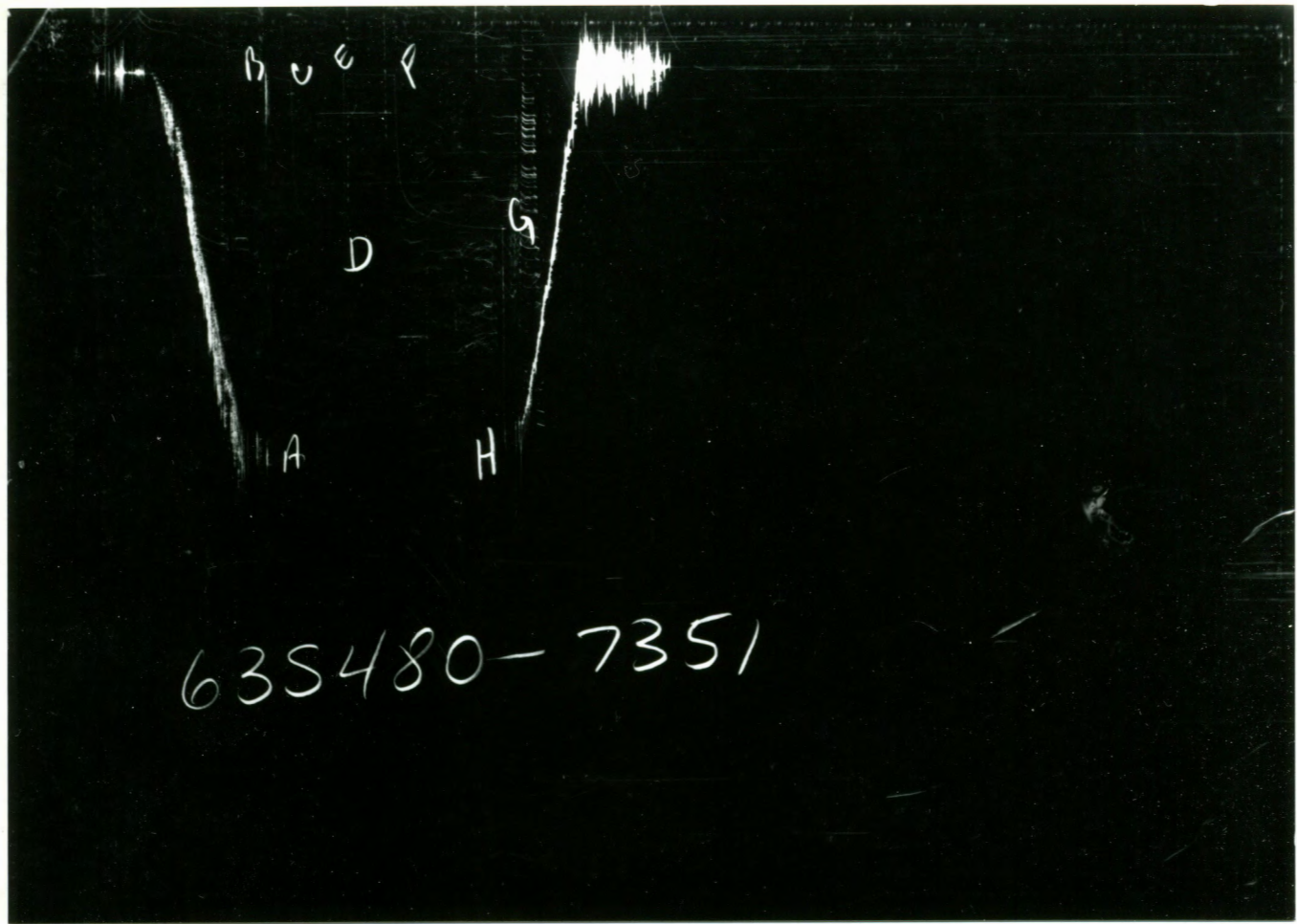


COASTAL OIL & GAS CORPORATION LEASE : HARRISON WELL NO.: 1-18 TEST NO.: 1 <i>API #15-129-21326</i>

TICKET NO. 63548000
30-SEP-94
LIBERAL

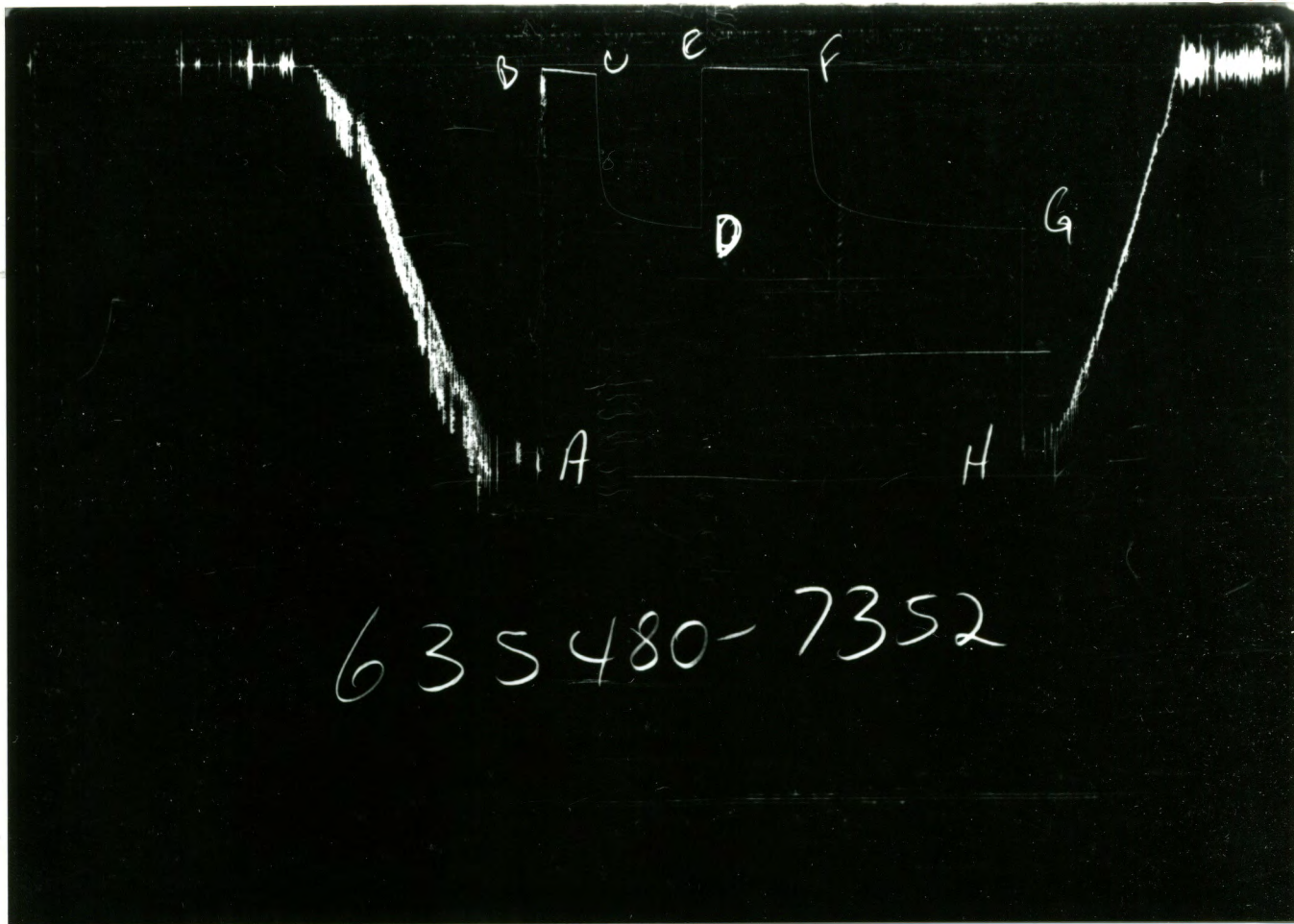
HARRISON	1-18	1	4957.0 - 4982.0	COASTAL OIL & GAS CORPORATION
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RNG	18 - 32 S - 42 W	FIELD AREA	EAST OF ELKHART	COUNTY
			MORTON	STATE
				KANSAS



635480-7351

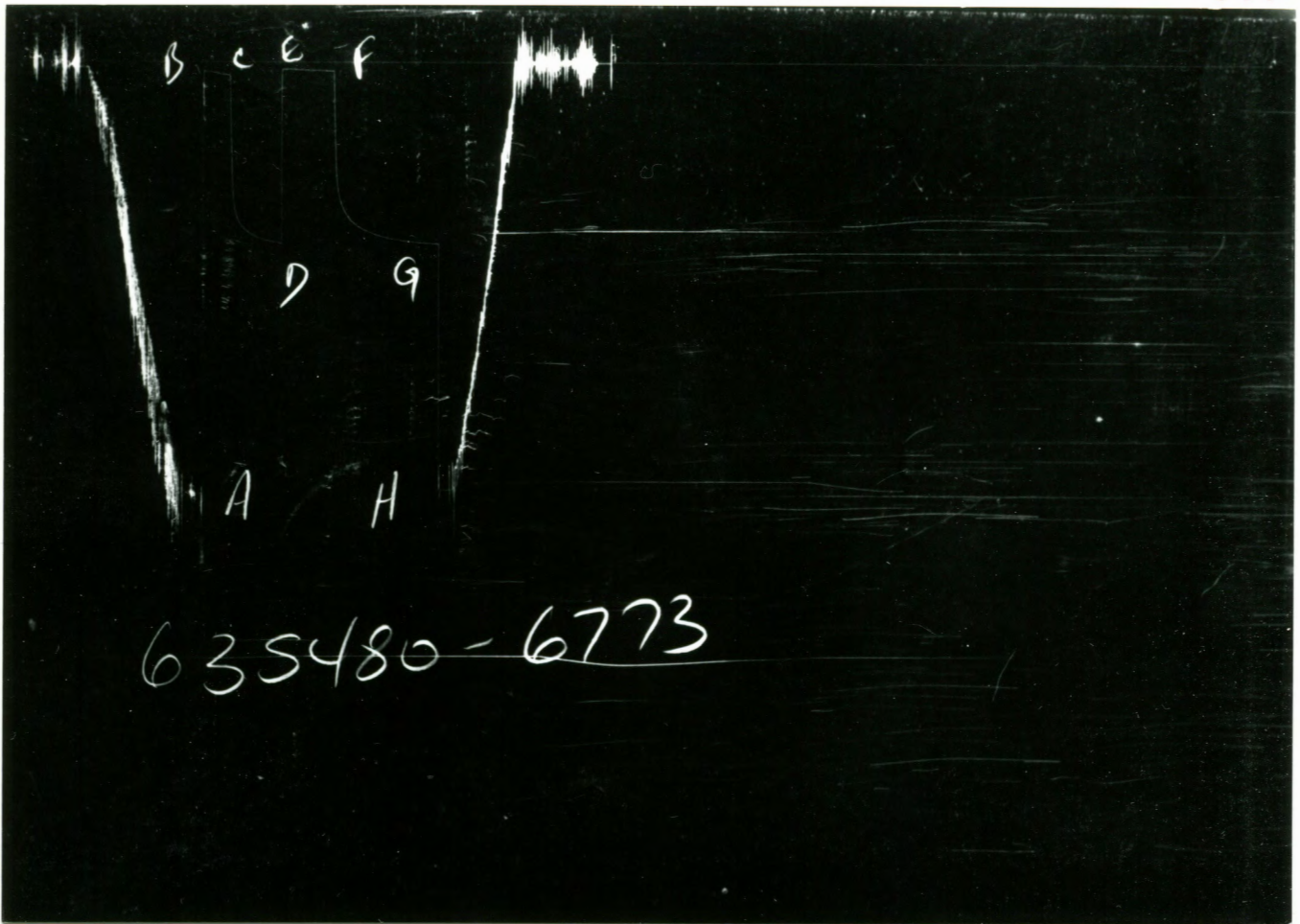
GAUGE NO: 7351 DEPTH: 4937.5 BLANKED OFF: NQ HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2240	2327.9			
B	INITIAL FIRST FLOW	32	31.6			
C	FINAL FIRST FLOW	96	58.4	30.0	30.3	F
C	INITIAL FIRST CLOSED-IN	96	58.4			
D	FINAL FIRST CLOSED-IN	990	975.2	60.0	59.1	C
E	INITIAL SECOND FLOW	32	18.2			
F	FINAL SECOND FLOW	64	33.1	60.0	60.2	F
F	INITIAL SECOND CLOSED-IN	64	33.1			
G	FINAL SECOND CLOSED-IN	991	987.1	120.0	120.4	C
H	FINAL HYDROSTATIC	2240	2321.4			



GAUGE NO: 7352 DEPTH: 4941.6 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2400	2333.5			
B	INITIAL FIRST FLOW	31	25.3			
C	FINAL FIRST FLOW	62	59.0	30.0	30.3	F
C	INITIAL FIRST CLOSED-IN	62	59.0			
D	FINAL FIRST CLOSED-IN	933	980.2	60.0	59.1	C
E	INITIAL SECOND FLOW	31	27.3			
F	FINAL SECOND FLOW	31	34.5	60.0	60.2	F
F	INITIAL SECOND CLOSED-IN	31	34.5			
G	FINAL SECOND CLOSED-IN	964	984.7	120.0	120.4	C
H	FINAL HYDROSTATIC	2337	2321.7			



GAUGE NO: 6773 DEPTH: 4979.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2313	2355.3			
B	INITIAL FIRST FLOW	29	47.2	30.0	30.3	F
C	FINAL FIRST FLOW	86	70.9			
C	INITIAL FIRST CLOSED-IN	86	70.9	60.0	59.1	C
D	FINAL FIRST CLOSED-IN	993	991.5			
E	INITIAL SECOND FLOW	29	41.9	60.0	60.2	F
F	FINAL SECOND FLOW	43	49.7			
F	INITIAL SECOND CLOSED-IN	43	49.7	120.0	120.4	C
G	FINAL SECOND CLOSED-IN	965	994.3			
H	FINAL HYDROSTATIC	2313	2337.7			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MORROW
 NET PAY (ft): _____
 GROSS TESTED FOOTAGE: 25.0 PACKER TO T.D.
 ALL DEPTHS MEASURED FROM: KELLY BUSHING
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 3560.0
 TOTAL DEPTH (ft): 4982.0
 PACKER DEPTH(S) (ft): 4951, 4957
 FINAL SURFACE CHOKE (in): _____
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 9.00
 MUD VISCOSITY (sec): 48
 ESTIMATED HOLE TEMP. (°F): 110
 ACTUAL HOLE TEMP. (°F): 120 @ 4977.0 ft

TICKET NUMBER: 63548000

DATE: 09-25-94 TEST NO: 1

TYPE DST: OPEN HOLE

FIELD CAMP:
LIBERAL

TESTER: RICHARD TAYLOR

WITNESS: CHARLES PANNELL

DRILLING CONTRACTOR:
CHEYENNE DRILLING COMPANY RIG #3

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
PIT	<u>10.000</u> @ <u>70</u> °F	<u>2752</u> ppm
TDP	<u>0.650</u> @ <u>70</u> °F	<u>5045</u> ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm

SAMPLER DATA

Psig AT SURFACE: 61.0
 cu.ft. OF GAS: 0.361
 cc OF OIL: _____
 cc OF WATER: _____
 cc OF MUD: 20.0 +
 TOTAL LIQUID cc: 20.0 +

HYDROCARBON PROPERTIES

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

CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED :

32 FEET OF GAS CUT DRILLING MUD
 -
 GAS TO THE SURFACE IN 26 MINUTES.

MEASURED FROM
TESTER VALVE

REMARKS :

TYPE & SIZE MEASURING DEVICE: _____					TICKET NO: 63548000
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
09-24-94					
1500					CALLED OUT
1740					ON LOCATION, RIG PULLING DRILL
					PIPE
1820					OUT OF HOLE WITH DRILL PIPE
					AND COLLARS
1835					PICKED UP TOOLS
1912					STARTED IN HOLE WITH TOOLS
					AND DRILL PIPE
2110					RIGGED UP TESTING HEAD
2130	BH				TOOL OPENED WITH SLIGHT BLOW
					1/4" IN BUCKET
2135	BH				2" BLOW IN BUCKET
2137	BH				4" BLOW IN BUCKET
2140	BH				STRONG BLOW ON BOTTOM OF
					BUCKET, RIGGED UP PRESSURE GAUGE
2142	BH	15			
2149	BH	16			
2156	BH	18			
2158	BH	19			GAS TO THE SURFACE
2200	BH	20			
2202	BH	20			CLOSED TOOL
2302	1/2	2.0			TOOL OPENED
2307	1/2	1.0			
2310	1/2	1.0			CHANGED TO 1/4" CHOKE
2315	1/4	2.5			
2320	1/4	4.0			
2325	1/4	4.0			
2330	1/4	4.0			
2335	1/4	4.0			
2340	1/4	4.0			
2345	1/4	4.5			
2350	1/4	6.0			
2355	1/4	6.5			
2400	1/4	7.0			
09-25-94					
0002	1/4	7.5			CLOSED TOOL

[illegible]

TICKET NO: 63548000

GAUGE NO: 7351

CLOCK NO: 17532 HOUR: 24

DEPTH: 4937.5

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta P}{t + \Delta P}$	$\log \frac{t + \Delta P}{\Delta P}$
FIRST FLOW					
B 1	0.0	31.6			
2	5.0	33.4	1.7		
3	10.0	35.9	2.5		
4	15.0	42.7	6.8		
5	20.0	49.5	6.8		
6	25.0	54.6	5.1		
C 7	30.3	58.4	3.8		
FIRST CLOSED-IN					
C 1	0.0	58.4			
2	1.0	421.5	363.1	1.0	1.499
3	2.0	600.6	542.1	1.9	1.206
4	3.0	700.8	642.4	2.7	1.049
5	4.0	756.9	698.4	3.5	0.937
6	5.0	796.3	737.8	4.3	0.848
7	6.0	820.9	762.4	5.0	0.781
8	7.0	836.8	778.4	5.7	0.727
9	8.0	849.8	791.3	6.3	0.681
10	9.0	860.3	801.9	6.9	0.641
11	10.0	870.5	812.1	7.5	0.605
12	12.0	884.1	825.7	8.6	0.548
13	14.0	896.2	837.8	9.6	0.501
14	16.0	905.8	847.4	10.5	0.461
15	18.0	914.3	855.9	11.3	0.429
16	20.0	920.9	862.4	12.1	0.401
17	22.0	927.2	868.8	12.7	0.376
18	24.0	933.5	875.0	13.4	0.355
19	26.0	938.0	879.5	14.0	0.336
20	28.0	943.4	885.0	14.6	0.318
21	30.0	947.2	888.8	15.1	0.304
22	35.0	956.8	898.4	16.2	0.271
23	40.0	964.0	905.6	17.2	0.245
24	45.0	970.4	912.0	18.1	0.224
25	50.0	974.6	916.1	18.9	0.206
26	55.0	975.0	916.6	19.5	0.191
D 27	59.1	975.2	916.8	20.0	0.180
SECOND FLOW					
E 1	0.0	18.2			
2	5.0	17.9	-0.3		
3	10.0	20.6	2.7		
4	15.0	23.9	3.3		
5	20.0	26.1	2.2		
6	25.0	27.5	1.4		
7	30.0	27.9	0.3		
8	35.0	28.5	0.6		
9	40.0	29.3	0.8		
10	45.0	30.1	0.8		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta P}{t + \Delta P}$	$\log \frac{t + \Delta P}{\Delta P}$
SECOND FLOW - CONTINUED					
11	50.0	30.9	0.8		
12	55.0	32.1	1.3		
F 13	60.2	33.1	1.0		
SECOND CLOSED-IN					
F 1	0.0	33.1			
2	1.0	292.9	259.8	1.0	1.976
3	2.0	458.3	425.2	2.0	1.667
4	3.0	573.2	540.1	2.9	1.495
5	4.0	636.0	602.9	3.8	1.375
6	5.0	682.2	649.1	4.8	1.278
7	6.0	711.4	678.3	5.6	1.208
8	7.0	733.3	700.2	6.5	1.142
9	8.0	751.6	718.5	7.4	1.090
10	9.0	766.0	732.9	8.2	1.044
11	10.0	777.9	744.9	9.0	1.004
12	12.0	800.6	767.5	10.6	0.930
13	14.0	818.7	785.6	12.1	0.873
14	16.0	832.9	799.8	13.6	0.822
15	18.0	844.5	811.4	15.0	0.781
16	20.0	855.4	822.3	16.4	0.743
17	22.0	864.3	831.2	17.7	0.709
18	24.0	873.6	840.5	19.0	0.678
19	26.0	881.4	848.3	20.2	0.651
20	28.0	888.1	855.0	21.4	0.627
21	30.0	894.5	861.4	22.5	0.604
22	35.0	904.1	871.0	25.2	0.555
23	40.0	914.5	881.4	27.7	0.513
24	45.0	927.1	894.0	30.1	0.479
25	50.0	938.5	905.4	32.2	0.449
26	55.0	945.0	911.9	34.2	0.422
27	60.0	951.2	918.1	36.1	0.399
28	70.0	962.4	929.3	39.5	0.360
29	80.0	970.3	937.2	42.5	0.329
30	90.0	976.0	942.9	45.1	0.302
31	100.0	980.0	946.9	47.5	0.280
32	110.0	984.3	951.2	49.6	0.261
G 33	120.4	987.1	954.0	51.7	0.243

REMARKS:

TICKET NO : 63548000

CLOCK NO : 3301 HOUR : 12

GAUGE NO : 7352

DEPTH : 4941.6

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	25.3			
2	5.0	35.6	10.4		
3	10.0	38.1	2.5		
4	15.0	45.0	7.0		
5	20.0	50.3	5.3		
6	25.0	55.2	4.9		
C 7	30.3	59.0	3.7		
FIRST CLOSED-IN					
C 1	0.0	59.0			
2	1.0	389.3	330.3	1.0	1.486
3	2.0	561.1	502.1	1.9	1.211
4	3.0	671.0	612.0	2.7	1.050
5	4.0	740.1	681.2	3.5	0.932
6	5.0	778.3	719.4	4.3	0.851
7	6.0	807.9	748.9	5.0	0.783
8	7.0	827.0	768.0	5.7	0.726
9	8.0	841.1	782.2	6.3	0.682
10	9.0	854.8	795.9	7.0	0.639
11	10.0	863.4	804.4	7.5	0.606
12	12.0	879.1	820.1	8.6	0.548
13	14.0	891.1	832.1	9.6	0.501
14	16.0	901.2	842.2	10.5	0.462
15	18.0	909.1	850.2	11.3	0.429
16	20.0	916.6	857.6	12.1	0.401
17	22.0	922.2	863.2	12.7	0.377
18	24.0	929.0	870.1	13.4	0.355
19	26.0	934.3	875.4	14.0	0.336
20	28.0	939.0	880.0	14.6	0.319
21	30.0	944.4	885.5	15.1	0.303
22	35.0	954.5	895.6	16.2	0.271
23	40.0	962.5	903.5	17.2	0.245
24	45.0	969.0	910.1	18.1	0.224
25	50.0	973.5	914.6	18.9	0.206
26	55.0	978.2	919.2	19.5	0.191
D 27	59.1	980.2	921.3	20.0	0.180
SECOND FLOW					
E 1	0.0	27.3			
2	5.0	21.6	-5.7		
3	10.0	21.9	0.3		
4	15.0	25.6	3.7		
5	20.0	27.0	1.4		
6	25.0	28.1	1.1		
7	30.0	29.4	1.4		
8	35.0	30.2	0.8		
9	40.0	30.4	0.2		
10	45.0	30.7	0.3		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
11	50.0	31.9	1.2		
12	55.0	33.2	1.2		
F 13	60.2	34.5	1.4		
SECOND CLOSED-IN					
F 1	0.0	34.5			
2	1.0	338.3	303.8	1.0	1.946
3	2.0	489.6	455.0	2.0	1.665
4	3.0	588.7	554.2	2.9	1.492
5	4.0	652.4	617.8	3.9	1.368
6	5.0	685.9	651.4	4.7	1.284
7	6.0	713.6	679.0	5.6	1.205
8	7.0	736.2	701.7	6.5	1.141
9	8.0	751.6	717.1	7.3	1.091
10	9.0	766.9	732.3	8.2	1.042
11	10.0	779.4	744.9	9.0	1.001
12	12.0	801.5	767.0	10.6	0.932
13	14.0	820.2	785.6	12.1	0.873
14	16.0	834.3	799.8	13.6	0.822
15	18.0	846.4	811.9	15.0	0.781
16	20.0	857.6	823.1	16.4	0.742
17	22.0	867.3	832.7	17.7	0.708
18	24.0	875.4	840.8	19.0	0.678
19	26.0	883.1	848.6	20.2	0.651
20	28.0	889.8	855.3	21.4	0.626
21	30.0	895.6	861.0	22.5	0.604
22	35.0	908.2	873.6	25.2	0.554
23	40.0	918.8	884.2	27.7	0.514
24	45.0	928.1	893.6	30.1	0.479
25	50.0	936.0	901.5	32.2	0.449
26	55.0	943.3	908.8	34.2	0.423
27	60.0	950.5	916.0	36.1	0.399
28	70.0	960.8	926.2	39.5	0.360
29	80.0	967.8	933.2	42.5	0.329
30	90.0	973.5	939.0	45.1	0.302
31	100.0	978.8	944.3	47.5	0.280
32	110.0	982.9	948.3	49.7	0.261
G 33	120.4	984.7	950.2	51.7	0.243

REMARKS :

TICKET NO : 63548000

GAUGE NO : 6773

CLOCK NO : 17529 HOUR : 24

DEPTH : 4979.0

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	47.2			
2	5.0	51.6	4.4		
3	10.0	53.2	1.6		
4	15.0	59.0	5.8		
5	20.0	64.5	5.5		
6	25.0	67.7	3.1		
C 7	30.3	70.9	3.3		
FIRST CLOSED-IN					
C 1	0.0	70.9			
2	1.0	382.0	311.0	1.0	1.478
3	2.0	578.8	507.9	1.9	1.209
4	3.0	690.5	619.6	2.7	1.048
5	4.0	756.4	685.5	3.5	0.937
6	5.0	798.0	727.0	4.3	0.851
7	6.0	823.3	752.3	5.0	0.781
8	7.0	842.0	771.1	5.7	0.728
9	8.0	856.6	785.7	6.3	0.682
10	9.0	866.9	796.0	7.0	0.639
11	10.0	876.5	805.6	7.5	0.605
12	12.0	890.5	819.6	8.6	0.546
13	14.0	902.6	831.7	9.6	0.500
14	16.0	912.1	841.2	10.5	0.463
15	18.0	919.9	848.9	11.3	0.430
16	20.0	927.5	856.6	12.0	0.401
17	22.0	934.4	863.5	12.8	0.376
18	24.0	941.3	870.4	13.4	0.355
19	26.0	947.0	876.1	14.0	0.335
20	28.0	951.8	880.9	14.6	0.318
21	30.0	956.6	885.7	15.1	0.303
22	35.0	965.9	895.0	16.2	0.271
23	40.0	973.7	902.7	17.2	0.245
24	45.0	979.9	909.0	18.1	0.224
25	50.0	984.8	913.9	18.9	0.206
26	55.0	988.9	918.0	19.5	0.191
D 27	59.1	991.5	920.5	20.0	0.180
SECOND FLOW					
E 1	0.0	41.9			
2	5.0	39.9	-2.0		
3	10.0	39.9	0.0		
4	15.0	41.3	1.4		
5	20.0	43.2	1.8		
6	25.0	43.9	0.7		
7	30.0	44.9	1.0		
8	35.0	45.6	0.7		
9	40.0	46.3	0.7		
10	45.0	47.0	0.7		

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
11	50.0	47.7	0.7		
12	55.0	49.1	1.4		
F 13	60.2	49.7	0.6		
SECOND CLOSED-IN					
F 1	0.0	49.7			
2	1.0	319.8	270.1	0.9	1.982
3	2.0	500.3	450.6	1.9	1.672
4	3.0	614.9	565.2	2.9	1.496
5	4.0	676.3	626.6	3.8	1.374
6	5.0	706.8	657.1	4.7	1.283
7	6.0	734.7	685.0	5.6	1.207
8	7.0	754.5	704.8	6.5	1.143
9	8.0	770.4	720.7	7.4	1.089
10	9.0	783.2	733.5	8.2	1.043
11	10.0	795.2	745.5	9.0	1.001
12	12.0	815.7	766.0	10.6	0.931
13	14.0	832.8	783.1	12.1	0.873
14	16.0	846.0	796.3	13.6	0.823
15	18.0	859.0	809.3	15.0	0.781
16	20.0	869.8	820.1	16.4	0.742
17	22.0	879.1	829.4	17.7	0.709
18	24.0	886.4	836.7	19.0	0.679
19	26.0	893.5	843.8	20.2	0.651
20	28.0	900.3	850.6	21.4	0.627
21	30.0	905.6	855.9	22.5	0.604
22	35.0	918.9	869.2	25.3	0.554
23	40.0	930.1	880.4	27.8	0.513
24	45.0	938.7	889.0	30.1	0.479
25	50.0	947.6	897.9	32.2	0.449
26	55.0	954.6	904.9	34.2	0.422
27	60.0	960.4	910.7	36.1	0.399
28	70.0	969.8	920.0	39.5	0.360
29	80.0	978.1	928.4	42.5	0.329
30	90.0	983.9	934.2	45.1	0.302
31	100.0	988.8	939.1	47.5	0.280
32	110.0	992.2	942.5	49.6	0.261
G 33	120.4	994.3	944.6	51.7	0.243

REMARKS :

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4197.9	
3		DRILL COLLARS.....	6.000	2.500	653.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4851.4
3		DRILL COLLARS.....	6.000	2.500	62.0	
5		CROSSOVER.....	6.000	2.500	1.0	
11		HANDLING SUB & CHOKE ASSEMBLY...	4.500	3.500	4.6	
13		DUAL CIP SAMPLER.....	5.000	0.750	6.9	
60		HYDROSPRING TESTER.....	5.000	0.750	5.3	4930.4
15		JAR.....	5.000	1.750	5.0	
80		AP RUNNING CASE.....	5.000	2.250	4.1	4937.5
80		AP RUNNING CASE.....	5.000	2.250	4.1	4941.6
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
70		OPEN HOLE PACKER.....	6.750	1.530	5.8	4951.4
70		OPEN HOLE PACKER.....	6.750	1.530	5.8	4957.2
20		FLUSH JOINT ANCHOR.....	5.000	2.370	18.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.0	4977.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0	4979.0
TOTAL DEPTH					4982.0	

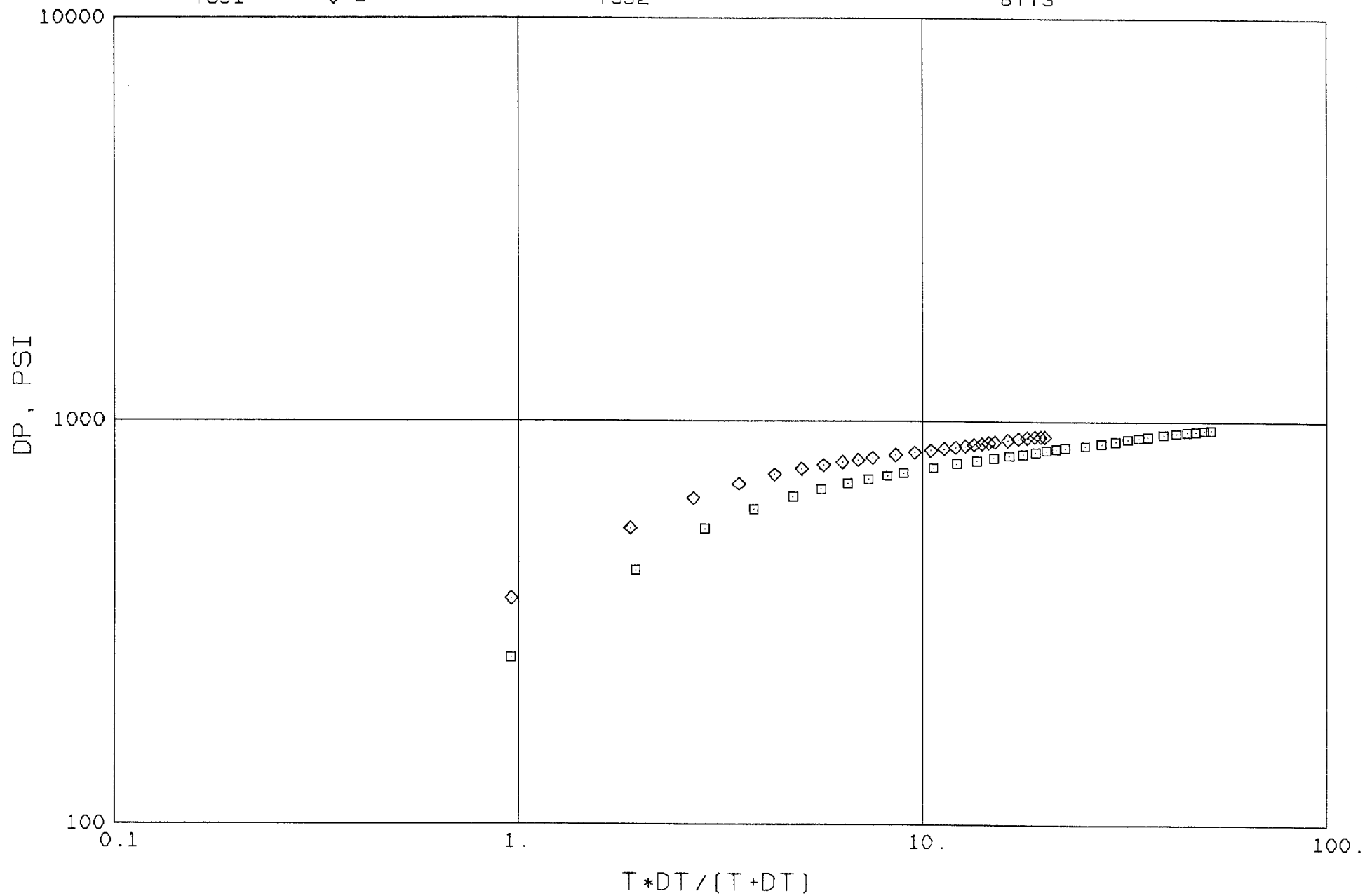
EQUIPMENT DATA

TICKET NO 63548000

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7351 $\diamond$ $\square$

GAUGE NO CIP 1 2
7352

GAUGE NO CIP 1 2
6773

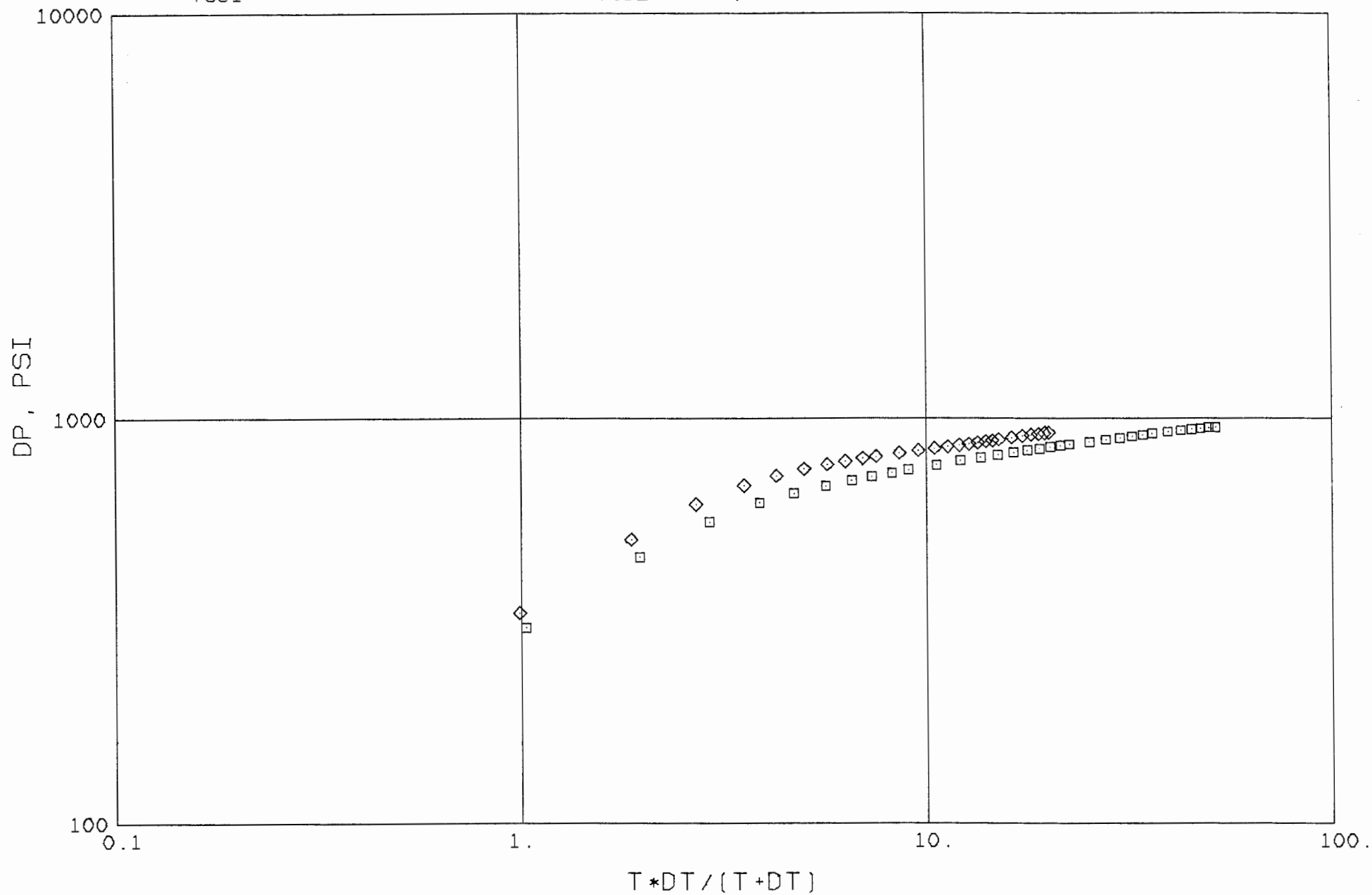


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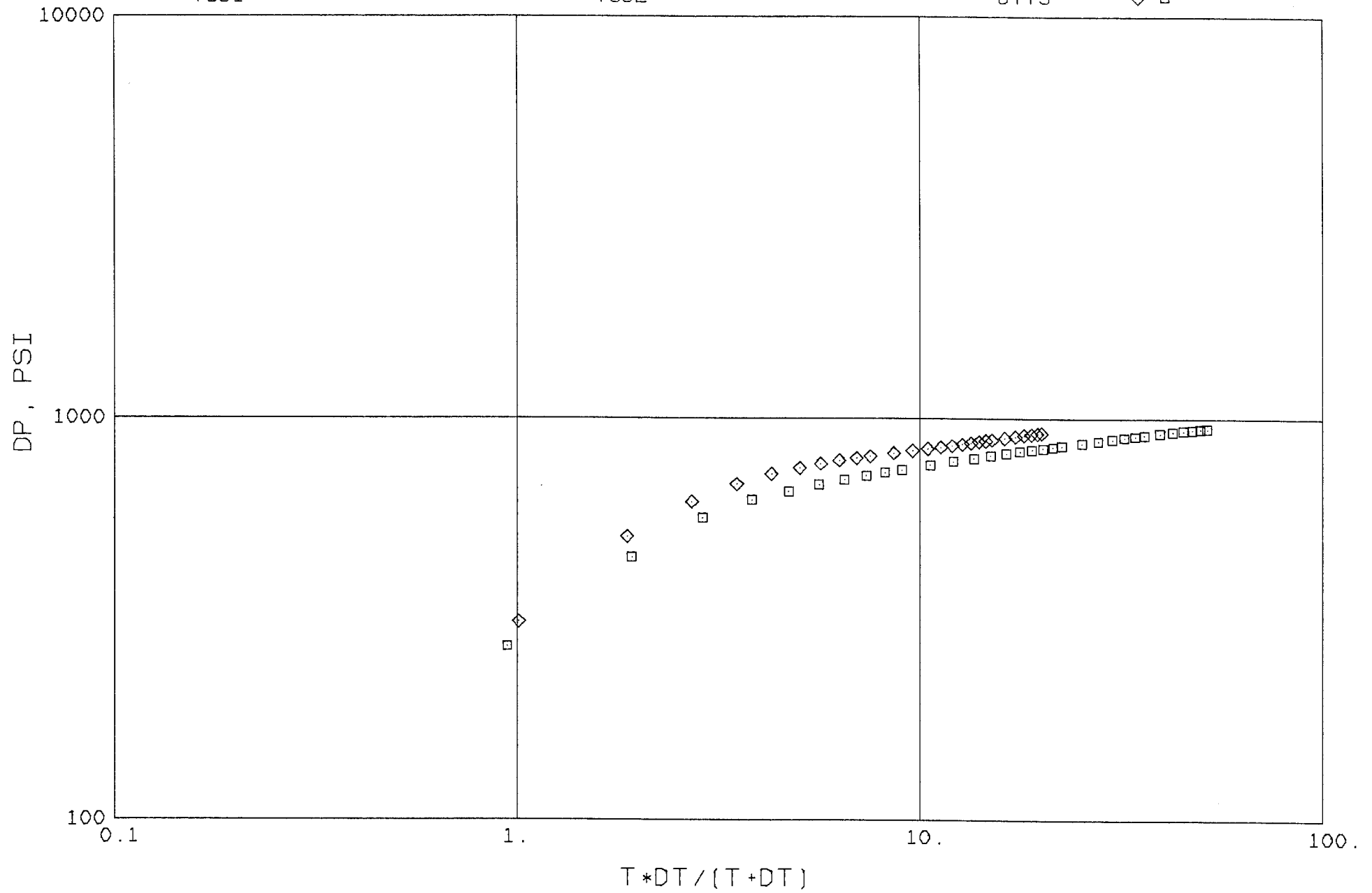


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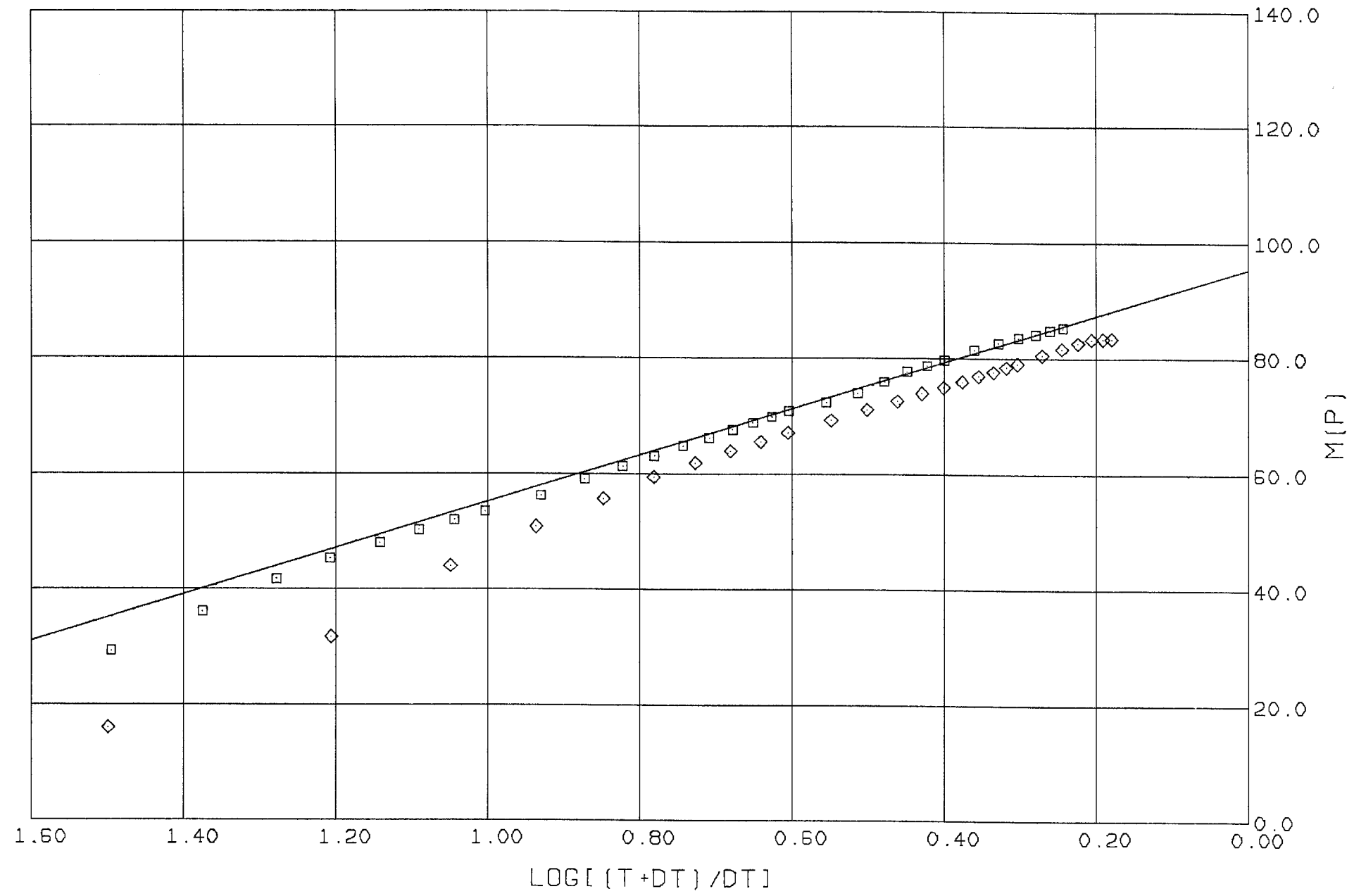


TICKET NO 63548000

GAUGE NO CIP 1 2
7351 ◇ □

GAUGE NO CIP 1 2
7352

GAUGE NO CIP 1 2
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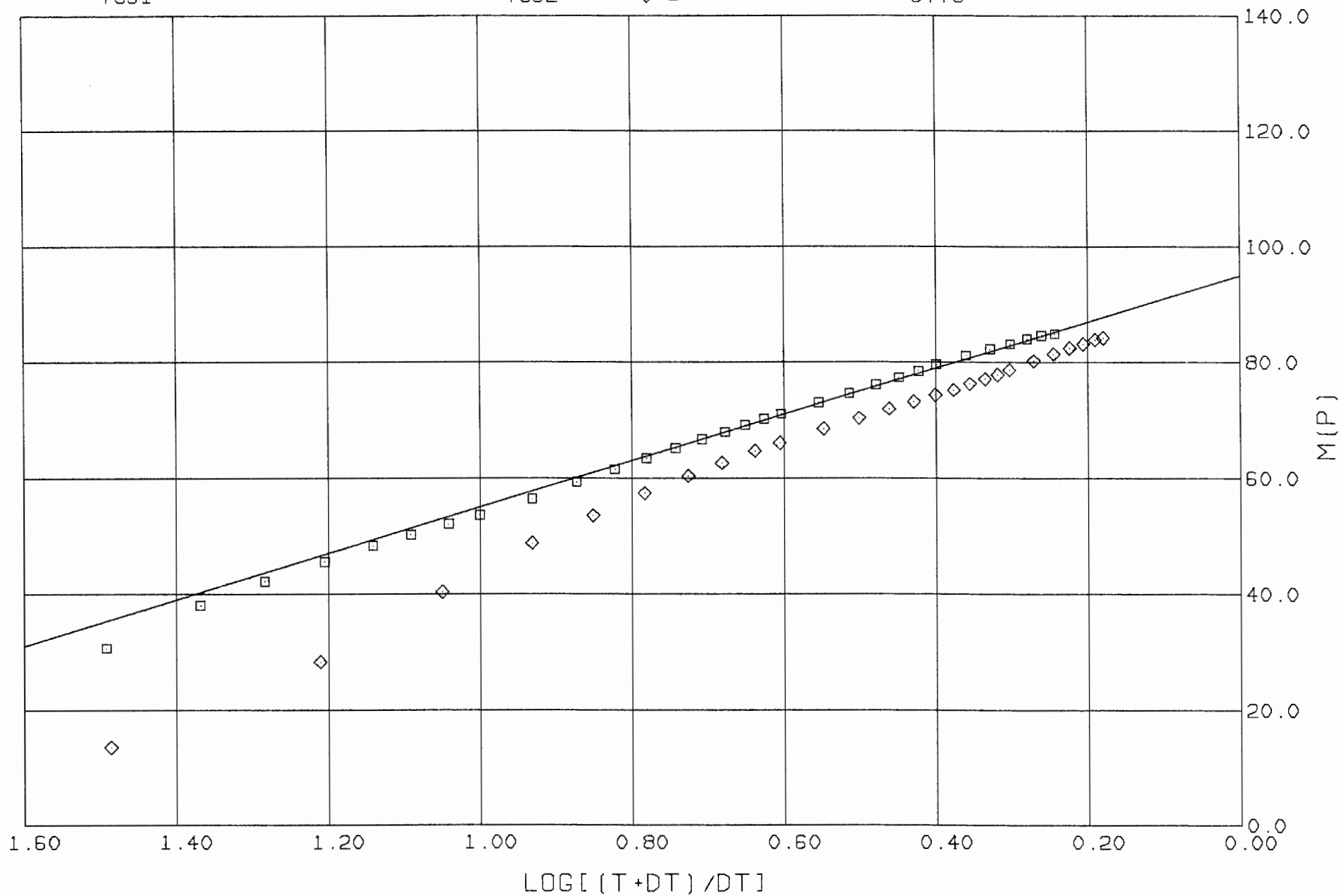


TICKET NO 63548000

GAUGE NO CIP 1 2
7351

GAUGE NO CIP 1 2
7352 $\diamond$ $\square$

GAUGE NO CIP 1 2
6773



SUMMARY OF RESERVOIR PARAMETERS

USING HORNER METHOD FOR GAS WELLS

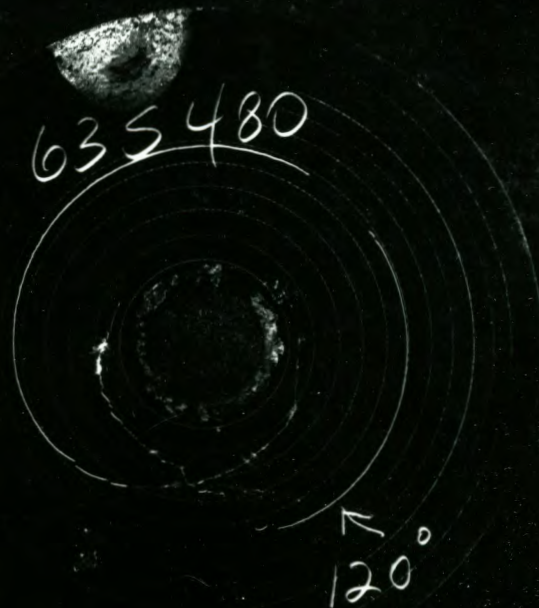
GAS GRAVITY _____ 0.600 _____ TEMPERATURE _____ 120.0 _____ °F
 NET PAY _____ 0.0 ft _____ POROSITY _____ 10.0 _____ %
 RADIUS OF WELL BORE _____ 0.328 ft _____ VISCOSITY _____ 0.013 _____ cp
 GAS DEVIATION FACTOR _____ 0.895 _____ GAS PROPERTIES AT _____ 1042.0 _____ p sig
 SYSTEM COMPRESSIBILITY _____ 847.29 _____ $\times 10^{-6}$ vol/vol/p si

GAUGE NUMBER	7351	7352	6773				
GAUGE DEPTH	4937.5	4941.6	4979.0				
FLOW AND CIP PERIOD	2	2	2				UNITS
FINAL FLOW PRESSURE	33.1	34.5	49.7				p sig
TOTAL FLOW TIME	90.5	90.5	90.5				min
CALC. STATIC PRESSURE P^*	1043.3	1040.8	1044.5				p sig
EXTRAPOLATED PRESSURE $m(P^*)$	95.4	95.0	95.7				$\frac{mmp\ si^2}{cp}$
ONE CYCLE PRESSURE $m(P_{10})$	55.2	55.0	58.3				$\frac{mmp\ si^2}{cp}$
PRODUCTION RATE Q	26.0	26.0	26.0				MCFD
FLOW CAPACITY kh	0.61332	0.61779	0.66123				md-ft
PERMEABILITY k	0.02453	0.02471	0.02645				md
SKIN FACTOR S	0.1	0.1	0.3				
DAMAGE RATIO DR	1.0	1.0	1.1				
INDICATED RATE MAX AOF_1	26.2	26.2	26.2				MCFD
INDICATED RATE MIN AOF_2	26.1	26.1	26.1				MCFD
THEORETICAL RATE $DR \times AOF_1$	27.2	27.3	29.0				MCFD
THEORETICAL RATE $DR \times AOF_2$	27.2	27.2	28.9				MCFD
RADIUS OF INVESTIGATION r_i	5.9	5.9	6.1				ft

REMARKS: CALCULATED RESULTS ARE EFFECTIVE TO GAS PRODUCTION ONLY. RATE FOR THE SECOND FLOW WAS CALCULATED AT 26 MCFD WITH GAS FLOWING ON A 1/4" CHOKE THROUGH AN ORIFICE WELL TESTER AT A SURFACE PRESSURE OF 7.5 PSIG.

NOTICE: 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.

TEMPERATURE RECORDER CHART



10° each circle

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow
Capacity

$$kh = \frac{.001637 Q_g T}{m}$$

md-ft

Average Effective
Permeability

$$kh = \frac{kh}{h}$$

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

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