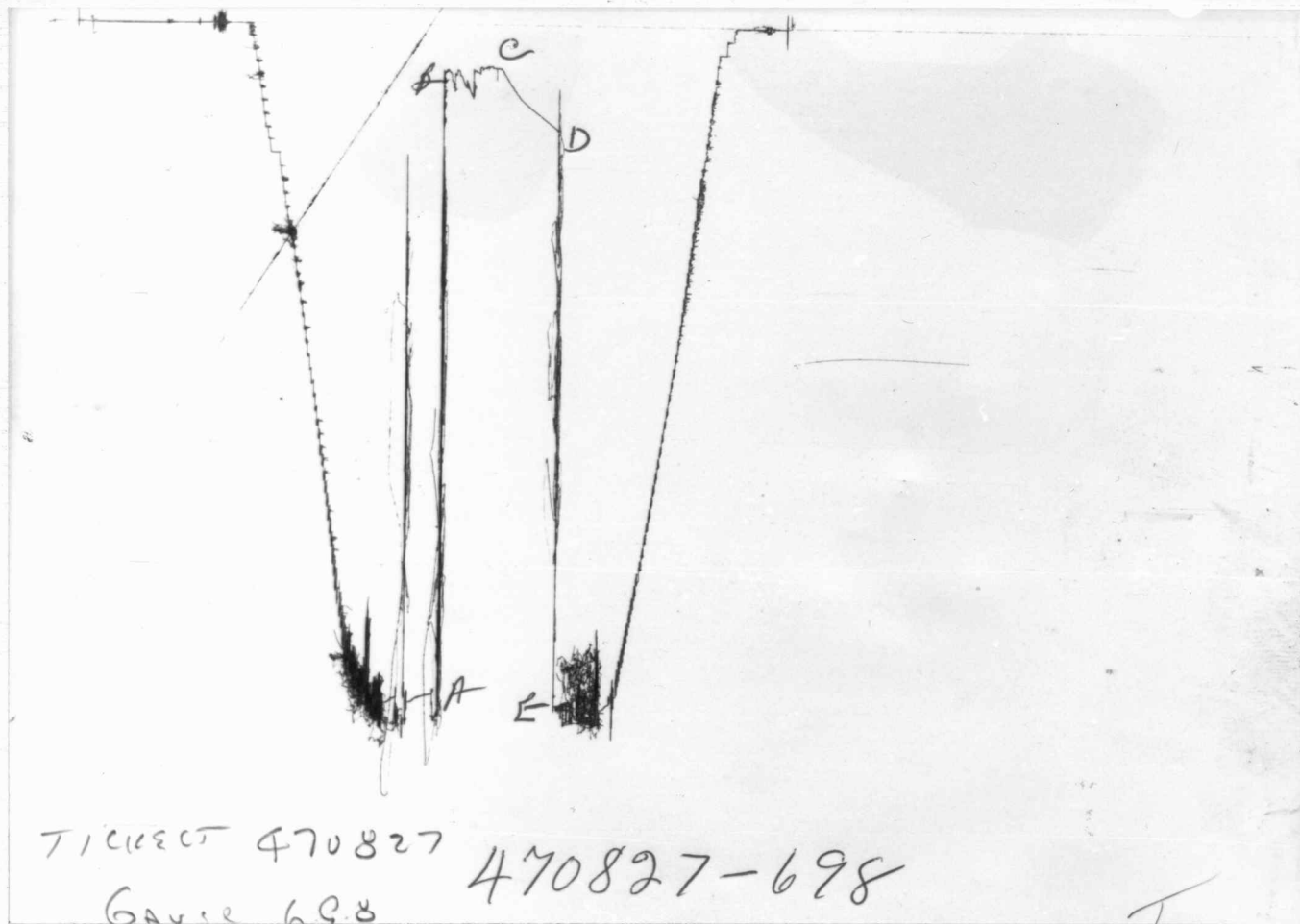




TICKET NO. 47082700
02-FEB-83
PRATT

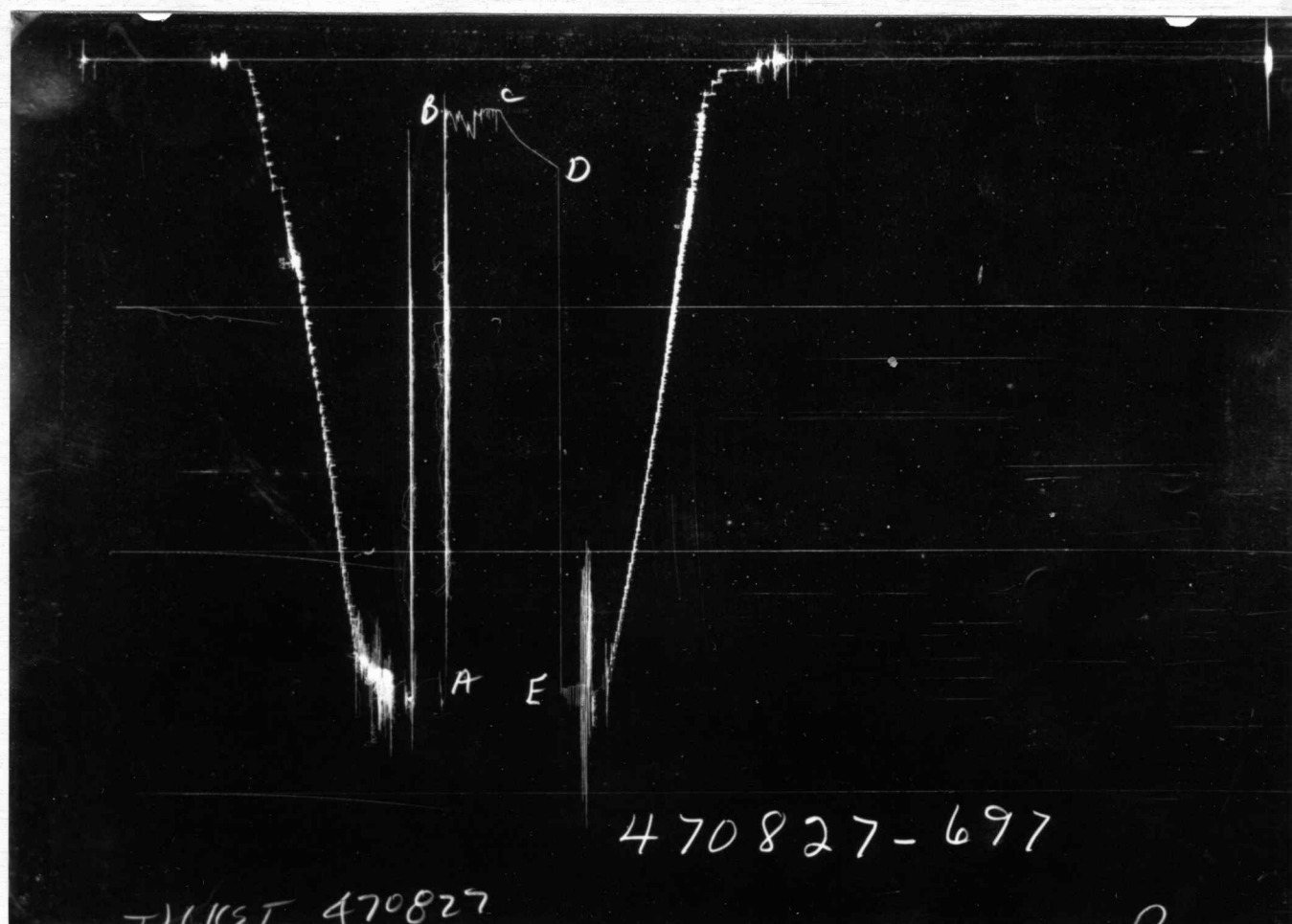
FORMATION TESTING SERVICE REPORT

ALTON UNRUH	"C" #2	1	4883.4 - 4946.4	THE MURICE L. BROWN COMPANY
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RNG.	26-30S-18W	FIELD AREA	COUNTY	STATE
			KIOWA	KANSAS
				DRBC



GAUGE NO: 698 DEPTH: 4862.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2489.5			
B	INITIAL FIRST FLOW		167.1			
C	FINAL FIRST FLOW		162.5	35.0	35.0	F
C	INITIAL FIRST CLOSED-IN		162.5			
D	FINAL FIRST CLOSED-IN		386.9	30.0	34.3	C
E	FINAL HYDROSTATIC		2532.6			



GAUGE NO: 697 DEPTH: 4943.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2503	2523.1			
B	INITIAL FIRST FLOW	179	141.9			
C	FINAL FIRST FLOW	198	213.4	35.0	35.0	F
C	INITIAL FIRST CLOSED-IN	198	213.4			
D	FINAL FIRST CLOSED-IN	428	437.8	30.0	34.3	C
E	FINAL HYDROSTATIC	2503	2567.1			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MARMATON

NET PAY (ft): _____

GROSS TESTED FOOTAGE: 63.0

ALL DEPTHS MEASURED FROM: KB

CASING PERFS. (ft): _____

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 2208

TOTAL DEPTH (ft): 4946.0

PACKER DEPTH(S) (ft): 4877. 4883

FINAL SURFACE CHOKE (in): 0.250

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.80

MUD VISCOSITY (sec): 42

ESTIMATED HOLE TEMP. (°F): 110

ACTUAL HOLE TEMP. (°F): 102 @ 4941.0 ft

TICKET NUMBER: 47082700

DATE: 1-23-83 TEST NO: 1

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: PRATT

TESTER: GRAHAM

WITNESS: MILLER

DRILLING CONTRACTOR: ABERCROMBIE DRILLING COMPANY #6

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
PIT	<u>0.090 @ 75 °F</u>	<u>56430 ppm</u>
TOP SAMPLE	<u>0.060 @ 75 °F</u>	<u>128250 ppm</u>
MIDDLE SAMPLE	<u>0.080 @ 75 °F</u>	<u>58995 ppm</u>
BOTTOM SAMPLE	<u>0.060 @ 75 °F</u>	<u>87210 ppm</u>
	<u>@ °F</u>	<u>ppm</u>
	<u>@ °F</u>	<u>ppm</u>

SAMPLER DATA

Pstg 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:

240' OF MUD WITH NO SHOW

MEASURED FROM
TESTER VALVE

REMARKS:

CHART FROM TEMPERATURE RECORDED WAS NOT SENT IN FOR PROCESSING.
CHARTS INDICATE PARTIAL PLUGGING OF TOOLS DURING THE FLOW PERIODS.

TYPE & SIZE MEASURING DEVICE: _____ MERLA ORIFICE WELL TESTER _____					TICKET NO: 47082700
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
1-23-83					
0430					CALLED OUT
0610					ON LOCATION. RIG MIXING MUD &
					CIRCULATING. COULD ONLY GET A
					VISCOSITY OF 42. (NEEDED A
					VISCOSITY OF 52.) RIG SPOTTED
					HEAVY MUD ON BOTTOM AND WAS
					TOLD TO COME OUT FOR TEST.
0825					STARTED OUT OF HOLE.
1025					STARTED CLOCKS
1120					PICKED UP TOOL
1155					TOOL MADE UP AND IN TABLE
1205					TOOL THROUGH TABLE. HIT A
					BRIDGE OF FILL. TOOL STARTED
					TAKING WEIGHT 5 STANDS OFF
					BOTTOM AT ABOUT 460'. DRILLER
					HAD TO WORK EACH STAND IN HOLE
					CAREFULLY.
1340					TOOL ON BOTTOM. TOOL OPENED
					AND SLID 10'. PICKED UP TOOL
					TO SHUT IN AND OPENED FLOOR
					VALVE TO RELEASE PRESSURE.
					LOST MUD AND HAD DRILLER PICK
					UP ANOTHER JOINT OF PIPE. TOOL
					TOOK WEIGHT AS BEFORE, 10' UP.
1405					TOOL OPENED. SLID ANOTHER 10'.
					LOST MUD. HAD DRILLER FILL
					HOLE. MUD HELD. HAD A FAIR
					BLOW, 4" IN BUCKET, BUILDING TO
					6" IN BUCKET.
1440					CLOSED TOOL, NO TORQUE
1510					TOOL OFF BOTTOM. JARRED
					100,000# OVER STRING WEIGHT 4
					TIMES.
					TEST WAS CALLED OFF BECAUSE OF
					TOOL SLIDING AND CONDITION OF
					HOLE.

TICKET NO: 47082700
CLOCK NO: 25710 HOUR: 12



GAUGE NO: 698
DEPTH: 4862.0

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	167.1			
C 2	35.0	162.5	-4.7		
FIRST CLOSED-IN					
C 1	0.0	162.5			
2	2.0	184.7	22.3	1.9	1.260
3	4.0	206.8	44.3	3.6	0.987
4	6.0	226.4	63.9	5.1	0.837
5	8.0	245.2	82.8	6.5	0.729
6	10.0	260.5	98.1	7.8	0.654
7	12.0	277.4	114.9	8.9	0.592
8	14.0	288.8	126.4	10.0	0.544
9	16.0	299.9	137.5	11.0	0.503
10	18.0	309.8	147.3	11.9	0.469
11	20.0	318.8	156.3	12.7	0.439
12	22.0	327.0	164.6	13.5	0.414
13	24.0	337.8	175.4	14.2	0.390
14	26.0	347.6	185.2	14.9	0.371
15	28.0	355.6	193.1	15.5	0.352
16	30.0	366.8	204.3	16.1	0.336
D 17	34.3	386.9	224.5	17.3	0.306

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

REMARKS:

TICKET NO: 47082700

CLOCK NO: 17485 - HOUR: 12



GAUGE NO: 697

DEPTH: 4943.0

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	141.9			
C 2	35.0	213.4	71.5		
FIRST CLOSED-IN					
C 1	0.0	213.4			
2	2.0	245.6	32.2	1.9	1.262
3	4.0	268.5	55.1	3.6	0.987
4	6.0	285.1	71.6	5.1	0.835
5	8.0	303.4	89.9	6.5	0.731
6	10.0	320.8	107.4	7.8	0.652
7	12.0	332.9	119.4	9.0	0.592
8	14.0	345.2	131.8	10.0	0.544
9	16.0	354.6	141.1	11.0	0.504
10	18.0	364.7	151.3	11.9	0.470
11	20.0	373.8	160.4	12.7	0.439
12	22.0	383.4	169.9	13.5	0.413
13	24.0	391.0	177.6	14.2	0.390
14	26.0	399.6	186.2	14.9	0.370
15	28.0	408.5	195.0	15.5	0.352
16	30.0	416.0	202.6	16.2	0.336
D 17	34.3	437.8	224.4	17.3	0.306

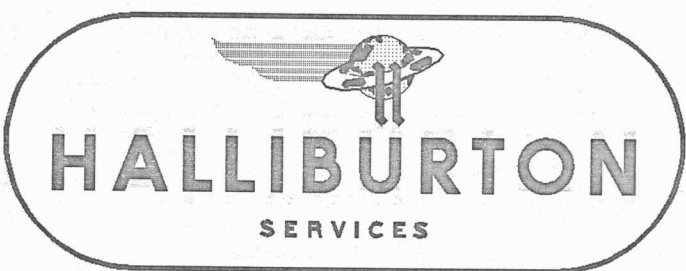
REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4662.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4663.0
4		FLEX WEIGHT.....	4.500	2.764	186.0	
5		CROSSOVER.....	6.000	2.250	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	6.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	4860.0
80		AP RUNNING CASE.....	5.000	3.060	4.0	4862.0
15		JAR.....	5.000	1.500	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	4877.0
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	4883.0
20		FLUSH JOINT ANCHOR.....	5.000	2.360	9.0	
5		CROSSOVER.....	6.000	2.250	1.0	
4		FLEX WEIGHT.....	4.500	2.764	29.0	
5		CROSSOVER.....	6.000	2.250	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.360	16.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.0	4941.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0	4943.0
TOTAL DEPTH						4946.0

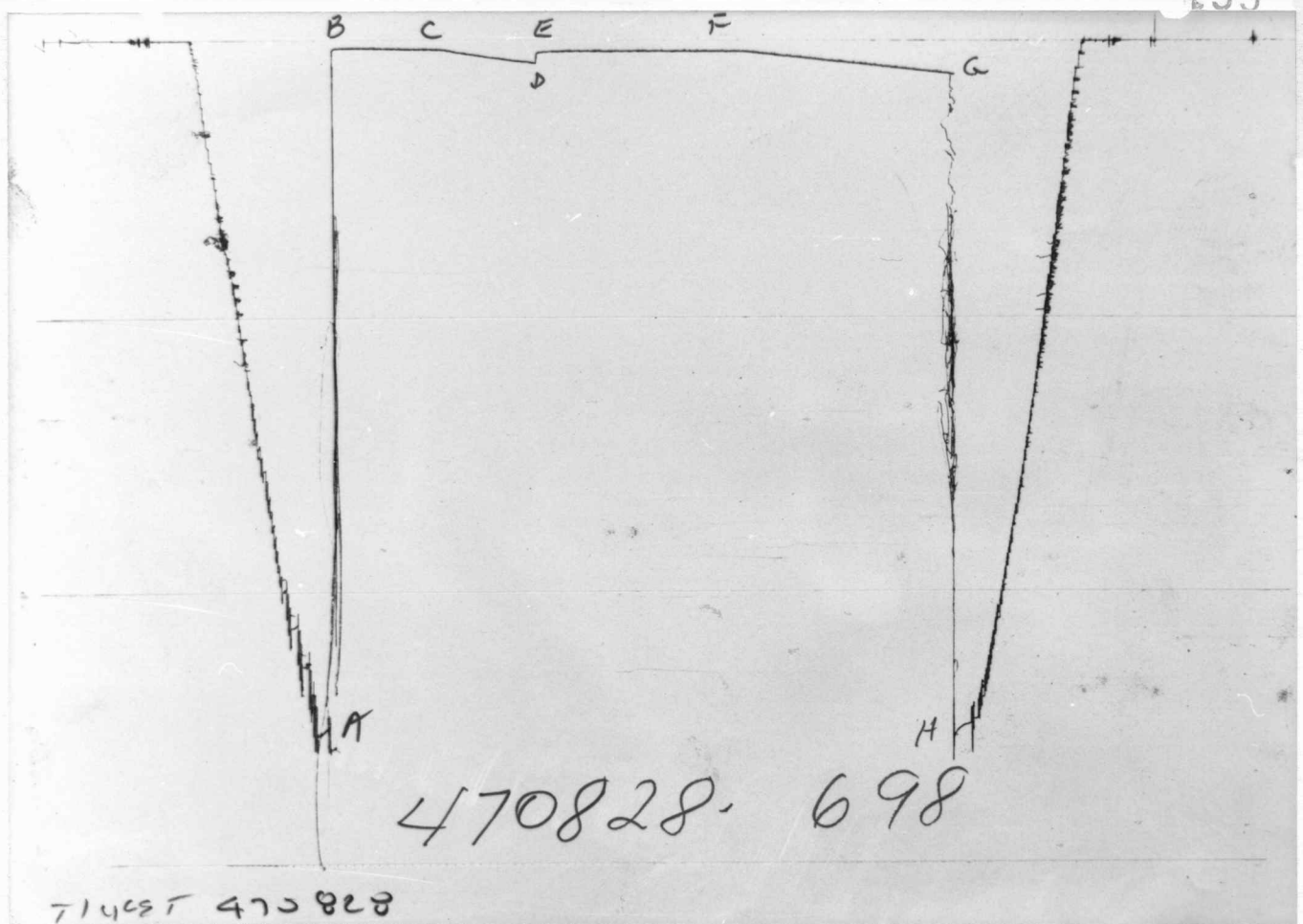
EQUIPMENT DATA

ALTON UNRUH		"C" #2	2	4885.1 - 4946.1	THE MAURICE L. BROWN COMPANY	
LEASE NAME		WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME	
LEGAL LOCATION	26-30S-18W	FIELD AREA	COUNTY	KIOWA	STATE	KANSAS
SEC. - TWP. - RNG.						SMBC



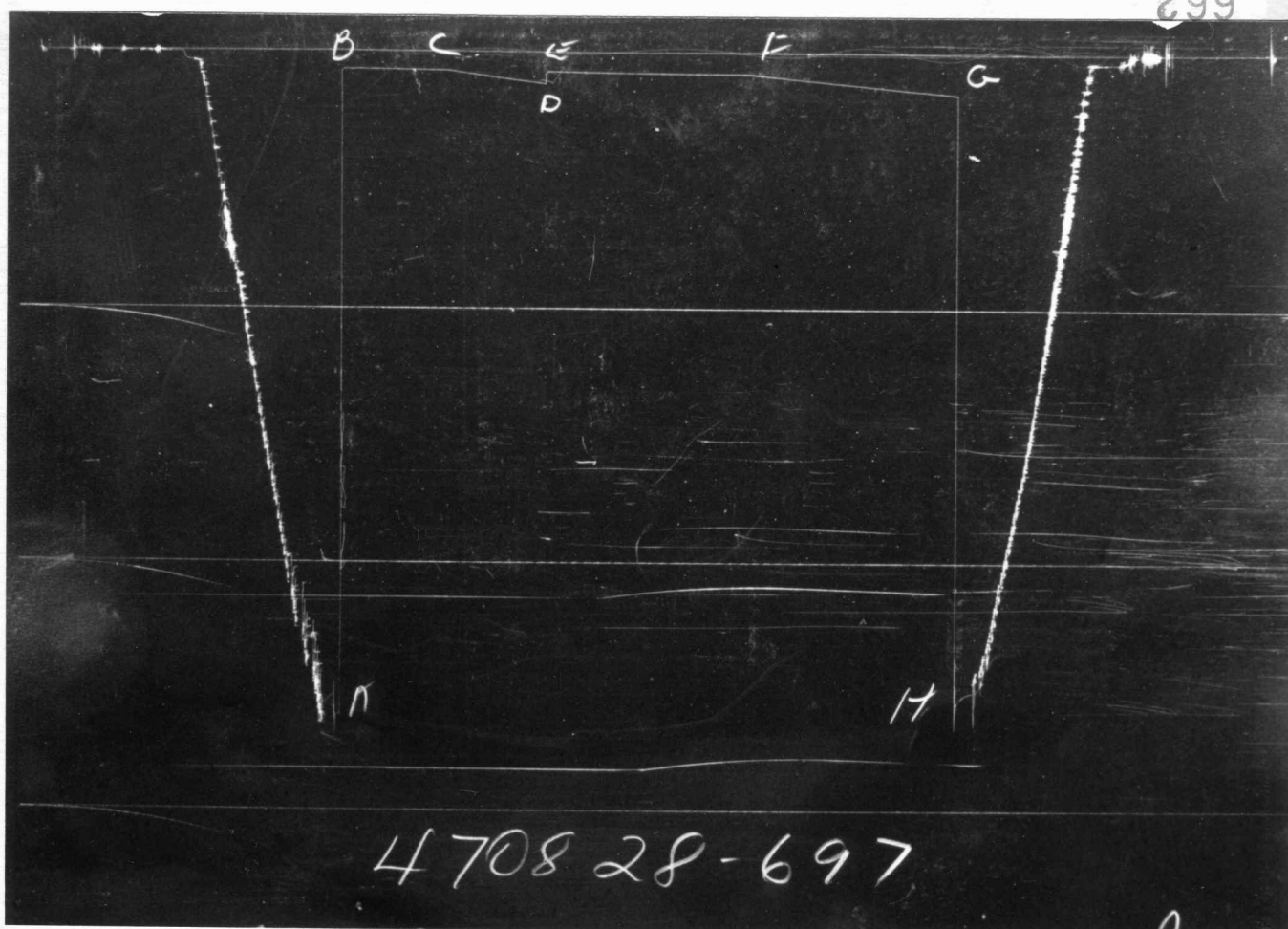
TICKET NO. 47082800
02-FEB-83
PRATT

FORMATION TESTING SERVICE REPORT



GAUGE NO: 698 DEPTH: 4860.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2520.3			
B	INITIAL FIRST FLOW		37.5			
C	FINAL FIRST FLOW		35.5	60.0	60.0	F
C	INITIAL FIRST CLOSED-IN		35.5			
D	FINAL FIRST CLOSED-IN		83.6	60.0	60.0	C
E	INITIAL SECOND FLOW		49.8			
F	FINAL SECOND FLOW		42.0	120.0	120.0	F
F	INITIAL SECOND CLOSED-IN		42.0			
G	FINAL SECOND CLOSED-IN		120.8	120.0	120.0	C
H	FINAL HYDROSTATIC		2502.2			



GAUGE NO: 697 DEPTH: 4943.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2533	2548.2			
B	INITIAL FIRST FLOW	49	76.5	60.0	60.0	F
C	FINAL FIRST FLOW	59	74.0			
C	INITIAL FIRST CLOSED-IN	59	74.0	60.0	60.0	C
D	FINAL FIRST CLOSED-IN	109	124.9			
E	INITIAL SECOND FLOW	59	81.7	120.0	120.0	F
F	FINAL SECOND FLOW	79	83.5			
F	INITIAL SECOND CLOSED-IN	79	83.5	120.0	120.0	C
G	FINAL SECOND CLOSED-IN	149	160.4			
H	FINAL HYDROSTATIC	2492	2534.2			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MARMATON

NET PAY (ft): _____

GROSS TESTED FOOTAGE: 61.0

ALL DEPTHS MEASURED FROM: KB

CASING PERFS. (ft): _____

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 2208

TOTAL DEPTH (ft): 4946.0

PACKER DEPTH(S) (ft): 4875, 4885

FINAL SURFACE CHOKE (in): 0.250

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.70

MUD VISCOSITY (sec): 51

ESTIMATED HOLE TEMP. (°F): 110

ACTUAL HOLE TEMP. (°F): 114 @ 4941.0 ft

TICKET NUMBER: 47082800

DATE: 1-24-83 TEST NO: 2

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: PRATT

TESTER: GRAHAM

WITNESS: MILLER

DRILLING CONTRACTOR: ABERCROMBIE DRILLING COMPANY #6

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
PIT	<u>0.070 @ 75 °F</u>	<u>71820 ppm</u>
BOTTOM SAMPLE	<u>0.060 @ 75 °F</u>	<u>79515 ppm</u>
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm

SAMPLER DATA

Pstg 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:

290' OF GAS IN PIPE

45' OF SLIGHTLY GAS CUT MUD AND A VERY SLIGHT TRACE OF OIL

MEASURED FROM
TESTER VALVE

REMARKS:

GRIND-OUT OF BOTTOM SAMPLE WAS 4% GAS 1% OIL AND 95% MUD.

[illegible]

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4660.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4661.0
4		FLEX WEIGHT.....	4.500	2.764	186.0	
5		CROSSOVER.....	6.000	2.250	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	6.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	4858.0
80		AP RUNNING CASE.....	5.000	3.060	4.0	4860.0
15		JAR.....	5.000	1.500	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	4875.0
22		BLANK ANCHOR.....	5.000	3.060	4.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	4885.0
20		FLUSH JOINT ANCHOR.....	5.000	2.360	9.0	
5		CROSSOVER.....	6.000	2.250	1.0	
4		FLEX WEIGHT.....	4.500	2.764	30.0	
5		CROSSOVER.....	6.000	2.250	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.360	13.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.0	4941.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0	4943.0
TOTAL DEPTH					4946.0	

EQUIPMENT DATA

TEMPERATURE

RECORDER

CHART

10° each circle



Indicated Flow
Capacity

$$kh = \frac{1637 Q_g T}{m}$$

md-ft

Average Effective
Permeability

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

md

Skin Factor

$$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{kt}{\phi \mu c_t r_w^2} + 3.23 \right] \text{ ---}$$

Damage Ratio

$$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 mS} \text{ ---}$$

Indicated Flow
Rate (Maximum)

$$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$$

MCFD

Indicated Flow
Rate (Minimum)

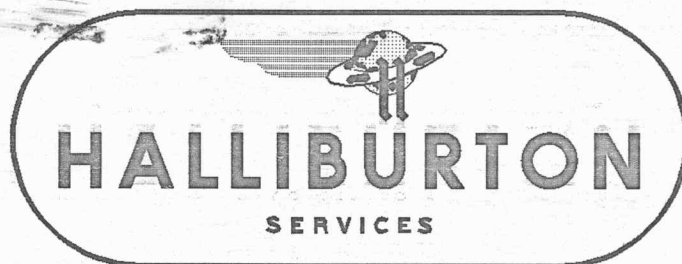
$$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$$

MCFD

Approx. Radius of
Investigation

$$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_t}}$$

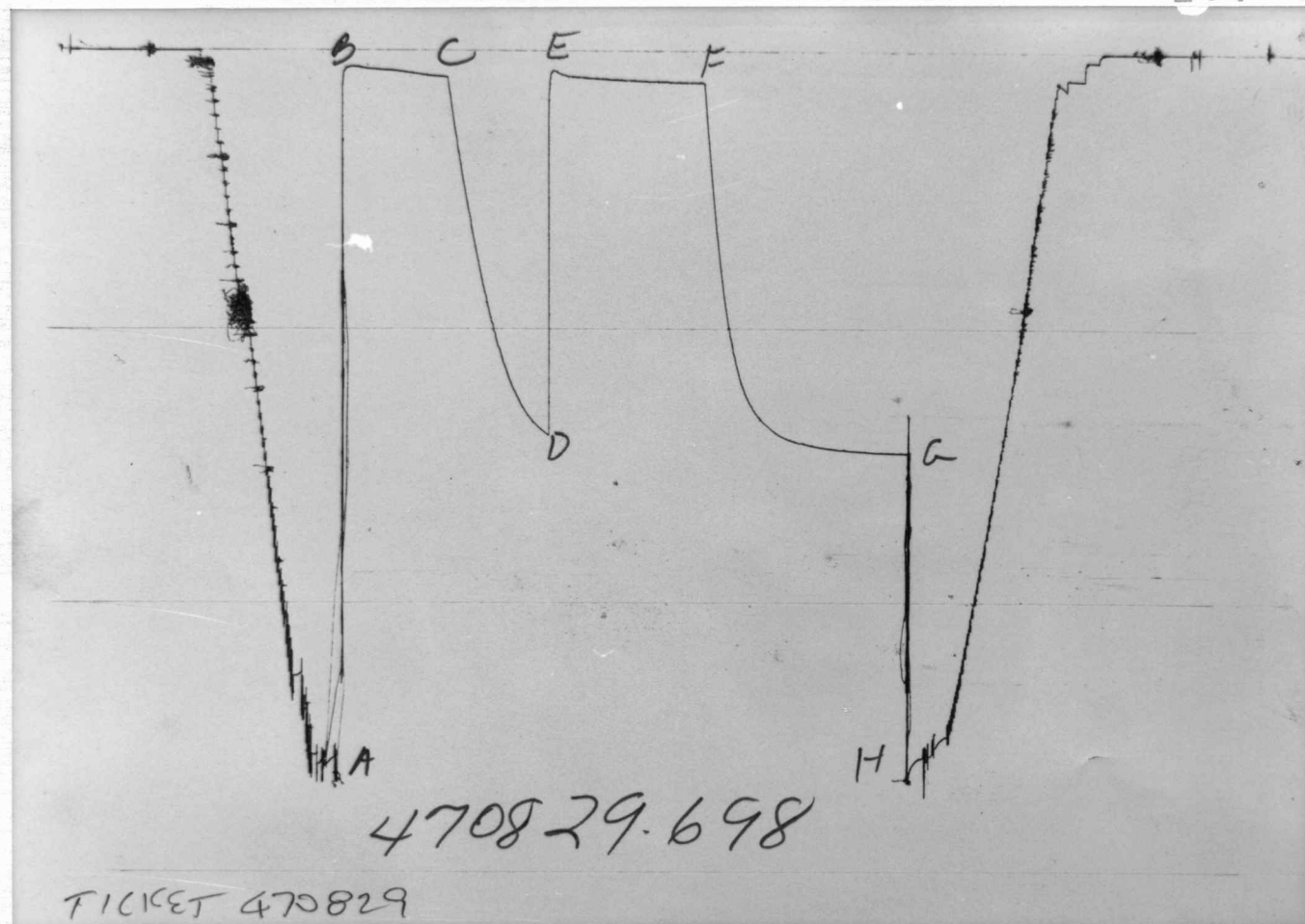
ft



TICKET NO. 47082900
02-FEB-83
PRATT

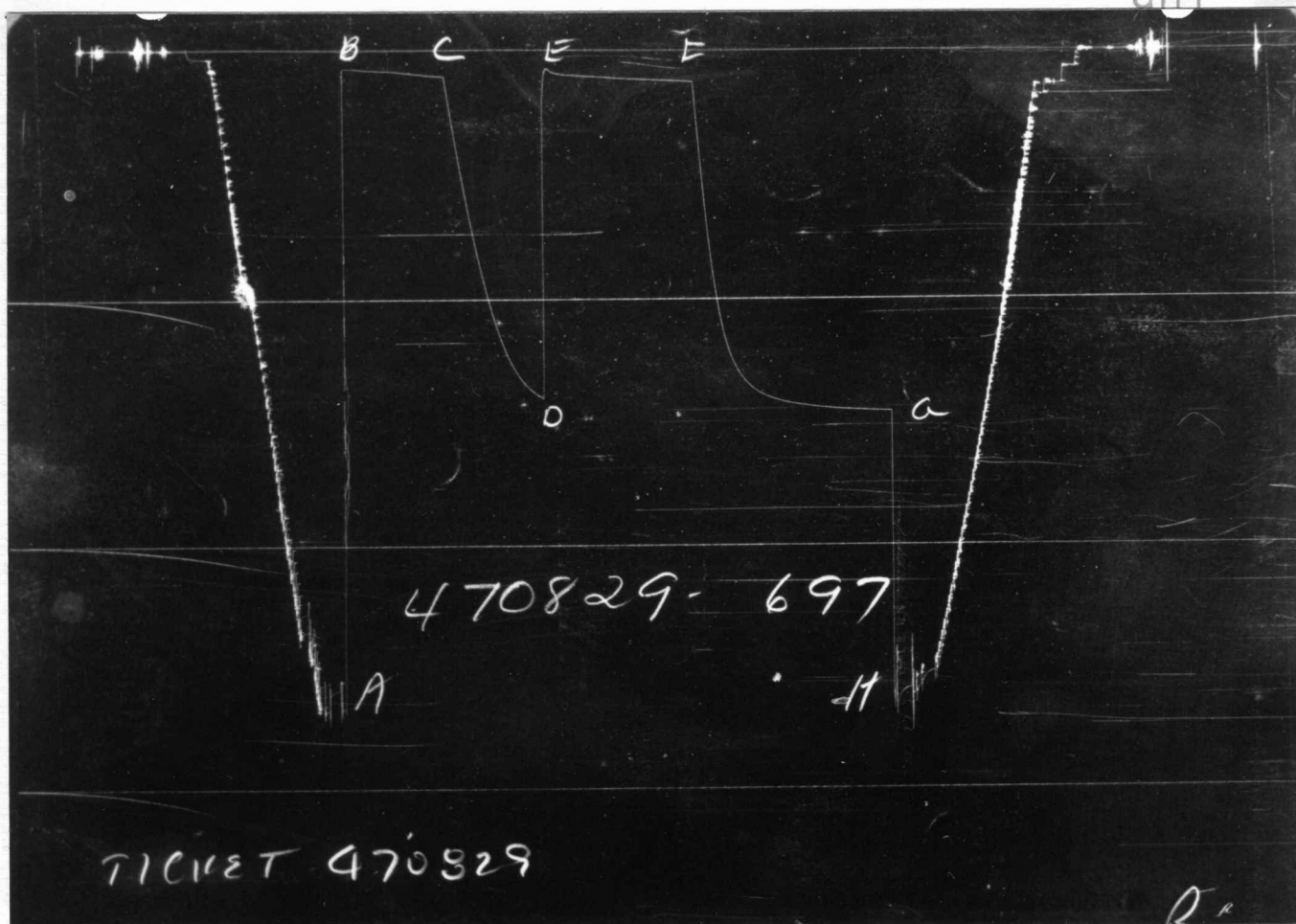
FORMATION TESTING SERVICE REPORT

ALTON UNRUH	"C" #2	3	5039.1 - 5079.1	THE MAURICE L. BROWN COMPANY
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RANG.	26-30S-18W	FIELD AREA	COUNTY	KIOWA
			STATE	KANSAS
				SMBC



GAUGE NO: 698 DEPTH: 5004.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2586.9			
B	INITIAL FIRST FLOW		76.2			
C	FINAL FIRST FLOW		95.3	60.0	61.2	F
C	INITIAL FIRST CLOSED-IN		95.3			
D	FINAL FIRST CLOSED-IN		1392.2	60.0	59.0	C
E	INITIAL SECOND FLOW		101.5			
F	FINAL SECOND FLOW		116.6	90.0	91.2	F
F	INITIAL SECOND CLOSED-IN		116.6			
G	FINAL SECOND CLOSED-IN		1459.1	120.0	118.6	C
H	FINAL HYDROSTATIC		2585.6			



GAUGE NO: 697 DEPTH: 5076.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2605	2607.6			
B	INITIAL FIRST FLOW	59	78.0	60.0	61.2	F
C	FINAL FIRST FLOW	99	104.8			
C	INITIAL FIRST CLOSED-IN	99	104.8	60.0	59.0	C
D	FINAL FIRST CLOSED-IN	1398	1410.7			
E	INITIAL SECOND FLOW	69	186.0	90.0	91.2	F
F	FINAL SECOND FLOW	119	127.5			
F	INITIAL SECOND CLOSED-IN	119	127.5	120.0	118.6	C
G	FINAL SECOND CLOSED-IN	1459	1463.2			
H	FINAL HYDROSTATIC	2574	2601.7			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MISSISSIPPI

NET PAY (ft): _____

GROSS TESTED FOOTAGE: 40.0

ALL DEPTHS MEASURED FROM: KB

CASING PERFS. (ft): _____

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 2208

TOTAL DEPTH (ft): 5079.0

PACKER DEPTH(S) (ft): 5019, 5039

FINAL SURFACE CHOKE (in): 0.250

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.80

MUD VISCOSITY (sec): 54

ESTIMATED HOLE TEMP. (°F): 118

ACTUAL HOLE TEMP. (°F): 122 @ 5074.0 ft

TICKET NUMBER: 47082900

DATE: 1-25-83 TEST NO: 3

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: PRATT

TESTER: GRAHAM

WITNESS: MILLER

DRILLING CONTRACTOR: ABERCROMBIE #6

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
<u>PIT</u>	<u>0.080 @ 75 °F</u>	<u>66690 ppm</u>
<u>TOP SAMPLE</u>	<u>0.080 @ 75 °F</u>	<u>69255 ppm</u>
<u>MIDDLE SAMPLE</u>	<u>0.070 @ 75 °F</u>	<u>71820 ppm</u>
<u>BOTTOM SAMPLE</u>	<u>0.080 @ 75 °F</u>	<u>58995 ppm</u>
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm

SAMPLER DATA

Pstg 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:

93' OF VERY SLIGHTLY OIL AND GAS CUT MUD

93' OF SLIGHTLY OIL AND GAS CUT MUD

93' OF HEAVILY OIL CUT, GASSY MUD

4711' OF GAS IN PIPE

MEASURED FROM
TESTER VALVE

REMARKS:

	% GAS	% OIL	% WATER	% FILTRATE	% MUD
GRIND-OUT					
TOP SAMPLE	21	3	4	6	66
MIDDLE SAMPLE	25	14	3	15	43
BOTTOM SAMPLE	18	30	10	8	34

TYPE & SIZE MEASURING DEVICE: _____ MERLA ORIFICE WELL TESTER					TICKET NO: 47082900
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
1-25-83					
1315					TOOL OPENED WITH A FAIR BLOW,
					OFF BOTTOM OF BUCKET, 12" IN
					30 SECONDS. OPENED 2" FLOOR
					VALVE.
1320					BLOW DIED DOWN TO 1" IN BUCKET
1341	1/8"	0	0		GAS TO SURFACE IN 26 MINUTES
1346	"	3	4.84		
1351	"	4	5.64		
1356	"	5	6.39		
1401	"	7	7.70		
1406	"	9	8.89		
1411	"	10	9.45		
1415	"	11	10.0		CLOSED TOOL, CAUGHT GAS SAMPLE
1515	"	18	13.5		OPENED TOOL
1520	"	22	15.5		
1525	"	24	16.5		
1530	"	25	16.9		
1535	"	26	17.3		
1540	"	26	17.3		
1545	"	27	17.8		
1550	"	28	18.2		
1555	"	29	18.6		
1600	"	29	18.6		
1605	"	30	19		
1610	"	30	19		
1615	"	30	19		
1620	"	31	19.4		
1625	"	31	19.4		
1630	"	31	19.4		
1635	"	32	19.9		
1640	"	32	19.9		
1645	"	33	20.2		CLOSED TOOL. BLOW DIED AFTER
					20 MINUTES.
1845					BY-PASS OPEN.

CLOCK NO: 25710 HOUR: 12



GAUGE NO: 698

DEPTH: 5004.0

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	76.2		
	2	10.0	61.2	-15.0	
	3	20.0	68.9	7.7	
	4	30.0	73.1	4.2	
	5	40.0	81.0	8.0	
	6	50.0	90.1	9.1	
C	7	61.2	95.3	5.2	
FIRST CLOSED-IN					
C	1	0.0	95.3		
	2	5.0	300.2	204.9	4.6 1.122
	3	10.0	492.9	397.6	8.6 0.852
	4	15.0	667.2	571.9	12.0 0.706
	5	20.0	821.5	726.2	15.1 0.609
	6	25.0	958.1	862.7	17.8 0.537
	7	30.0	1074.1	978.8	20.1 0.483
	8	35.0	1170.0	1074.7	22.3 0.439
	9	40.0	1244.7	1149.4	24.2 0.403
	10	45.0	1304.2	1208.9	25.9 0.373
	11	50.0	1346.1	1250.7	27.5 0.347
	12	55.0	1374.7	1279.4	29.0 0.325
D	13	59.0	1392.2	1296.9	30.0 0.309
SECOND FLOW					
E	1	0.0	101.5		
	2	15.0	95.6	-5.9	
	3	30.0	101.4	5.8	
	4	45.0	108.0	6.6	
	5	60.0	111.7	3.8	
	6	75.0	115.0	3.3	
F	7	91.2	116.6	1.6	
SECOND CLOSED-IN					
F	1	0.0	116.6		
	2	10.0	808.8	692.2	9.4 1.211
	3	20.0	1165.8	1049.2	17.7 0.936
	4	30.0	1312.9	1196.3	25.1 0.784
	5	40.0	1375.1	1258.6	31.7 0.682
	6	50.0	1409.7	1293.1	37.6 0.607
	7	60.0	1426.3	1309.8	43.0 0.549
	8	70.0	1438.2	1321.6	47.9 0.502
	9	80.0	1446.0	1329.4	52.5 0.463
	10	90.0	1451.3	1334.7	56.6 0.430
	11	100.0	1455.5	1338.9	60.4 0.402
	12	110.0	1457.6	1341.0	63.9 0.378
G	13	118.6	1459.1	1342.6	66.7 0.359

[illegible]

REMARKS:

TICKET NO: 47082900

CLOCK NO: 17485 HOUR: 12



GAUGE NO: 697

DEPTH: 5076.0

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	78.0			
	2	10.0	77.1	-0.9		
	3	20.0	82.5	5.4		
	4	30.0	85.4	2.9		
	5	40.0	92.5	7.2		
	6	50.0	100.2	7.7		
C	7	61.2	104.8	4.6		
FIRST CLOSED-IN						
C	1	0.0	104.8			
	2	5.0	308.0	203.2	4.6	1.124
	3	10.0	503.8	399.0	8.6	0.851
	4	15.0	683.9	579.1	12.1	0.706
	5	20.0	841.7	736.9	15.1	0.608
	6	25.0	979.6	874.8	17.7	0.538
	7	30.0	1102.6	997.8	20.1	0.482
	8	35.0	1197.0	1092.2	22.3	0.439
	9	40.0	1271.1	1166.4	24.2	0.403
	10	45.0	1327.4	1222.6	25.9	0.373
	11	50.0	1366.5	1261.8	27.5	0.347
	12	55.0	1395.0	1290.2	29.0	0.325
D	13	59.0	1410.7	1305.9	30.0	0.309
SECOND FLOW						
E	1	0.0	186.0			
	2	15.0	100.4	-85.6		
	3	30.0	106.4	6.0		
	4	45.0	113.0	6.7		
	5	60.0	118.7	5.7		
	6	75.0	122.3	3.6		
F	7	91.2	127.5	5.2		
SECOND CLOSED-IN						
F	1	0.0	127.5			
	2	10.0	829.6	702.1	9.4	1.209
	3	20.0	1198.7	1071.2	17.7	0.935
	4	30.0	1335.5	1208.0	25.1	0.783
	5	40.0	1390.2	1262.7	31.7	0.682
	6	50.0	1416.9	1289.4	37.7	0.607
	7	60.0	1433.1	1305.6	43.1	0.549
	8	70.0	1443.2	1315.7	47.9	0.502
	9	80.0	1450.1	1322.6	52.4	0.463
	10	90.0	1455.0	1327.5	56.6	0.430
	11	100.0	1458.6	1331.1	60.4	0.402
	12	110.0	1461.2	1333.7	63.9	0.378
	G	13	118.6	1463.2	1335.7	66.7

[illegible]

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4804.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4805.0
4		FLEX WEIGHT.....	4.500	2.764	186.0	
5		CROSSOVER.....	6.000	2.250	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	6.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	5002.0
80		AP RUNNING CASE.....	5.000	3.060	4.0	5004.0
15		JAR.....	5.000	1.500	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	5019.0
22		BLANK ANCHOR.....	5.000	2.360	13.0	
5		CROSSOVER.....	6.000	2.000	1.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	5039.0
20		FLUSH JOINT ANCHOR.....	5.000	2.360	33.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.0	5074.0
81		BLANKED-OFF RUNNING CASE.....	5.000		4.0	5076.0
TOTAL DEPTH						5079.0

EQUIPMENT DATA

TEMPERATURE RECORDER CHART

10° each circle



Indicated Flow
Capacity

$$kh = \frac{1637 Q_g T}{m}$$

md-ft

Average Effective
Permeability

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

md

Skin Factor

$$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{kt}{\phi \mu c_f r_w^2} + 3.23 \right] \text{ ---}$$

Damage Ratio

$$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 \text{ mS}} \text{ ---}$$

Indicated Flow
Rate (Maximum)

$$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$$

MCFD

Indicated Flow
Rate (Minimum)

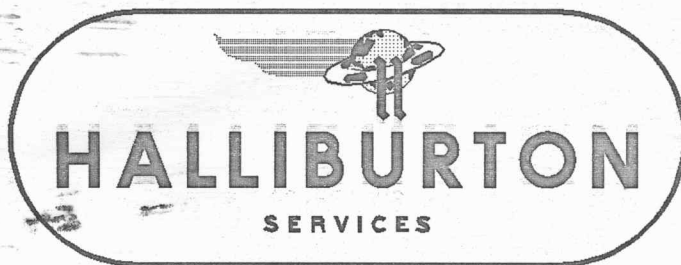
$$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$$

MCFD

Approx. Radius of
Investigation

$$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_f}}$$

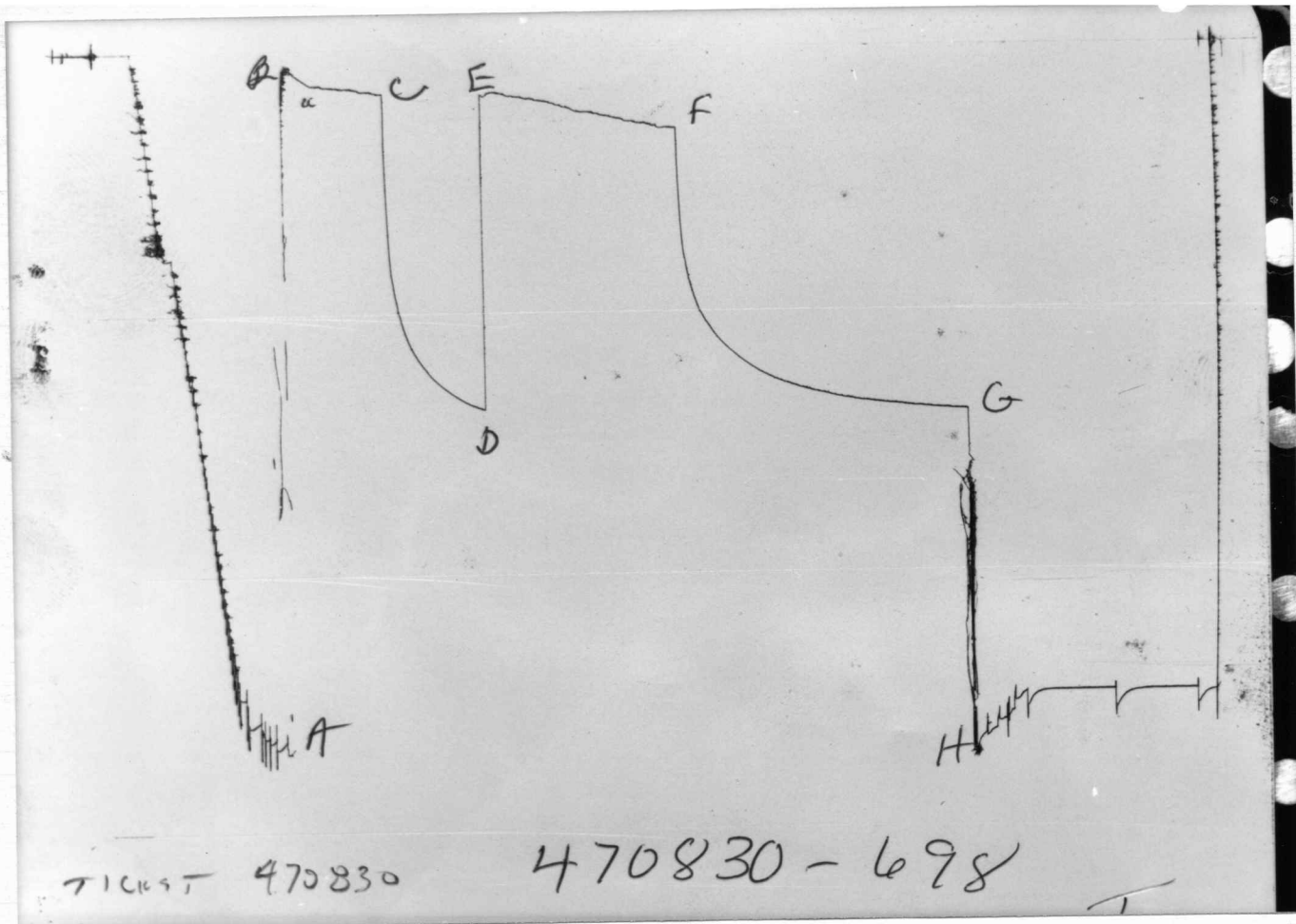
ft



TICKET NO. 47083000
02-FEB-83
PRATT

FORMATION TESTING SERVICE REPORT

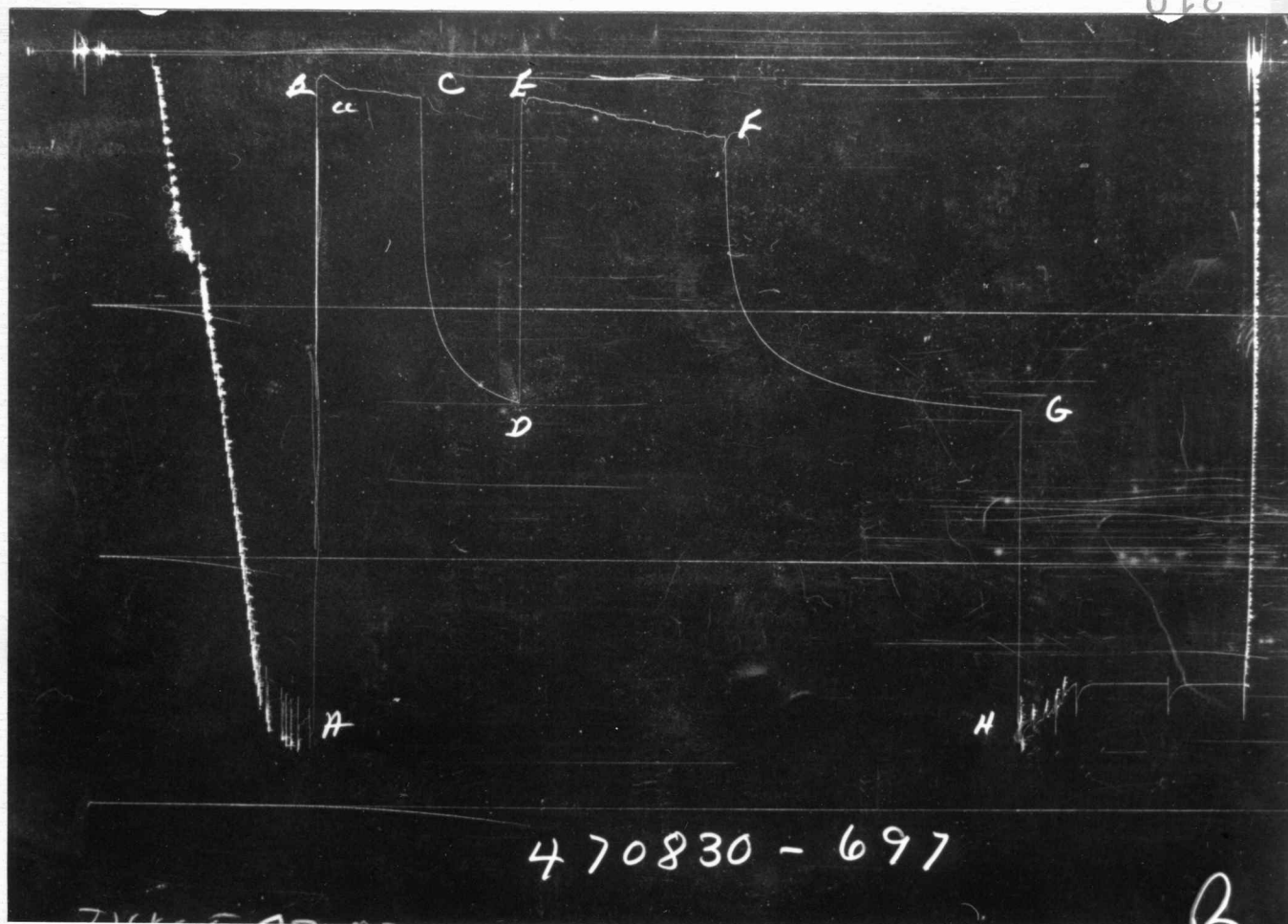
ALTON UNRUH	"C" -2	4	5080.1 - 5094.1	THE MAURICE L. BROWN COMPANY
LEASE NAME	WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME
LEGAL LOCATION SEC. - TWP. - RMC.	26 - 30S - 18W	FIELD AREA	COUNTY	KIOWA
			STATE	KANSAS
			DR/PM	



GAUGE NO: 698 DEPTH: 5065.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2636.6			
B	INITIAL FIRST FLOW		118.7			
C	FINAL FIRST FLOW		168.2	60.0	61.3	F
C	INITIAL FIRST CLOSED-IN		168.2			
D	FINAL FIRST CLOSED-IN		1372.3	60.0	58.7	C
E	INITIAL SECOND FLOW		174.4			
F	FINAL SECOND FLOW		311.6	120.0	120.1	F
F	INITIAL SECOND CLOSED-IN		311.6			
G	FINAL SECOND CLOSED-IN		1391.2	180.0	174.9	C
H	FINAL HYDROSTATIC		2643.6			

012



GAUGE NO: 697 DEPTH: 5091.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2758	2644.4			
B	INITIAL FIRST FLOW	79	112.2			
C	FINAL FIRST FLOW	179	174.0	60.0	61.3	F
C	INITIAL FIRST CLOSED-IN	179	174.0			
D	FINAL FIRST CLOSED-IN	1358	1377.3	60.0	58.7	C
E	INITIAL SECOND FLOW	159	175.3			
F	FINAL SECOND FLOW	308	314.0	120.0	120.1	F
F	INITIAL SECOND CLOSED-IN	308	314.0			
G	FINAL SECOND CLOSED-IN	1358	1389.2	180.0	174.9	C
H	FINAL HYDROSTATIC	2717	2649.0			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MISSISSIPPI

NET PAY (ft): 12.0

GROSS TESTED FOOTAGE: 14.0

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft):

HOLE OR CASING SIZE (in): 7.875

ELEVATION (ft): 2208

TOTAL DEPTH (ft): 5094.0

PACKER DEPTH(S) (ft): 5080

FINAL SURFACE CHOKE (in): 0.250

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.70

MUD VISCOSITY (sec): 53

ESTIMATED HOLE TEMP. (°F):

ACTUAL HOLE TEMP. (°F): 125 @ 5089.0 ft

TICKET NUMBER: 47083000

DATE: 1-26-83 TEST NO: 4

TYPE DST: OPEN HOLE

HALLIBURTON CAMP: PRATT

TESTER: DON GRAHAM

WITNESS: BUD MILLER

DRILLING CONTRACTOR: ABERCROMBIE #6

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
<u>PIT</u>	<u>@ °F</u>	<u>62000 ppm</u>
<u></u>	<u>@ °F</u>	<u>ppm</u>
<u></u>	<u>@ °F</u>	<u>ppm</u>
<u></u>	<u>@ °F</u>	<u>ppm</u>
<u></u>	<u>@ °F</u>	<u>ppm</u>
<u></u>	<u>@ °F</u>	<u>ppm</u>

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): 35.0 @ 60°F

GAS/OIL RATIO (cu.ft. per bbl):

GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT
<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>

RECOVERED:

780 FEET OF FREE OIL
30 FEET OF SALTWATER

MEASURED FROM
TESTER VALVE

REMARKS:

TYPE & SIZE MEASURING DEVICE: _____ MERLA TESTER _____					TICKET NO: 47083000
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
1-26-83					
1610					OPENED TOOL WITH A STRONG
					BLOW OFF BOTTOM OF BUCKET - 12"
1614					GAS TO THE SURFACE IN 4 MINUTES
1615	.25"	28	59		
1620	.25"	42	78.6		
1625	.25"	54	95.3		CHANGED CHOKE PLATE TO 3/8"
1630	.375	54	202		
1635	.375"	50	191		
1640	.375"	46	178		
1645	.375"	43	170		
1650	.375"	41	164		
1655	.375"	38	155		
1700	.375"	36	150		
1705	.375"	34	143		
1710	.375"	32	137		CLOSED TOOL - CAUGHT GAS SAMPLE
					BLOW TOOK 28 MINUTES TO DIE
1810	.375"	4	39		REOPENED TOOL - GAS TO THE
					SURFACE.
1815	.375"	20	100		
1820	.375"	47	182		BLOWING CONDENSATE
1825	.375"	45	176		
1830	.375"	37	153		HELD WHITE PAPER TOWEL IN FRONT
					OF MERLA - NO OIL STAIN FROM
					MIST THROUGHOUT FLOW PERIOD.
1835	.375"	30	132		
1840	.375"	24	113		
1845	.375"	21	104		
1850	.375"	20	100		
1855	.375"	19	97.2		
1900	.375"	18	93.3		
1905	.375"	17	90		
1910	.375"	14	79.7		
1915	.375"	15	83.2		
1920	.375"	17	90		
1925	.375"	16	86.8		
1930	.375"	16	86.8		

TICKET NO: 47083000

CLOCK NO: 25710 HOUR: 12


HALLIBURTON
SERVICES

GAUGE NO: 698

DEPTH: 5065.0

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	118.7		
	2	10.0	101.0	-17.7	
☒	3	17.8	134.2	33.2	
	4	20.0	135.0	0.8	
	5	30.0	143.7	8.7	
	6	40.0	148.4	4.8	
	7	50.0	159.9	11.4	
C	8	61.3	168.2	8.3	
FIRST CLOSED-IN					
C	1	0.0	168.2		
	2	4.0	883.0	714.8	3.7 1.213
	3	8.0	1010.1	841.8	7.1 0.936
	4	12.0	1093.7	925.5	10.0 0.786
	5	16.0	1151.5	983.2	12.7 0.684
	6	20.0	1191.0	1022.7	15.1 0.609
	7	24.0	1225.0	1056.7	17.3 0.550
	8	28.0	1253.5	1085.3	19.2 0.504
	9	32.0	1277.3	1109.1	21.0 0.464
	10	36.0	1297.6	1129.4	22.7 0.432
	11	40.0	1315.7	1147.5	24.2 0.403
	12	44.0	1332.4	1164.1	25.6 0.379
	13	48.0	1346.7	1178.5	26.9 0.357
	14	52.0	1358.0	1189.8	28.1 0.338
	15	56.0	1366.9	1198.7	29.3 0.321
D	16	58.7	1372.3	1204.1	30.0 0.311
SECOND FLOW					
E	1	0.0	174.4		
	2	20.0	184.7	10.3	
	3	40.0	205.9	21.2	
	4	60.0	244.2	38.4	
	5	80.0	267.4	23.2	
	6	100.0	291.4	24.0	
F	7	120.1	311.6	20.2	
SECOND CLOSED-IN					
F	1	0.0	311.6		
	2	10.0	960.1	648.4	9.5 1.281
	3	20.0	1078.3	766.7	18.0 1.003
	4	30.0	1150.4	838.7	25.7 0.848
	5	40.0	1202.0	890.4	32.8 0.743
	6	50.0	1241.8	930.1	39.2 0.665
	7	60.0	1271.1	959.5	45.1 0.605
	8	70.0	1293.2	981.6	50.5 0.555

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
	9	80.0	1311.9	1000.3	55.5 0.514
	10	90.0	1326.6	1015.0	60.1 0.479
	11	100.0	1341.4	1029.8	64.5 0.449
	12	110.0	1351.6	1039.9	68.5 0.423
	13	120.0	1359.7	1048.1	72.2 0.400
	14	130.0	1366.1	1054.5	75.7 0.379
	15	140.0	1374.0	1062.4	79.0 0.361
	16	150.0	1380.3	1068.7	82.1 0.344
	17	160.0	1384.9	1073.3	85.0 0.329
	18	170.0	1389.6	1077.9	87.7 0.315
G	19	174.9	1391.2	1079.6	89.0 0.309

LEGEND:

☒ CHOKE CHANGE

REMARKS:

TICKET NO: 47083000

CLOCK NO: 17485 HOUR: 12



GAUGE NO: 697

DEPTH: 5091.0

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	112.2		
	2	10.0	111.0	-1.2	
1	3	17.8	142.7	31.8	
	4	20.0	141.8	-0.9	
	5	30.0	149.8	8.0	
	6	40.0	152.6	2.8	
	7	50.0	166.0	13.4	
C	8	61.3	174.0	8.0	
FIRST CLOSED-IN					
C	1	0.0	174.0		
	2	4.0	883.0	709.0	3.8 1.209
	3	8.0	1024.8	850.8	7.1 0.937
	4	12.0	1110.6	936.6	10.0 0.786
	5	16.0	1165.8	991.8	12.7 0.684
	6	20.0	1205.9	1031.9	15.1 0.609
	7	24.0	1238.6	1064.6	17.2 0.551
	8	28.0	1267.6	1093.6	19.2 0.504
	9	32.0	1288.9	1114.9	21.0 0.465
	10	36.0	1309.3	1135.3	22.7 0.432
	11	40.0	1325.2	1151.1	24.2 0.403
	12	44.0	1339.2	1165.2	25.6 0.379
	13	48.0	1351.5	1177.5	26.9 0.357
	14	52.0	1362.5	1188.5	28.1 0.338
	15	56.0	1371.8	1197.8	29.3 0.321
D	16	58.7	1377.3	1203.3	30.0 0.311
SECOND FLOW					
E	1	0.0	175.3		
	2	20.0	187.5	12.3	
	3	40.0	207.6	20.0	
	4	60.0	250.1	42.5	
	5	80.0	271.4	21.3	
	6	100.0	294.0	22.6	
F	7	120.1	314.0	20.0	
SECOND CLOSED-IN					
F	1	0.0	314.0		
	2	10.0	982.1	668.1	9.5 1.281
	3	20.0	1098.7	784.7	18.0 1.003
	4	30.0	1168.1	854.1	25.7 0.848
	5	40.0	1213.4	899.4	32.8 0.743
	6	50.0	1248.6	934.6	39.2 0.665
	7	60.0	1274.6	960.6	45.1 0.604
	8	70.0	1296.1	982.0	50.5 0.555

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND CLOSED-IN - CONTINUED					
	9	80.0	1314.1	1000.1	55.5 0.514
	10	90.0	1328.4	1014.3	60.1 0.479
	11	100.0	1339.2	1025.1	64.4 0.449
	12	110.0	1350.9	1036.9	68.5 0.423
	13	120.0	1359.9	1045.9	72.2 0.400
	14	130.0	1366.2	1052.2	75.7 0.379
	15	140.0	1372.2	1058.2	79.0 0.361
	16	150.0	1377.5	1063.4	82.1 0.344
	17	160.0	1383.2	1069.1	85.0 0.329
	18	170.0	1388.2	1074.1	87.7 0.315
G	19	174.9	1389.2	1075.1	89.0 0.309

LEGEND:

1 CHOKE CHANGE

REMARKS:

TICKET NO. 47083000

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4865.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4866.0
4		FLEX WEIGHT.....	4.500	2.764	186.0	
5		CROSSOVER.....	6.000	2.250	1.0	
12		DUAL CIP VALVE.....	5.000	0.870	6.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	5063.0
81		BLANKED-OFF RUNNING CASE.....	5.000	3.060	4.0	5065.0
15		JAR.....	5.000	1.500	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	6.750	1.530	6.0	5080.0
20		FLUSH JOINT ANCHOR.....	5.000	2.360	7.0	
83		HT-500 TEMPERATURE CASE.....	5.000		1.0	5089.0
80		AP RUNNING CASE.....	5.000		4.0	5091.0
TOTAL DEPTH						5094.0

EQUIPMENT DATA

TEMPERATURE

RECORDER

CHART

10° each circle



Indicated Flow Capacity

$$kh = \frac{1637 Q_g T}{m}$$

Average Effective Permeability

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

md

Skin Factor

$$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{kt}{\phi \mu c_t r_w^2} + 3.23 \right] \text{ ---}$$

Damage Ratio

$$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 mS} \text{ ---}$$

Indicated Flow Rate (Maximum)

$$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$$

MCFD

Indicated Flow Rate (Minimum)

$$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$$

MCFD

Approx. Radius of Investigation

$$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_t}}$$

ft

1/c file

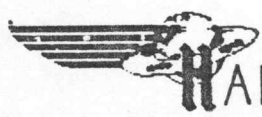
Lease Name ALTON JUNRUH
Lease Owner M. L. BROWN

Well No. C-2
Date 1-26-83

Test No. 4
Ticket No. 470830

KCO

FEB 8 1983



HALLIBURTON SERVICES

THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES, BUT
BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION
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Lease Name ALTON UNKUM

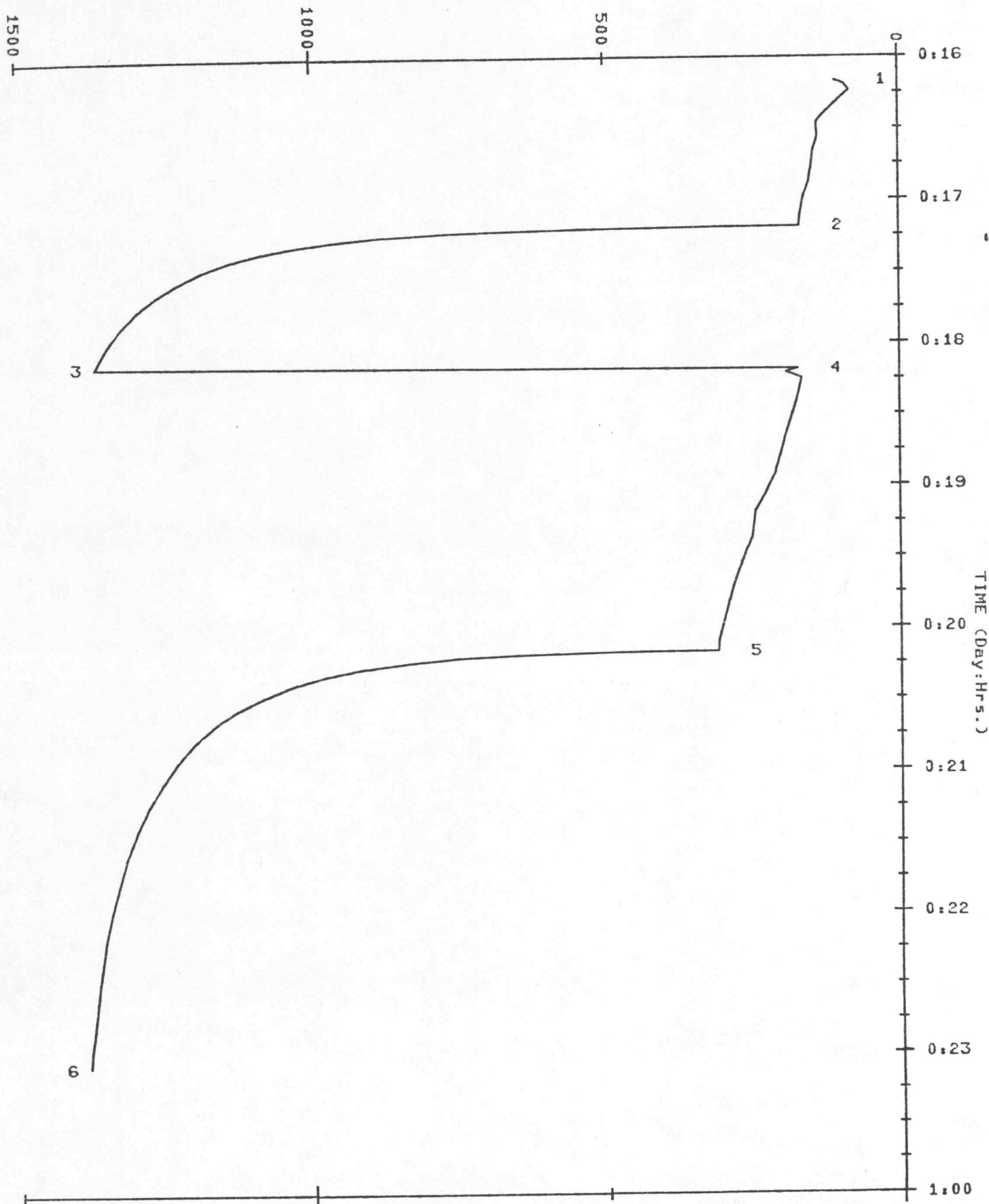
Lease Owner M. L. BROWN

Gauge Sn. 000697

Date 1-26-83

Ticket no. 470830

Pressure



NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATIONS OF LIABILITY PROVISIONS ON PAGE 1

Lease Name ALTON WARD

Lease Owner M. L. BROWN

Date 1-26-83

Ticket no. 470830

Gauge Sn. 000697

loc.	Time	Description	Press.	Delta t	Time int.
0	0:16:10:00	Start Time			
1	0:16:10:00	initial flow # 1	92.23	0.000	0 1
2	0:17:11:05	final flow # 1	169.12	61.083	1 2
3	0:18:10:06	closed in # 1	1368.64	59.017	2 3
4	0:18:10:53	initial flow # 2	172.61	.783	3 4
5	0:20:09:57	final flow # 2	310.86	119.067	4 5
6	0:23:05:20	closed in # 2	1382.26	175.383	5 6

Lease Name ALTON UNRUH
Lease Owner M. L. BROWN
Gauge Sn. 000697

Well No. C-2
Date 1-26-83

Lease No. 4
Ticket no. 470830

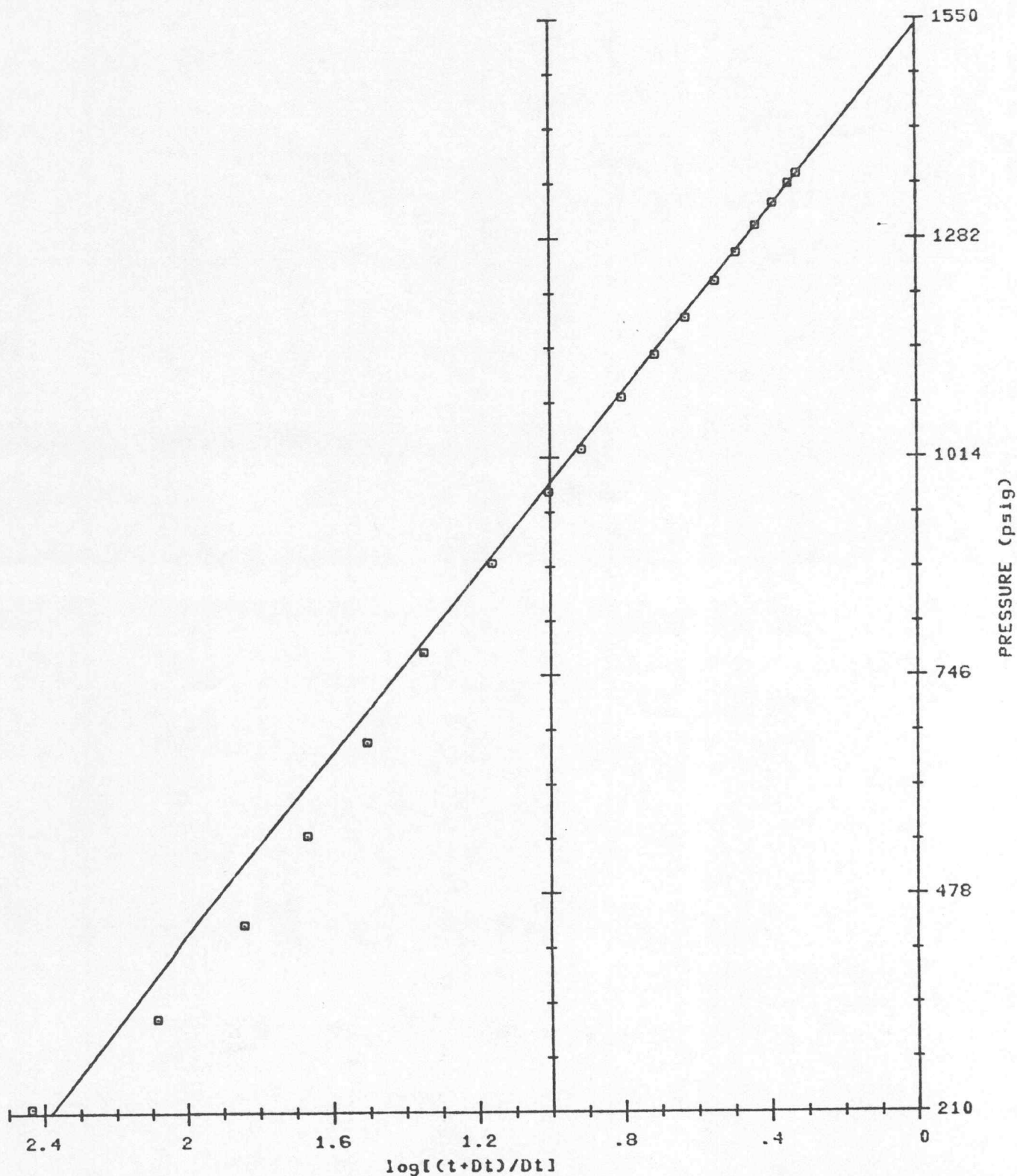
HORNER PLOT

$P_s = 1541.61$

$P_{10} = 982.75$

$CC = .999847$

PERIOD # 1



NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATION OF LIABILITY PROVISIONS ON PAGE 1.

Lease Name ALTON UNRUH

Well No. C-2

Test No. 4

Lease Owner M. L. BROWN

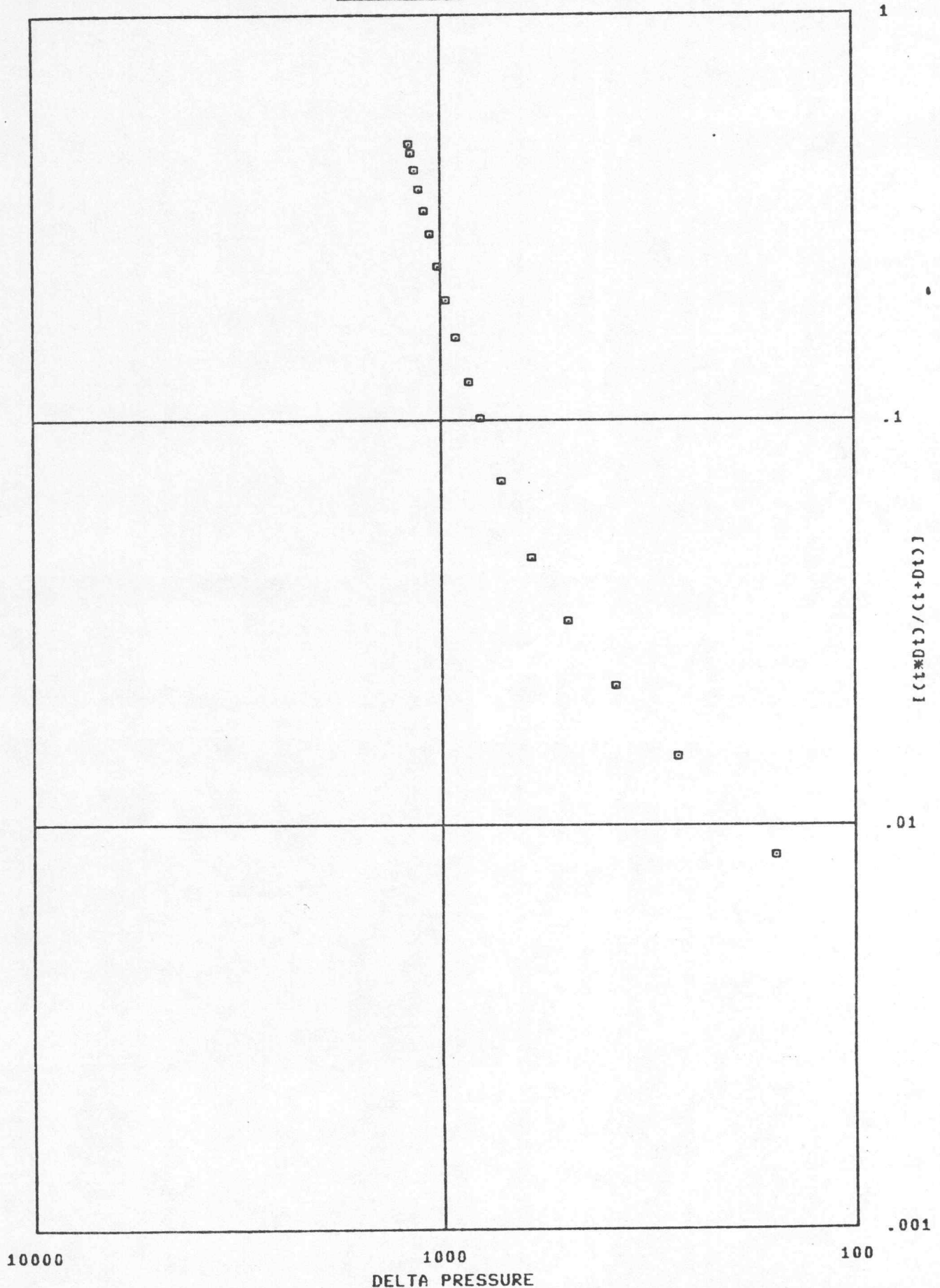
Date 1-26-83

Ticket no. 470830

Gauge Sn. 000697

Log-Log PLOT

PERIOD # 1



NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATION OF LIABILITY PROVISIONS ON PAGE 1.

Lease Name ALTON UNRUH

Date 1-26-83

Ticket No. 0830

Period # 1

Time	Press.	Temp	Delta t	Ps	P10	Sec	
0:18:10:53	172.61	123					inital flow # 2
0:18:12:33	193.03	123	1.7				
0:18:14:51	165.84	123	4.0				
0:18:20:19	170.72	123	9.4				
0:18:26:03	177.19	123	15.2				
0:18:32:39	185.86	123	21.8				
0:18:39:14	194.52	123	28.3				
0:18:47:14	203.19	123	36.4				
0:18:55:27	212.95	123	44.6				
0:19:03:40	229.38	123	52.8				
0:19:11:09	247.01	123	60.3				
0:19:22:06	252.49	123	71.2				
0:19:30:14	266.53	123	79.4				
0:19:42:00	283.96	123	91.1				
0:19:53:09	296.02	123	102.3				
0:20:05:39	309.66	123	114.8				
0:20:09:57	310.86	123	119.1				final flow # 2
0:20:10:11	360.26	123	.2				
0:20:10:34	453.59	123	.6				
0:20:11:02	540.40	123	1.1				
0:20:11:46	642.60	123	1.8				
0:20:12:57	747.50	123	3.0				
0:20:14:53	830.50	123	4.9	1385.55	1019.91	.987366	
0:20:17:48	920.30	123	7.8	1539.63	1091.66	.999548	
0:20:20:36	976.60	123	10.6	1537.92	1090.82	.999702	
0:20:24:23	1030.66	123	14.4	1535.90	1089.86	.999781	
0:20:29:45	1084.57	123	19.8	1533.25	1088.12	.999896	
0:20:35:20	1130.16	123	25.4	1534.99	1088.59	.999926	
0:20:40:48	1163.43	123	30.8	1536.27	1088.92	.999941	
0:20:48:34	1200.10	123	38.6	1536.94	1089.08	.999954	
0:20:57:17	1231.26	123	47.3	1536.74	1089.03	.999964	
0:21:05:29	1254.41	123	55.5	1533.15	1090.13	.999939	
0:21:15:37	1280.06	123	65.7	1534.55	1089.32	.999949	
0:21:25:33	1299.90	123	75.6	1535.45	1089.59	.999957	
0:21:37:15	1318.34	123	87.3	1535.16	1089.67	.999967	
0:21:49:11	1331.76	123	99.2	1532.80	1090.41	.999889	
0:22:01:21	1344.79	123	111.4	1530.83	1091.08	.999834	
0:22:13:08	1354.71	123	123.2	1509.95	1114.13	.999674	
0:22:25:32	1362.02	123	135.6	1504.95	1119.50	.999101	
0:22:37:38	1368.84	123	147.7	1496.04	1131.69	.998843	
0:22:50:34	1375.85	123	160.6	1485.34	1149.83	.999377	
0:22:59:31	1380.66	123	169.6	1487.21	1146.89	.999393	
0:23:05:20	1382.26	123	175.4	1486.35	1148.26	.999465	closed in # 2

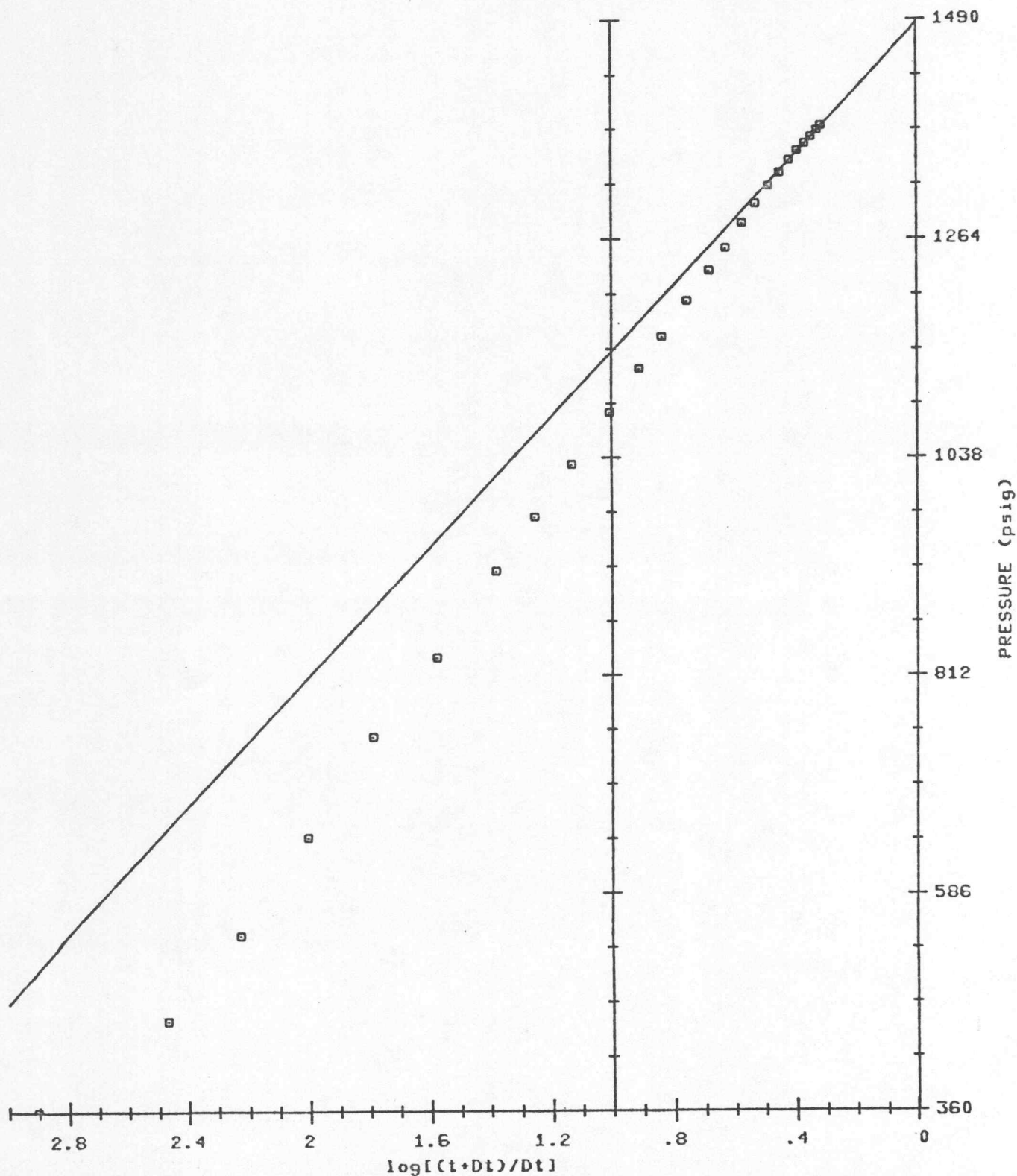
NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATION OF LIABILITY PROVISIONS ON PAGE 1.

Lease Name ALTON UNRUH
Lease Owner M. L. BROWN
Gauge Sn. 000697

Well No. C-2
Date 1-26-83

Test No. 4
Ticket no. 470830

HORNER PLOT
P_s = 1486.35
P₁₀ = 1148.26
CC = .999465
PERIOD # 2

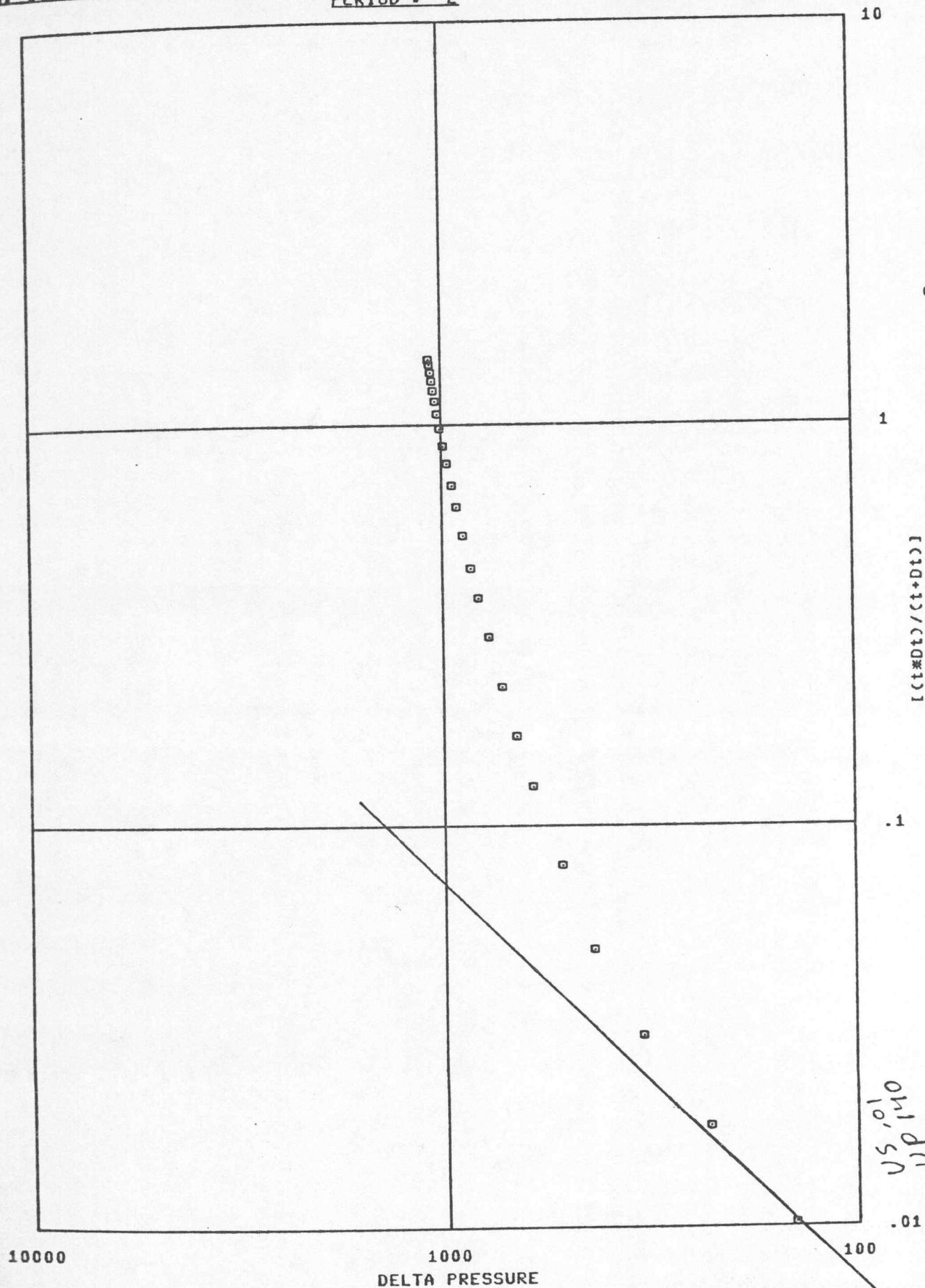


NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATION OF LIABILITY PROVISIONS ON PAGE 1.

Lease Name ALTON UNRUH
Lease Owner M. L. BROWN
Gauge No. 000697

WELA NO. 5-6
Date 1-26-83
Log-Log PLOT
PERIOD # 2

ICSA NO. 7
Ticket no. 470830



NOTICE: THIS INFORMATION IS SUBJECT TO THE LIMITATION OF LIABILITY PROVISIONS ON PAGE 1.

HALLIBURTON SERVICES

Lease Name ALTON UNRUH	Well No. C-2	Test No. 4
Lease Owner M. L. BROWN	Date 1-26-83	Ticket no. 470830
Gauge Sn. 000697		

LIQUID PRODUCTION FOR OIL PERIOD # 2

GAS GRAVITY	.650000	FLUID GRADIENT	.368240 psi/ft
GAS/OIL RATIO	250.000000	FORMATION VOL FACTOR	1.148883 v/v
TEMPERATURE	123.000000	F FLUID PROPERTIES AT	1382.264529 Psig
VISCOSITY	1.936377	cp NET PAY	12.000000 ft
PIPE CAPACITY FACTOR	.007421	.014220 bbl/ft	

GAUGE DEPTH		5091.000000	ft
FINAL FLOW PRESSURE	Pf	310.856574	Psig
TOTAL FLOW TIME	t	180.155992	min
EXTRAPOLATED PRESS.	Ps	1486.352891	Psig
ONE CYCLE PRESSURE		1148.257063	Psig
PRODUCTION RATE	Q	78.000000	BPD
TRANSMISSIBILITY	kh/u	43.097419	mf/c
FLOW CAPACITY	kh	83.452870	mdft
PERMEABILITY	k	6.954406	md
DAMAGE RATIO	DR	.636257	
POTENTIAL RATE	Q1	78.000000	BPD
RADIUS OF INVEST.	ri	163.883549	ft



TICKET NUMBER 470830



	O.D.	I.D.	LENGTH	DEPTH
DRILL PIPE_____	4.500_____	3.826_____	4865.0	
REVERSING SUB - HOLLOW PIN IMPACT_____	6.000_____	3.000_____	1.0_____	4866.0
FLEX WEIGHT_____	4.500_____	2.764_____	186.0	
CROSSOVER_____	6.000_____	2.250_____	1.0	
DUAL C.I.P. VALVE_____	5.000_____	.870_____	6.0	
HYDROSPRING TESTER_____	5.000_____	.750_____	5.0_____	5063.0
RUNNING CASE - BLANKED OFF_____	5.000_____	3.060_____	4.0_____	5065.0
JAR_____	5.000_____	1.500_____	5.0	
V.R. SAFETY JOINT_____	5.000_____	1.000_____	3.0	
PACKER - OPEN HOLE_____	6.750_____	1.530_____	6.0_____	5080.0
ANCHOR - FLUSH JOINT_____	5.000_____	2.360_____	7.0	
HT-500 TEMPERATURE CASE_____	5.000_____	3.350_____	1.0_____	5089.0
RUNNING CASE - A.P._____	5.000_____	2.440_____	4.0_____	5091.0

LIBURTON SERVICES JOB LOG

WELL NO. LEASE TICKET NO.
 CUSTOMER THE MAURICE L. BROWN Co PAGE NO. 1 of 2
 JOB TYPE OPEN HOLE DST #4 5080'-5099' DATE 1-26-83

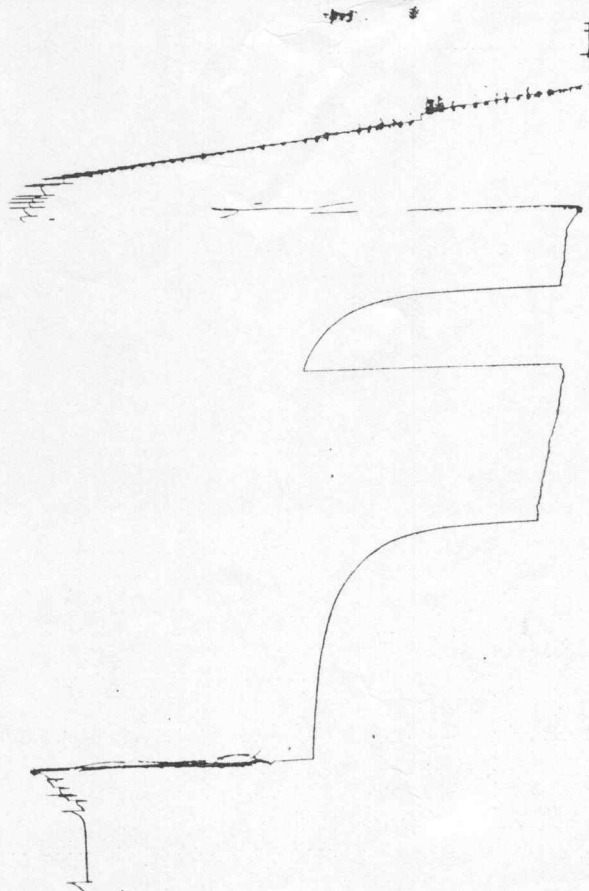
ART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	11:40							Called Out
	13:15							ON LOCATION - Rig Coming Out
								CHANGE TWC ON WALK.
	13:43							START Clocks
	14:00							Pickup Tool
	14:20							Tool MADE UP : IN TABLE
	14:35							Tool THRU TABLE
	16:07							Tool ON BOTTOM
	16:10							Tool OPEN - STRONG Blow off
								BOTTOM of BUCKET. 12"
	16:14	CHOKE	PSI					* "CTS" GAS TO SURFACE. IN 4 MINUTES
	16:15	1/4"	28 [#]			59.0		
	16:20	1/4"	42			78.6		
	16:25	1/4"	54			95.3		CHANGED TO 3/8" CHOKE
	16:30	3/8"	54			202.		
	16:35	3/8"	50			191.		
	16:40	3/8"	46			178.		
	16:45	3/8"	43			170.		
	16:50	3/8"	41			164.		
	16:55	3/8"	38			155.		
	17:00	3/8"	36			150.		
	17:05	3/8"	34			143.		
	17:10	3/8"	32			137.		Tool CLOSED - CAUGHT GAS Sample.
								Took 28 minutes for BLOW TO DIE.
	18:10	3/8"	4 [#]			39		Tool OPEN - GAS TO SURFACE.
	18:15	2/8"	20 [#]			100		
	18:20	3/8"	47			182		BLOWING CONDENSATE.
	18:25	3/8"	45			176		
	18:30	3/8"	37			153		
	18:35	3/8"	30			132		Held white paper towel in front
	18:40	3/8"	24			113		of MERLA - NO OIL STAIN IN
	18:45	3/8"	21			104		MIST.
	18:50	3/8"	20			100		
	18:55	3/8"	19			97.2		
	19:00	3/8"	18			93.3		
	19:05	3/8"	17			90.		
	19:10	3/8"	14			79.7		

JOHN SERVICES JOB LOG

WELL NO. 2 LEASE 1-26-83
 CUSTOMER THE MAURICE L. BROWN Co. PAGE NO. 2 of 2
 JOB TYPE Open Hole DST #4 5080'-5094' DATE 1-26-83

TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
			T	C	TUBING	CASING	
							Continued from Page 1
	CHOKE	PSI				mcf	
19:15	3/8"	15"			83.2		CHECKED FLOW LINE WITH WHITE
19:20	3/8"	17"			90.		PAPER TOWEL THEN OUT FLOW
19:25	3/8"	16			86.8		PERIOD, NO OIL STAIN ON TOWEL.
19:30	3/8"	16			86.8		FROM MIST.
19:35	3/8"	18			93.3		
19:40	3/8"	14			79.7		
19:45	3/8"	14			79.7		
19:50	3/8"	14			79.7		
19:55	3/8"	13			76.3		
20:00	3/8"	10.5			67.3		
20:05	3/8"	14			79.7		
20:10	3/8"	13			76.3		Tool Closed
							Took 12 MINUTES FOR BLOW TO DIE.
23:10							By -PASS OPEN.
	LOADED HEAD IN PIPE						PULLED 3 STANDS & LET HANG OVER
	& BLEED OFF OVERNIGHT.						NIGHT, DRILLER TO MOVE PIPE IN
	THRU FLOW LINE						30 TO 45 MINUTE INTERVALS.

7100 T 470230



RECOVERY: 780 FOOT FREE OIL
 30 FOOT SALT WATER.

API GRAVITY 35 @ 60°.

TEST INTERVAL 5080' - 5094'
 TIME INTERVAL - 60-60-120-180
 Temp 123°F

IHP 2758
 IFP 79-179
 ISIP 1358
 FFP 159-308
 FSIP 1358
 FNP 2717

HALLIBURTON SERVICES

Company THE MAURICE L. BROWN CO
 Lease ALTON UNIT No. C" #2

Sec 26 Twp 30S Rge 18W County KIOWA

Formation MISS Depth 5094

Pool _____ Sample Source RA

Well History _____

Date 1-27-83 Submitted by _____

Hydrogen Sulfide _____ Sp. Gr. 1.0723

Iron _____ mpl. pH 7

Chlorides 61560 mpl. Calcium _____ mpl.

Magnesium _____ mpl. Sulfates _____ mpl.

Resistivity .03 Ohm m2/m @ 75 ° F

Other _____

Remarks _____

Location _____ Analyst _____

HALLIBURTON SERVICES

Company THE MAURICE L. BROWN CO
 Lease ALTON UNIT No. C" #2

Sec 26 Twp 30S Rge 18W County KIOWA

Formation MISSISSIPPI Depth 5094

Pool _____ Sample Source BOTTOM

Well History _____

Date 1-27-83 Submitted by Decker

Hydrogen Sulfide _____ Sp. Gr. 1.1210

Iron _____ mpl. pH 6

Chlorides 104960 mpl. Calcium _____ mpl.

Magnesium _____ mpl. Sulfates _____ mpl.

Resistivity .06 Ohm m2/m @ 75 ° F

Other _____

Remarks _____

Location _____ Analyst _____