JS-165

JOHNSTON

Schlumberger

computerized data analysis

COMPANY U.S.G.S./HUSKY OIL WELL LISBURNE #1 TEST NO. 4 COUNTY NORTH SLOPE STATE ALASKA

COMPANY

FIELD REPORT # 12062 D

JOHNSTON
Schlumberger

COMPUTERIZED DATA ANALYSIS

JUNE 13, 1980

GENTLEMEN:

THE ENCLOSED TEST APPEARS TO BE A GOOD MECHANICAL DRILL STEM TEST DURING WHICH THE TOOLS DID FUNCTION PROPERLY. THE FORMATION PRODUCED ENOUGH RESERVOIR FLUID FOR PROPER IDENTIFICATION. RESERVOIR PRESSURE DRAWDOWN WAS SUFFICIENT BUT ADEQUATE SHUT-IN BUILD-UPS DID NOT OCCUR FOR RELIABLE QUANTITATIVE ANALYSIS. AFTERFLOW WAS STILL IN EFFECT ON THE INITIAL AND FINAL SHUT-IN BUILD-UPS TO THE EXTENT THAT THE PLOTS ARE CONSIDERED UNRELIABLE FOR ANALYSIS. AN ESTIMATE OF RESERVOIR PARAMETERS WERE CALCULATED BY THE MCKINLEY METHOD.

1. FLOW RATE: A WEIGHTED AVERAGE FLOW RATE OF 28 MCF/DAY OF GAS WAS NOTED DURING THIS TEST.

2. RESERVOIR PRESSURE: EXTRAPOLATION OF THE INITIAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 2007 P.S.I.G. AT RECORDER DEPTH. EXTRAPOLATION OF THE FINAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3264 P.S.I.G. AT RECORDER DEPTH. THE DIFFERENCE BETWEEN THE INITIAL AND FINAL SHUT-IN PRESSURE IS DUE TO THE LOW PERMEABILITY AND INSUFFICENT SHUT-IN TIME.

3. PERMEABILITY: THE CALCULATED TRANSMISSIBILITY FACTOR OF 1.32 MD.-FT./CP. INDICATES AN AVERAGE EFFECTIVE PERMEABILITY TO GAS OF .00024 MD. FOR THE REPORTED 82 FOOT NET INTERVAL. THE CALCULATIONS WERE BASED ON A MCKINLEY SLOPE OF 4927 P.S.I./LOG CYCLE OBTAINED FROM THE FINAL SHUT-IN BUILD-UP PLOT. IT WAS ASSUMED FOR THESE CALCULATIONS: (A) GAS GRAVITY 0.60, (B) VISCOSITY .0151 CP., (C) AND GAS DEVIATION FACTOR .845. THESE FIGURES WERE OBTAINED FROM THE AVAILABLE TECHNICAL LITERATURE.

4. WELLBORE DAMAGE: THE CALCULATED DAMAGE RATIO OF 0.57 INDICATES THAT NO WELLBORE DAMAGE IS PRESENT AT THE TIME AND CONDITIONS OF THIS TEST.

5. RADIUS OF INVESTIGATION: THE CALCULATED RADIUS OF INVESTIGATION OF THIS TEST IS 2.0 FEET BASED ON AN ASSUMED POROSITY OF 7%, COMPRESSIBILITY OF 6.5×10^{-4}, AND OTHER ASSUMPTIONS MADE IN NUMBER 3 ABOVE.

6. GENERAL COMMENTS: THE FORMATION EXHIBITS THE CHARACTERISTICS OF RELATIVELY LOW PERMEABILITY EFFECTIVE TO THE RESERVOIR FLUID AND INDICATES THE ABSENCE OF WELLBORE DAMAGE.

PARAMETERS CALCULATED HERE SHOULD BE USED AS INDICATORS ONLY.

Dennis Myren

DENNIS MYREN
RESERVOIR EVALUATION
DEPARTMENT

U.S.G.S./HUSKY OIL COMPANY
LISBURNE #1; NORTH SLOPE, ALASKA
TEST #4; 7022' TO 7104'
LOCATION: SEC. 17 - T11S - R16W, UM

FIELD REPORT # 12062 D

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.

Gas Reservoir Engineering Data

JOHNSTON

Instrument No. J-867 Field Report No. 12062 D

Damage Ratio	DR	0.57		Effective Transmissibility TO GAS	$\frac{Kh}{\mu}$	1.32	$\frac{Md\text{-}ft.}{Cp.}$
Maximum Reservoir Pressure ESTIMATED	P_o	3264	P.S.I.G.	Flow Rate WEIGHTED AVERAGE	Q_g	28	MCF/day
Slope of Shut-in Curve CALCULATED	M_g	4927	PSI/log cycle	Flow Rate	Q	–	
Potentiometric Surface (Datum Plane, Sea Level)	PS	–	ft.	Pressure Gradient		0.466	PSI/ft.
Radius of Investigation		2.0	ft.	K (Effective to GAS)		.00024	Md.

Assumptions made for Calculations for Gas Recoveries

1. Q_g is taken as steady state flow and unless stated otherwise at standard conditions 14.7 P.S.I. and 60°F.
2. P_f is final formation flowing pressure at steady state flow.
3. Formation flow is taken as single phase flow. If liquid (condensate) is produced at surface, condensation is assumed to have occurred in drill pipe.
4. Radial flow is assumed.
5. Unless given, gas specific gravity is assumed to be 0.7 (air 1.0) and having pseudo critical temperature at 385° Rankin and pseudo critical pressure of 666 P.S.I.A.
6. Other standard radial flow, steady state assumptions.

Empirical Equations:

1. $EDR = \dfrac{P_o^2 - P_f^2}{M_g(\log T + 2.65)}$ where $M_g = \dfrac{P_1^2 - P_{10}^2}{\text{Log Cycle}}$

2. Transmissibility $\dfrac{Kh}{\mu Z} = \dfrac{1637°T_f Q_g}{M_g}$

3. P.S. = $\left[P_o \times 2.309 \text{ ft./PSI}\right] - \left[\text{Recorder depth to sea level.}\right]$

4. Radius of Investigation, $r_i = \sqrt{\dfrac{Kt}{40\phi\,(1 - S_w)\mu c}}$ where t = time in days

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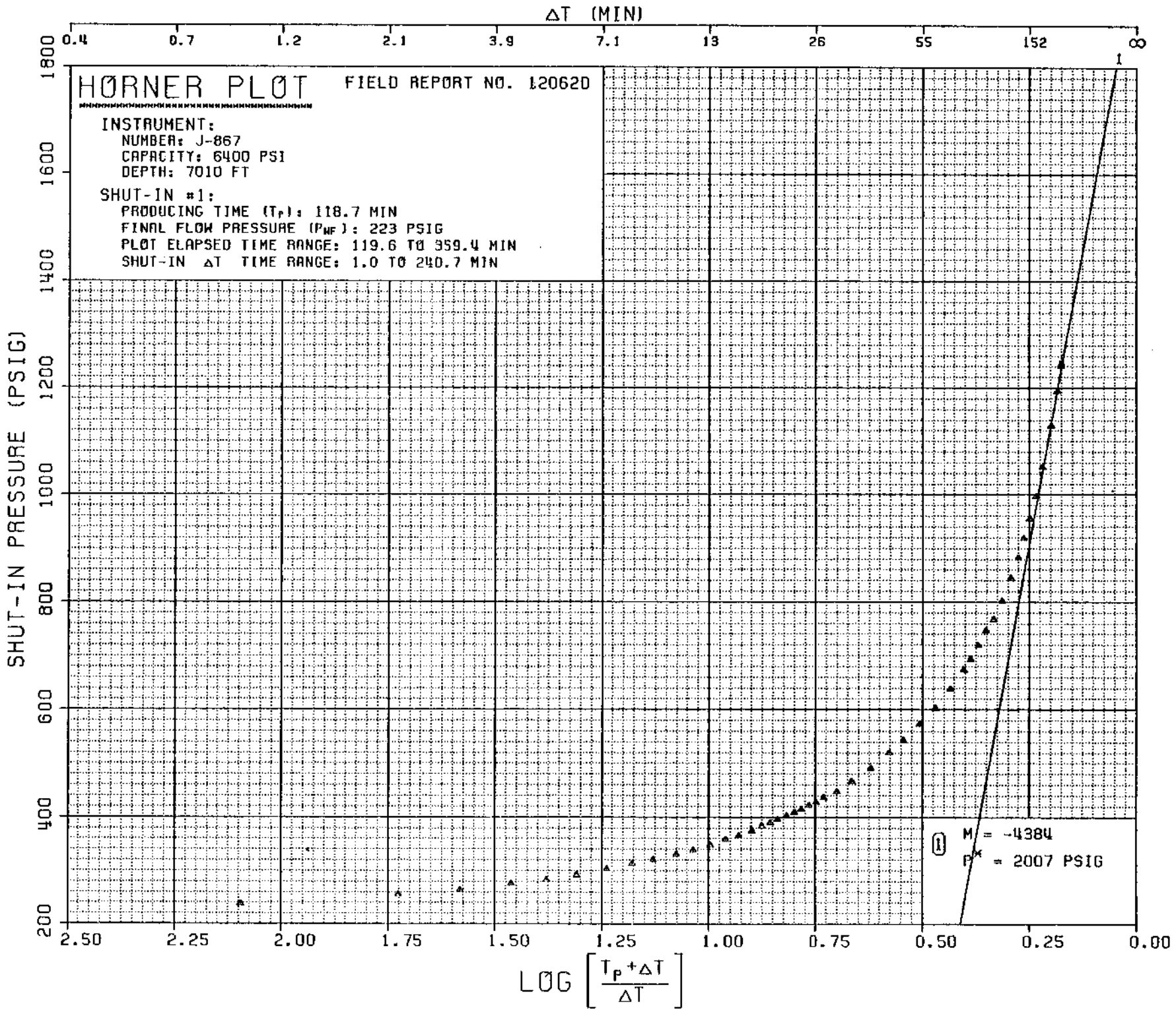
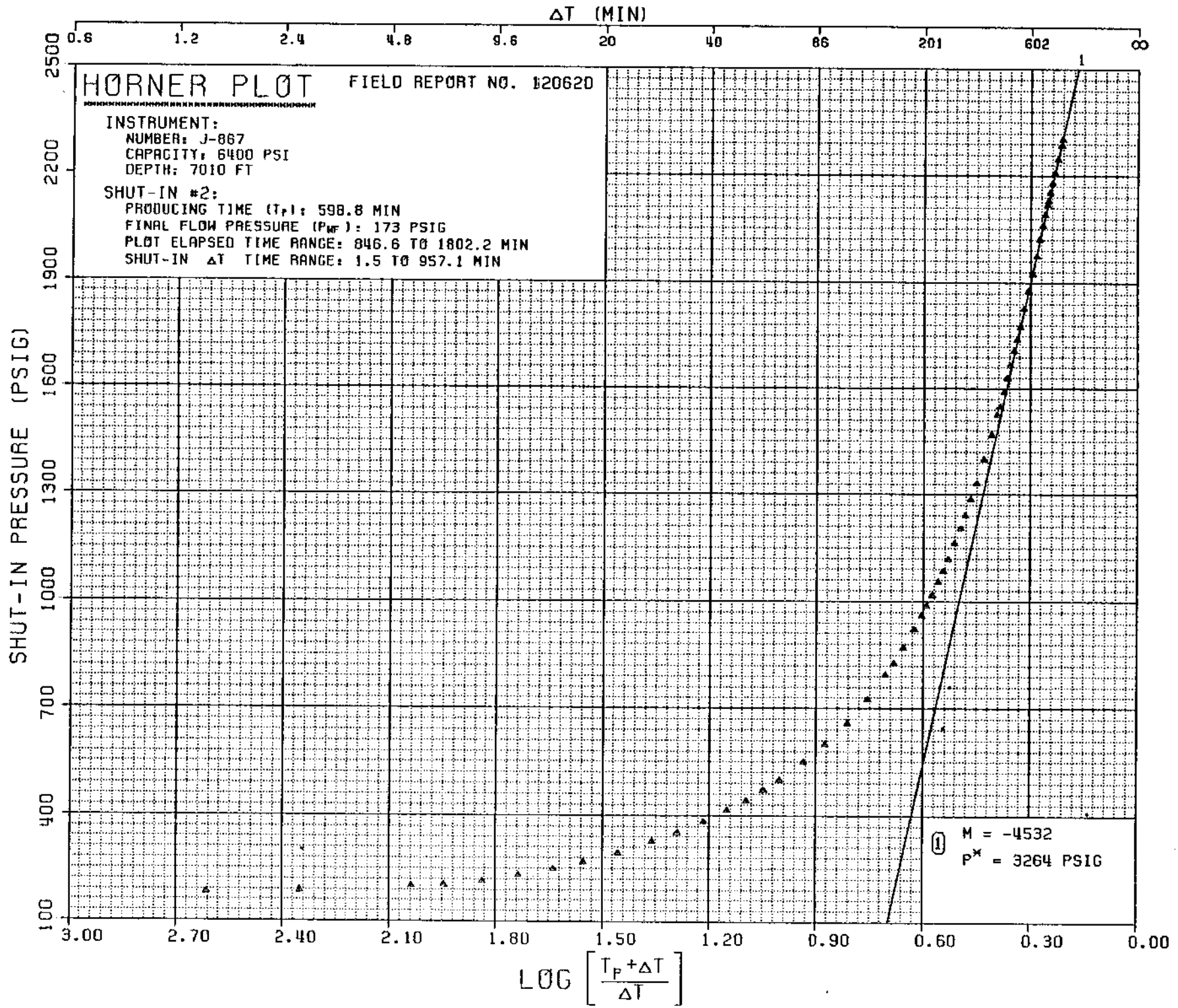

ΔT (MIN)
0.4
0.7
1.2
2.1
3.9
7.1
13
26
55
152
∞
HØRNER PLØT
FIELD REPORT NO. 120620
INSTRUMENT:
NUMBER: J-867
CAPACITY: 6400 PSI
DEPTH: 7010 FT
SHUT-IN #1:
PRODUCING TIME (T_P): 118.7 MIN
FINAL FLOW PRESSURE (P_{WF}): 223 PSIG
PLØT ELAPSED TIME RANGE: 119.6 TØ 359.4 MIN
SHUT-IN ΔT TIME RANGE: 1.0 TØ 240.7 MIN
SHUT-IN PRESSURE (PSIG)
1800
1600
1400
1200
1000
800
600
400
200
1
1
M = -4384
P* = 2007 PSIG
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
LØG $\left[\frac{T_P+\Delta T}{\Delta T}\right]$


ΔT (MIN)
0.6
1.2
2.4
4.8
9.6
20
40
86
201
602
∞
HØRNER PLØT
FIELD REPORT NØ. 120620
INSTRUMENT:
NUMBER: J-867
CAPACITY: 6400 PSI
DEPTH: 7010 FT
SHUT-IN #2:
PRODUCING TIME (T_p): 598.8 MIN
FINAL FLOW PRESSURE (P_{WF}): 173 PSIG
PLØT ELAPSED TIME RANGE: 846.6 TØ 1802.2 MIN
SHUT-IN ΔT TIME RANGE: 1.5 TØ 957.1 MIN
SHUT-IN PRESSURE (PSIG)
2500
2200
1900
1600
1300
1000
700
400
100
1
M = -4532
P^* = 3264 PSIG
3.00
2.70
2.40
2.10
1.80
1.50
1.20
0.90
0.60
0.30
0.00
LØG $\left[\frac{T_p+\Delta T}{\Delta T}\right]$

FIELD REPORT NO. 120620

INSTRUMENT:

NUMBER: J-867

CAPACITY: 6400 PSI

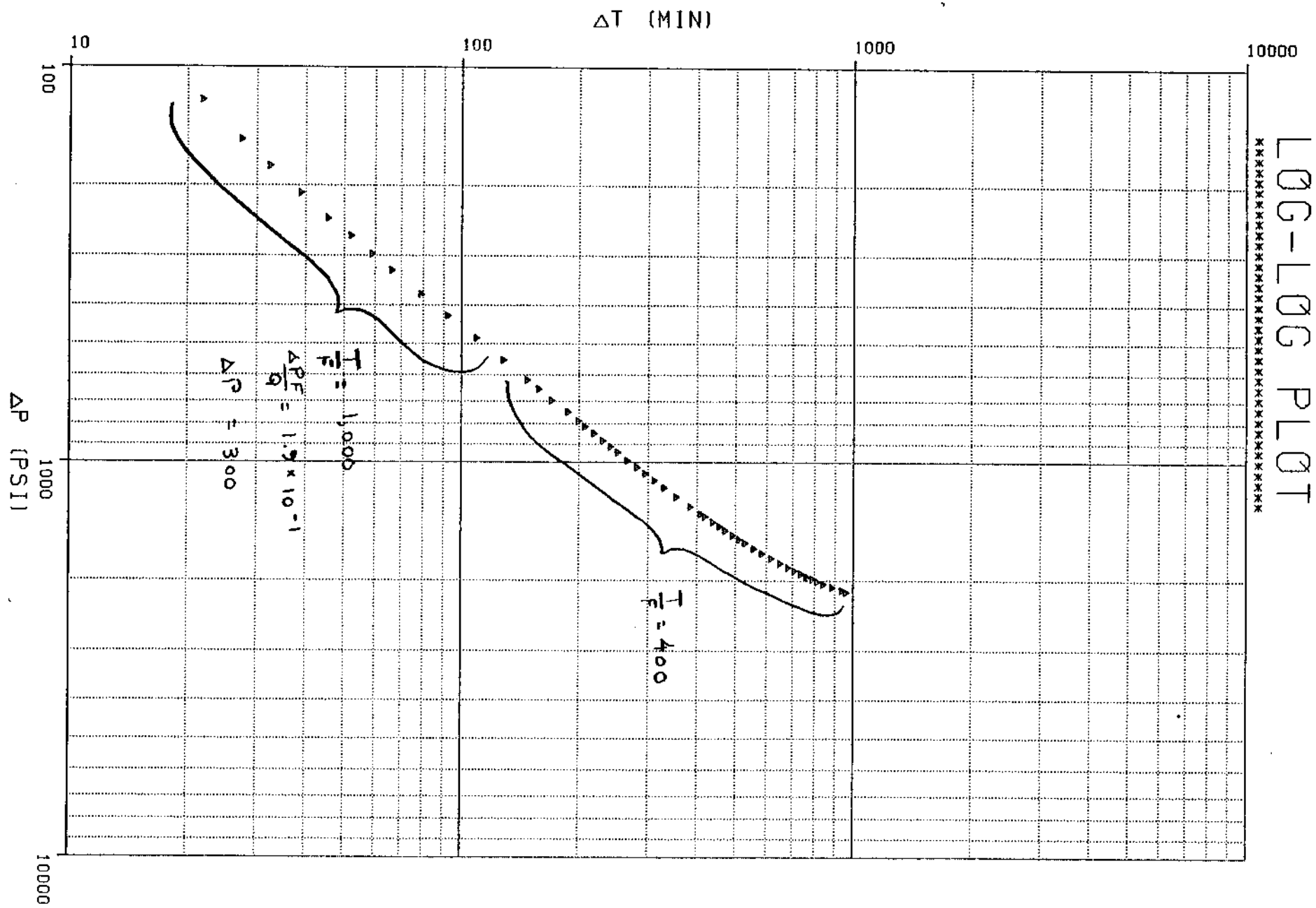
DEPTH: 7010 FT

SHUT-IN #2:

FINAL FLOW PRESSURE (P_{WF}): 173 PSIG

PLOT ELAPSED TIME RANGE: 866.9 TO 1802.2 MIN

SHUT-IN ΔT TIME RANGE: 21.7 TO 957.1 MIN



WELL IDENTIFICATION

COMPANY:	U.S.G.S./HUSKY OIL COMPANY 2525 C STREET; SUITE 400 ANCHORAGE, ALASKA 99503	CUSTOMER:	HUSKY OIL COMPANY
WELL:	LISBURNE #1	LOCATION:	SEC. 17 - T11S - R16W, UM
TEST INTERVAL:	7022' TO 7104'	FIELD:	NPR (WILD CAT)
TEST NO:	4	TEST DATE:	5-30-80
COUNTY:	NORTH SLOPE	STATE:	ALASKA
TECHNICIAN:	NEWCOMB (KENAI)	TEST APPROVED BY:	-

EQUIPMENT AND HOLE DATA

TEST TYPE:	M.F.E. CASING			DRILL PIPE LENGTH:	- FT.
				DRILL PIPE I.D.:	4.2 IN.
ELEVATION:	1862	FT.		DRILL COLLAR LENGTH:	- FT.
TOTAL DEPTH:	7230 PLUGGED BACK	FT.		DRILL COLLAR I.D.:	- IN.
MAIN HOLE/CASING SIZE:	9 5/8	IN.		PACKER DEPTHS:	6984 & FT.
RAT HOLE/LINER SIZE:	-	IN.			& FT.
FORMATION TESTED:	SHUBLIK				& FT.
NET PROD. INTERVAL:	82	FT.	DEPTHS REF. TO:		KELLY BUSHING
POROSITY:	3-11	%			

TEST TOOL CHAMBER DATA

SAMPLER PRESSURE:	100	PSIG	
RECOVERED OIL GRAVITY:	- API @	- DEG. F.	
RECOVERY GOR:	-	FT3/BBL.	

SAMPLE CHAMBER CONTENTS

FLUID	VOLUME	RESIST. (OHM-M)	MEAS. TEMP. (DEG F.)	CHLOR. (PPM)
GAS:	.81 FT.3			
OIL:	- CC			
WATER:	- CC	-	-	-
MUD:	- CC	-	-	
FILTRATE:		-	-	-
TOTAL LIQUID:	- CC			

MUD DATA

TYPE:	LIGNOSULFATE
WEIGHT:	10.2 LB/GAL.
VISCOSITY:	38 SEC.
WATER LOSS:	7.0 CC

FLUID	RESIST (OHM-M)	TEMP (DEG F)	CHLOR (PPM)
MUD:	-	-	
FILTRATE:	-	-	-

REMARKS

NO. OF REPORTS REQUESTED: 5

FIELD REPORT NO. 12062D

SURFACE INFORMATION

DESCRIPTION(RATE OF FLOW)	TIME	PRESSURE PSIG	SURFACE CHOKE
SET PACKER (5-30-80)	2317	-	-
OPENED TOOL STRONG BLOW	2326	-	BUBBLE HOSE
OPEN SURFACE	2330	-	1/8"
CLOSED BUBBLE HOSE	2331	-	"
OPEN CHOKE	2340	-	1/4"
CHANGE CHOKE	2350	-	1"
GAS TO SURFACE	2351	-	"
CLOSED FOR INITIAL SHUT-IN (5-31-80)	0126	-	"
FINISHED SHUT-IN	0526	-	"
RE-OPENED TOOL	0532	-	"
CLOSED FOR FINAL SHUT-IN	1331	-	"
FINISHED SHUT-IN (6-1-80)	0531	-	"
PULLED PACKER LOOSE	0532	-	"

CUSHION TYPE: - - FT PSIG | 3/4 IN. BOTTOM CHOKE

RECOVERY INFORMATION

RECOVERY	FEET	BARRELS	%OIL	%WATER	%OTHERS	API GRAV.	DEG.	RESIST	DEG.	CHL PPM
SLIGHTLY GAS CUT RAT HOLE MUD & FILTRATE	932	16.59								

FIELD REPORT NO. 12062D

FIELD REPORT NO.: 12062 D

CAPACITY: 6400#

INSTRUMENT NO.: J-885

NUMBER OF REPORTS: 5+

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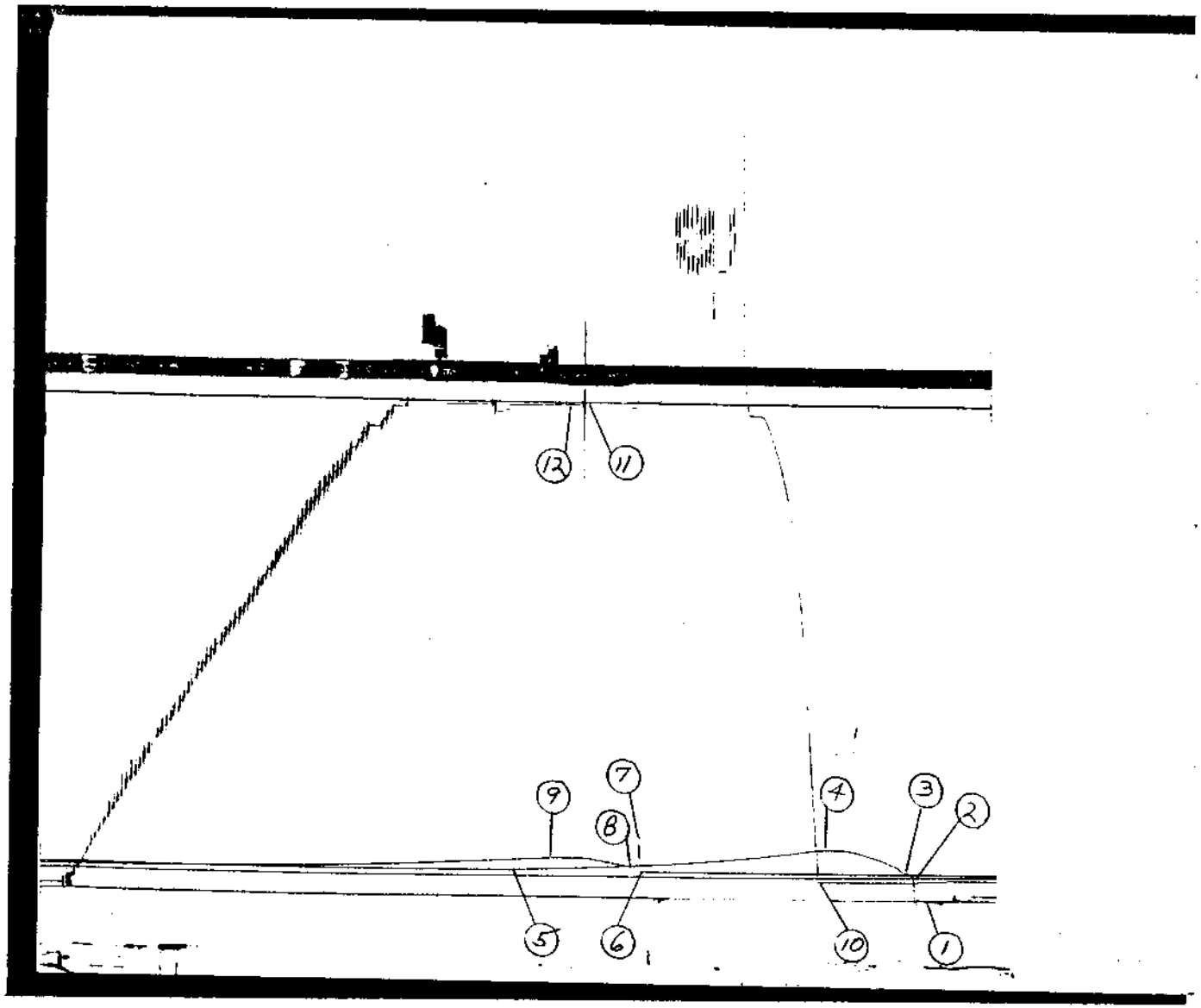
INSTRUMENT RAN ABOVE TOOL.



BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-885 CAPACITY (PSI): 6400 DEPTH (FT): 6917
PORT OPENING: INSIDE BOTTOM HOLE TEMP (F): 118

EXPLANATION	LABELED POINT	PRESSURE (PSIG)
HYDROSTATIC MUD	1	3
START FLOW	2	177
OPENED ON SURFACE	3	210
CHANGED CHOKE	4	372
END FLOW & START SHUT-IN	5	191
END SHUT-IN	6	190
START FLOW	7	411
FLOW POINT	8	224
FLOW POINT	9	283
END FLOW & START SHUT-IN	10	133
END SHUT-IN	11	3718
HYDROSTATIC MUD	12	3701

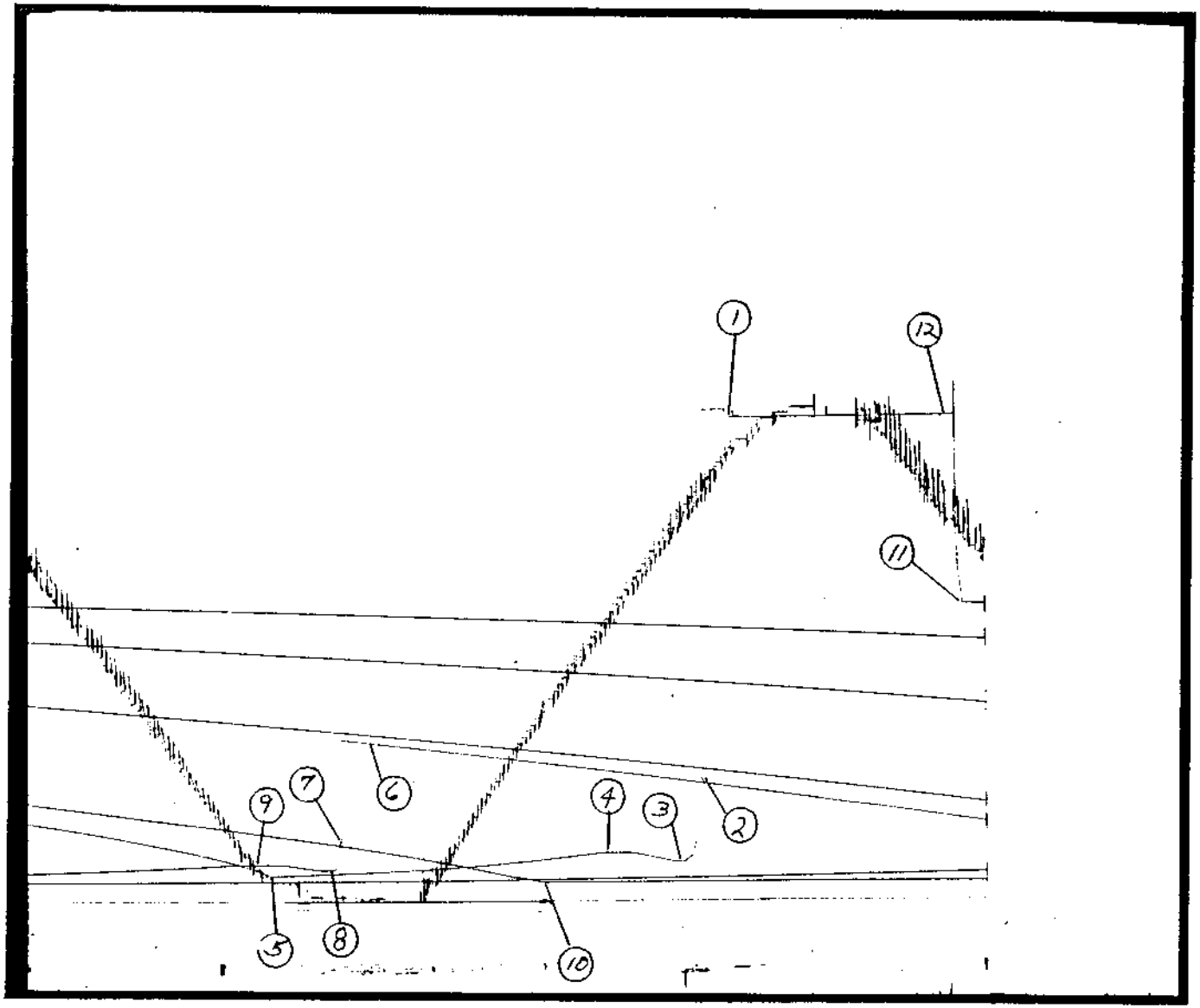
FIELD REPORT NO.: 12062 D

CAPACITY: 6400#

JOHNSTON Schlumberger

INSTRUMENT NO.: J-379

NUMBER OF REPORTS: 5+



BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-379
PORT OPENING: OUTSIDE

CAPACITY (PSI): 6400
BOTTOM HOLE TEMP (F): 118

DEPTH (FT): 7005

EXPLANATION	LABELED POINT	PRESSURE (PSIG)
HYDROSTATIC MUD	1	3751
START FLOW	2	944
OPENED ON SURFACE	3	347
CHANGED CHOKE	4	409
END FLOW & START SHUT-IN	5	235
END SHUT-IN	6	1256
START FLOW	7	500
FLOW POINT	8	281
FLOW POINT	9	323
END FLOW & START SHUT-IN	10	185
END SHUT-IN	11	2326
HYDROSTATIC MUD	12	3769

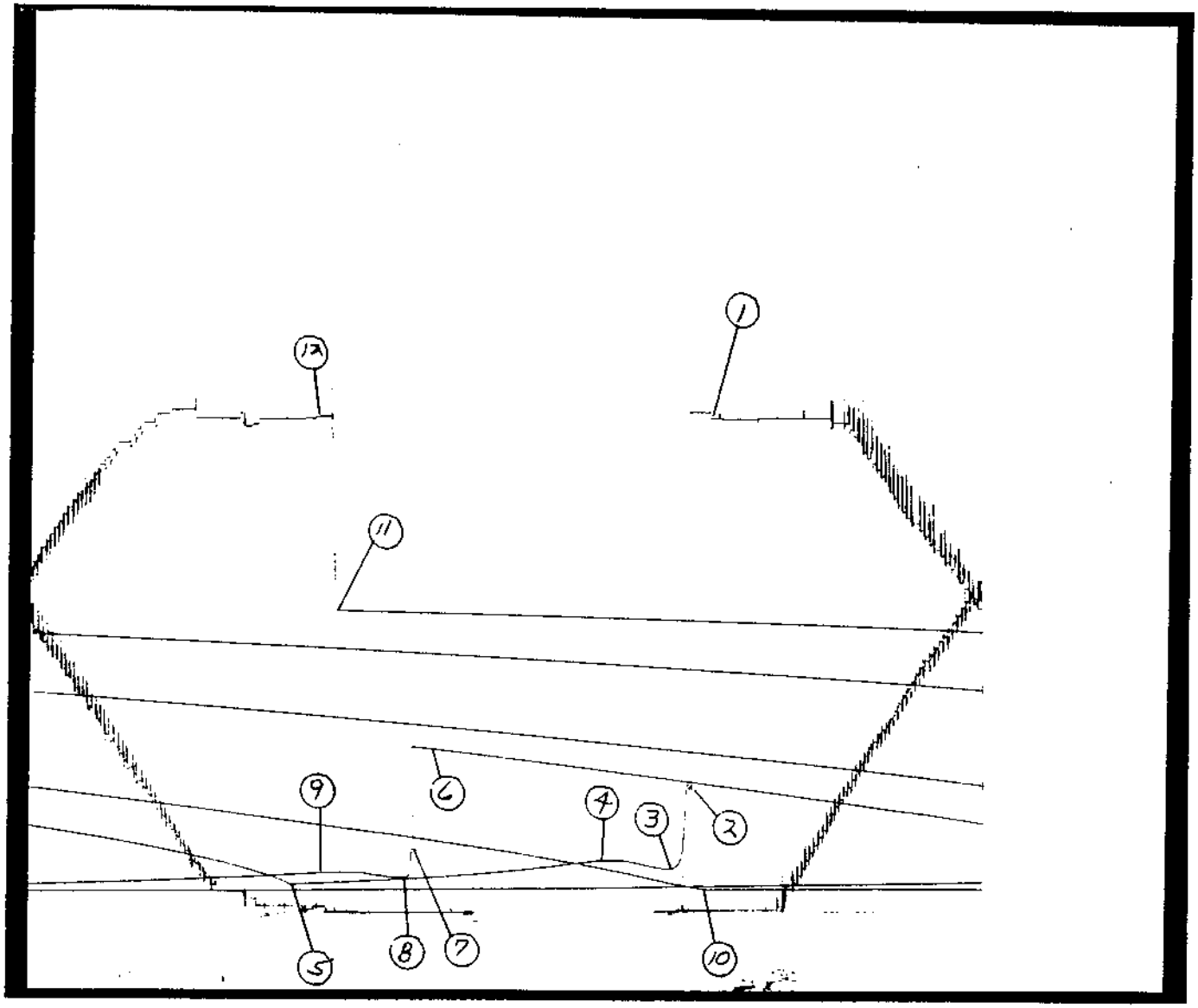
FIELD REPORT NO.: 12062 D

CAPACITY: 6400#

INSTRUMENT NO.: J-867

NUMBER OF REPORTS: 5+

JOHNSTON Schlumberger

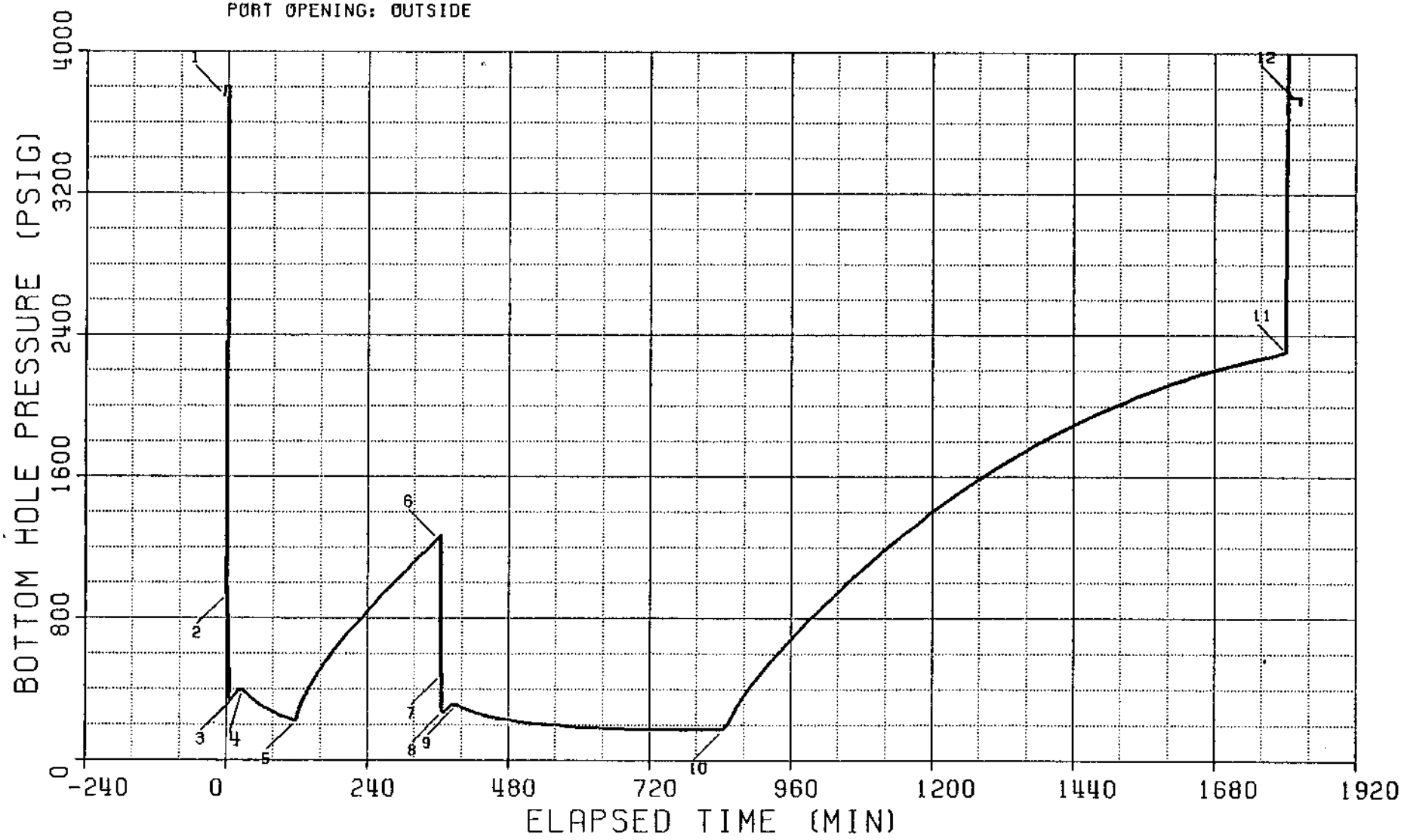


PRESSURE LOG

FIELD REPORT NO. 120620

INSTRUMENT:

NUMBER: J-867
CAPACITY: 6400 PSI
DEPTH: 7010 FT
PORT OPENING: OUTSIDE



BOTTOM HOLE PRESSURE AND TIME DATA

INSTRUMENT NO.: J-867 CAPACITY (PSI): 6400 DEPTH (FT): 7010
PORT OPENING: OUTSIDE BOTTOM HOLE TEMP (F): 118

EXPLANATION	LABELED POINT	PRESSURE (PSIG)	ELAPSED TIME (MIN)
HYDROSTATIC MUD	1	3754	-6.2
START FLOW	2	932	0.0
OPENED ON SURFACE	3	335	6.6
CHANGED CHOKE	4	397	27.5
END FLOW & START SHUT-IN	5	223	118.7
END SHUT-IN	6	1246	359.4
START FLOW	7	479	364.9
FLOW POINT	8	271	367.4
FLOW POINT	9	311	392.0
END FLOW & START SHUT-IN	10	173	845.1
END SHUT-IN	11	2303	1802.2
HYDROSTATIC MUD	12	3769	1807.8

SUMMARY OF FLOW PERIODS

FLOW PERIOD	ELAPSED TIME AT START (MIN)	ELAPSED TIME AT END (MIN)	DURATION OF FLOW (MIN)	PRESSURE AT START (PSIG)	PRESSURE AT END (PSIG)
1	0.0	118.7	118.7	932	223
2	364.9	845.1	480.2	479	173

SUMMARY OF SHUT-IN PERIODS

SHUT-IN PERIOD	ELAPSED TIME AT START (MIN)	ELAPSED TIME AT END (MIN)	DURATION OF SHUT-IN (MIN)	PRESSURE AT START (PSIG)	PRESSURE AT END (PSIG)	FINAL FLOW PRESSURE (PSIG)	PRODUCING TIME (MIN)
1	118.7	359.4	240.7	223	1246	223	118.7
2	845.1	1802.2	957.1	173	2303	173	598.8

FIELD REPORT NO. 12062D
INSTRUMENT NO. J-867

TEST PHASE: FLOW PERIOD # 1

ELAPSED TIME (MIN)	DELTA TIME (MIN)	FLOWING PRESSURE (PSIG)
Ø.Ø	Ø.Ø	932
1Ø.Ø	1Ø.Ø	343
2Ø.Ø	2Ø.Ø	394
3Ø.Ø	3Ø.Ø	389
4Ø.Ø	4Ø.Ø	357
5Ø.Ø	5Ø.Ø	329
6Ø.Ø	6Ø.Ø	3Ø5
7Ø.Ø	7Ø.Ø	284
8Ø.Ø	8Ø.Ø	269
9Ø.Ø	9Ø.Ø	254
1ØØ.Ø	1ØØ.Ø	242
11Ø.Ø	11Ø.Ø	232
118.7	118.7	223

TEST PHASE: SHUT-IN PERIOD # 1

1. FINAL FLOW PRESSURE ["P_{WF}"] = 223 PSIG
2. PRODUCING TIME ["T_{P}"] = 118.7 MIN

ELAPSED TIME (MIN)	DELTA TIME ["DT"] (MIN)	SHUT-IN PRESSURE ["P_{WS}"] (PSIG)	LOG [(T_{P} +DT)/DT]	DELTA PRESSURE [P_{WS} - P_{WF}]
118.7	Ø.Ø	223		Ø
119.7	1.Ø	238	2.Ø78	16
12Ø.7	2.Ø	251	1.781	28
121.7	3.Ø	262	1.6Ø8	39
122.7	4.Ø	273	1.487	5Ø
123.7	5.Ø	282	1.393	59
124.7	6.Ø	291	1.318	68
125.7	7.Ø	3ØØ	1.254	77
126.7	8.Ø	3Ø9	1.2ØØ	86
127.7	9.Ø	316	1.152	94
128.7	1Ø.Ø	323	1.1Ø9	1ØØ
13Ø.7	12.Ø	338	1.Ø37	115
132.7	14.Ø	353	Ø.977	13Ø
134.7	16.Ø	366	Ø.925	143
136.7	18.Ø	381	Ø.88Ø	158
138.7	2Ø.Ø	394	Ø.841	172
14Ø.7	22.Ø	4Ø6	Ø.8Ø6	183
142.7	24.Ø	418	Ø.774	195
144.7	26.Ø	429	Ø.745	2Ø6
146.7	28.Ø	44Ø	Ø.719	217
148.7	3Ø.Ø	45Ø	Ø.695	228

FIELD REPORT NO. 12062D
INSTRUMENT NO. J-867

TEST PHASE : SHUT-IN PERIOD # 1

1. FINAL FLOW PRESSURE ["P_{WF}"] = 223 PSIG
2. PRODUCING TIME ["T_P"] = 118.7 MIN

ELAPSED TIME (MIN)	DELTA TIME ["DT"] (MIN)	SHUT-IN PRESSURE ["P_{WS}"] (PSIG)	LOG [(T_P +DT)/DT]	DELTA PRESSURE [P_{WS} - P_{WF}]
158.7	40.0	506	0.598	283
168.7	50.0	556	0.528	333
178.7	60.0	599	0.474	376
188.7	70.0	642	0.431	419
198.7	80.0	683	0.395	460
208.7	90.0	724	0.365	502
218.7	100.0	760	0.340	537
228.7	110.0	793	0.318	571
238.7	120.0	831	0.299	609
248.7	130.0	869	0.282	647
258.7	140.0	908	0.267	685
268.7	150.0	944	0.253	721
278.7	160.0	978	0.241	755
288.7	170.0	1012	0.230	789
298.7	180.0	1047	0.220	824
308.7	190.0	1081	0.211	858
318.7	200.0	1115	0.202	892
328.7	210.0	1148	0.195	925
338.7	220.0	1181	0.187	958
348.7	230.0	1213	0.181	990
358.7	240.0	1244	0.174	1021
359.4	240.7	1246	0.174	1023

TEST PHASE : FLOW PERIOD # 2

ELAPSED TIME (MIN)	DELTA TIME (MIN)	FLOWING PRESSURE (PSIG)
364.9	0.0	479
379.9	15.0	305
394.9	30.0	306
409.9	45.0	286
424.9	60.0	269
439.9	75.0	253
454.9	90.0	243
469.9	105.0	232
484.9	120.0	225
499.9	135.0	217
514.9	150.0	211
529.9	165.0	205

FIELD REPORT NO. 12062D
INSTRUMENT NO. J-867

TEST PHASE : FLOW PERIOD # 2

ELAPSED TIME (MIN)	DELTA TIME (MIN)	FLOWING PRESSURE (PSIG)
544.9	180.0	202
559.9	195.0	200
574.9	210.0	194
589.9	225.0	189
604.9	240.0	187
619.9	255.0	184
634.9	270.0	182
649.9	285.0	180
664.9	300.0	178
679.9	315.0	177
694.9	330.0	175
709.9	345.0	174
724.9	360.0	174
739.9	375.0	174
754.9	390.0	174
769.9	405.0	174
784.9	420.0	174
799.9	435.0	173
814.9	450.0	173
829.9	465.0	173
844.9	480.0	173
845.1	480.2	173

TEST PHASE : SHUT-IN PERIOD # 2

1. FINAL FLOW PRESSURE ["P_{WF}"] = 173 PSIG
2. PRODUCING TIME ["T_P"] = 598.8 MIN

ELAPSED TIME (MIN)	DELTA TIME ["DT"] (MIN)	SHUT-IN PRESSURE ["P_{WS}"] (PSIG)	LOG [(T_P+DT)/DT]	DELTA PRESSURE [$P_{WS} - P_{WF}$]
845.1	0.0	173		0
846.1	1.0	178	2.778	6
847.1	2.0	183	2.478	10
848.1	3.0	187	2.302	14
849.1	4.0	192	2.178	19
850.1	5.0	197	2.082	24
851.1	6.0	200	2.003	28
852.1	7.0	202	1.937	29
853.1	8.0	208	1.880	35
854.1	9.0	214	1.830	41
855.1	10.0	221	1.785	48
857.1	12.0	234	1.707	61

FIELD REPORT NO. 12062D
INSTRUMENT NO. J-867

TEST PHASE : SHUT-IN PERIOD # 2

1. FINAL FLOW PRESSURE ["P_{WF}"] = 173 PSIG
2. PRODUCING TIME ["T_P"] = 598.8 MIN

ELAPSED TIME (MIN)	DELTA TIME ["DT"] (MIN)	SHUT-IN PRESSURE ["P_{WS}"] (PSIG)	LOG [(T_P +DT)/DT]	DELTA PRESSURE [P_{WS} - P_{WF}]
859.1	14.Ø	246	1.641	73
861.1	16.Ø	259	1.585	86
863.1	18.Ø	271	1.535	98
865.1	2Ø.Ø	283	1.491	11Ø
867.1	22.Ø	295	1.451	122
869.1	24.Ø	3Ø7	1.414	134
871.1	26.Ø	318	1.381	145
873.1	28.Ø	329	1.35Ø	156
875.1	3Ø.Ø	339	1.321	166
9Ø5.1	6Ø.Ø	475	1.Ø41	3Ø2
935.1	9Ø.Ø	592	Ø.884	419
965.1	12Ø.Ø	697	Ø.777	524
995.1	15Ø.Ø	8Ø3	Ø.698	631
1Ø25.1	18Ø.Ø	9Ø1	Ø.636	728
1Ø55.1	21Ø.Ø	996	Ø.586	823
1Ø85.1	24Ø.Ø	1Ø86	Ø.543	913
1115.1	27Ø.Ø	1175	Ø.5Ø8	1ØØ2
1145.1	3ØØ.Ø	1257	Ø.477	1Ø84
1175.1	33Ø.Ø	1335	Ø.449	1162
12Ø5.1	36Ø.Ø	1412	Ø.425	1239
1235.1	39Ø.Ø	1483	Ø.4Ø4	131Ø
1265.1	42Ø.Ø	1552	Ø.385	1379
1295.1	45Ø.Ø	1618	Ø.368	1445
1325.1	48Ø.Ø	1681	Ø.352	15Ø8
1355.1	51Ø.Ø	1739	Ø.337	1566
1385.1	54Ø.Ø	1797	Ø.324	1624
1415.1	57Ø.Ø	1849	Ø.312	1676
1445.1	6ØØ.Ø	1899	Ø.3Ø1	1726
1475.1	63Ø.Ø	1945	Ø.29Ø	1772
15Ø5.1	66Ø.Ø	1989	Ø.28Ø	1817
1535.1	69Ø.Ø	2Ø33	Ø.271	1861
1565.1	72Ø.Ø	2Ø74	Ø.263	19Ø1
1595.1	75Ø.Ø	2111	Ø.255	1939
1625.1	78Ø.Ø	2147	Ø.247	1974
1655.1	81Ø.Ø	2179	Ø.24Ø	2ØØ6
1685.1	84Ø.Ø	22Ø8	Ø.234	2Ø35
1715.1	87Ø.Ø	2234	Ø.227	2Ø61
1745.1	9ØØ.Ø	2258	Ø.222	2Ø85
1775.1	93Ø.Ø	2281	Ø.216	21Ø8
18Ø2.2	957.1	23Ø3	Ø.211	213Ø